Phone Numbers and Address

If, after reading this Catalog, you have further questions or specific inquiries about the programs of, or admission to, The University of North Carolina at Charlotte, please look below to find the proper office to contact. Address correspondence to any of the offices in care of:

The University of North Carolina at Charlotte
Attn: Department or College
9201 University City Boulevard
Charlotte, NC 28223-0001

INFORMATION

Campus Operator/Switchboard. 704-687-8622(UNCC)

Academic Affairs.............................. 704-687-5717
Academic Services............................ 704-687-7227
Admissions
  Undergraduate .......................... 704-687-5507
  Graduate ................................ 704-687-5503
  International ......................... 704-687-5503
  Summer Programs ..................... 704-687-4481
Adult Students and Evening Services .. 704-687-2596
Advising Center.............................. 704-687-7717
Athletics ..................................... 704-687-4937
Bookstore .................................... 704-687-7050
Colleges
  Arts + Architecture .................... 704-687-4841
  Business .................................. 704-687-7577
  Computing and Informatics .......... 704-687-8450
  Education .................................. 704-687-8722
  Engineering .............................. 704-687-8244
  Graduate School ...................... 704-687-5503
  Health and Human Services ......... 704-687-8374
  Honors College ......................... 704-687-7197
  Liberal Arts and Sciences ............ 704-687-0088
  University College ..................... 704-687-5630
  Continuing Education ................. 704-687-8900
  Counseling Center ..................... 704-687-2105
  Dean of Students ....................... 704-687-0345
  Dining Services and Meal Plans ...... 704-687-7337
  Disability Services ..................... 704-687-4355
  Distance Education ...................... 704-687-3008
  Financial Aid ............................ 704-687-5504
  Health Center ............................ 704-687-7400
  Housing and Residence Life .......... 704-687-7501
  ID Office ................................ 704-687-7040
  International Programs ............... 704-687-7755
  Library .................................... 704-687-2030
  Parking .................................... 704-687-0161
  Recreational Services ................. 704-687-2564
  Registrar’s Office ...................... 704-687-5505
  Student Accounts ....................... 704-687-5506
  Student Activities/Student Union ... 704-687-7100
  Transcripts ................................ 704-687-5505
  University Career Center ............. 704-687-2231
  University Center for Academic Excellence 704-687-2162

Acknowledgements

This Catalog was prepared and published by the Office of Academic Affairs in June 2011. Its goal is to provide a comprehensive, accurate, and useful catalog, which fully describes the academic programs, policies, regulations, and requirements of the University.

Although the publisher of this Catalog has made every reasonable effort to attain factual accuracy herein, no responsibility is assumed for editorial, clerical or printing errors, or errors occasioned by mistakes. The publisher has attempted to present information that, at the time of preparation for printing, most accurately describes the course offerings, faculty listings, policies, procedures, regulations, and requirements of the University. However, it does not establish contractual relations. The University reserves the right to alter or change any statement contained herein without prior notice.

We request that omissions and inaccuracies be brought to the attention of the Editor, as well as any suggestions and comments on the presentation and content.

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Eric A. Klee, Catalog Editor and Web Content Manager
eklee@uncc.edu

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  Inaugural Class of Levine Scholars Program (top)
  Student Union (bottom)

University Photography
Wade Bruton, University Photographer

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Graduation Rate Disclosure Statement
Our data shows that 59.9% of the full-time new freshmen who entered UNC Charlotte in Fall 2004 have received a baccalaureate from this institution or another UNC institution as of Fall 2010. In addition, another 6.2% were enrolled at this or another UNC institution in pursuit of their baccalaureate degree as of Fall 2010. This information is provided pursuant to requirements of the Student-Right-to-Know and Campus Security Act of 1990.

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All rights reserved.
The University of North Carolina at Charlotte is committed to equality of educational opportunity and does not discriminate against applicants, students, or employees based on race, color, national origin, religion, sex, sexual orientation, age, or disability. In keeping with this commitment, UNC Charlotte actively seeks to promote diversity in its educational environment through its recruitment, enrollment, and hiring practices.
Dear Students,

Welcome to UNC Charlotte, North Carolina’s urban research university. Whether you are pursuing an undergraduate or graduate degree, UNC Charlotte is committed to providing you with the resources and support necessary to complete your educational journey. The expertise of our dedicated faculty, support of our staff, and the many resources and services available will help you meet your personal and professional goals.

You are joining the Niner Nation at an exciting time. This academic year, we open the doors to our new Center City Building, located in Uptown Charlotte. The 11-story building houses a number of our continuing education and graduate programs, linking Center City directly to the University. We also continue to prepare for the 2013 kick off of the inaugural UNC Charlotte football season. I hope to see you when the Charlotte 49ers football team takes the field for the first time at home against Campbell University on August 31, 2013.

Indeed, the University and the greater Charlotte region provide a diverse and dynamic environment in which to study, live and work. You won’t have to look far to find unique educational and recreational opportunities. I encourage you to become engaged in the life of the University by taking advantage of the countless activities on and off campus, including special interest student organizations, leadership and volunteer opportunities, Greek organizations, lectures, and intramural sports and athletics.

Thank you for making UNC Charlotte your university. Go Niners!

Cordially,

Philip L. Dubois
Chancellor

If this is your first year at UNC Charlotte, welcome to our great campus! If you are returning, we are pleased to welcome you back.

Our University is constantly changing, and you are a part of that change. The reputation of any great school is based in large part on the success of its students, and we are dedicated to supporting yours. Our distinguished faculty are here to provide you with a quality education that will open doors for you. If we do our job right, your education will be intellectually challenging. If you do your job right, these years at UNC Charlotte will lay the groundwork for an exciting and satisfying future.

Remember, too, that there is more to the collegiate experience than coursework. I encourage you to become involved in some of the many activities or student organizations that are available to you. There, you will build friendships and relationships with both your fellow students and our faculty that you will take with you and cherish as you move on through the years.

We are pleased that you have chosen UNC Charlotte. As we continue to grow, we look forward to your continuing to grow with us as a person, scholar, and future alumnus/alumna.

Sincerely,

Joan F. Lorden
Provost and Vice Chancellor for Academic Affairs
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# Academic Calendar

## 2011-2012

UNC Charlotte’s academic year is divided into three terms: Fall, Spring, and Summer.

### FALL 2011

- **Aug 15**: Academic year begins
- **Aug 22**: First day of instruction
- **Aug 27**: First day for Saturday classes
- **Sep 3**: No Saturday classes
- **Sep 5**: HOLIDAY: Labor Day
- **Oct 10-11**: Student recess
- **Nov 7**: Registration for Spring 2012 begins
- **Nov 23-26**: HOLIDAY: Thanksgiving
- **Dec 7**: Last day of instruction
- **Dec 8**: Reading day
- **Dec 9-16**: Final examinations*
- **Dec 17**: Fall Commencement

### SPRING 2012

- **Jan 9**: First day of instruction
- **Jan 14**: First day for Saturday classes
- **Jan 16**: HOLIDAY: M.L. King, Jr. Day
- **Mar 5-10**: Spring Break
- **Mar 26**: Registration for Spring 2012 and Fall 2012 begins
- **Apr 6-7**: Spring Recess
- **Apr 28**: Final examinations for Saturday classes*
- **May 1**: Last day of instruction
- **May 2**: Reading day
- **May 3-4, 7-10**: Final examinations*
- **May 11**: Ceremony Day
- **May 12**: Spring Commencement
- **May 14**: Academic year ends

### SUMMER 2012

- **May 21 - Jun 27**: First Summer Term
- **May 21 - Aug 10**: Extended Summer Term
- **May 28**: HOLIDAY: Memorial Day
- **Jun 28 - Jul 4**: No classes
- **Jul 4**: HOLIDAY: Independence Day
- **Jul 5 - Aug 10**: Second Summer Term

*Common Examinations held on the first day of exams.*

---

**Please note:** All dates are subject to change. A complete list of dates and deadlines is available online from the Office of the Registrar at http://registrar.uncc.edu/calendars/calendar.asp. Please check this site for the most current information.
ABOUT THE CATALOG

The University of North Carolina at Charlotte Undergraduate Catalog (hereby referred to as the “Catalog”) is not an irrevocable contract. Regulations published in it are subject to change by the University at any time without notice. University regulations are policy statements to guide students, faculty, and administrative officers in achieving the goals of the institution. Necessary interpretations of these policies will be made by the appropriate authorities with the interest of the students and the institution in mind. Students are encouraged to consult an advisor if they have questions about the application of any policy.

The University reserves the right to change any of the rules and regulations of the University at any time, including those relating to admission, instruction, and graduation. The University also reserves the right to withdraw curricula and specific courses, alter course content, change the calendar, and to impose or increase fees. All such changes are effective as proper authorities determine and may apply not only to prospective students, but also to those who are already enrolled in the University.

The requirements specified in this Catalog apply to students who commence their studies at the UNC Charlotte during the 2011-2012 academic year and who remain in continuous enrollment at the institution until they graduate. If requirements are changed, students may elect to comply with the new requirements or to remain under the requirements by which they are governed at the time of the change. The choice to apply the new requirements must be declared by students at least one semester prior to graduation through their academic departments.

Students who change their major/minor are bound by the requirements of their new major/minor that are in effect the semester they officially begin studies in the new program.

Students who are readmitted to the University are bound by the program and degree requirements in force at the time of readmission.

Exceptions to these policies may be necessitated by changes in course offerings, degree programs or by action of authorities higher than the University. In that event, every effort will be made to avoid penalizing the student.

READER’S GUIDE TO THE CATALOG

This Catalog is divided into three sections. The first section contains information about the academic calendar, the degree programs offered, admission, student conduct, degree requirements and academic regulations, and financial information, including tuition and fees and financial aid.

The second (or curriculum) section describes the University’s academic programs in detail. The
section is organized in alphabetical order by the seven academic colleges, followed by each individual department or program. The section ends with an alphabetical listing of all courses offered.

The third and final section contains information about student life on campus, academic resources, and student services, as well as a faculty directory and glossary of higher education terminology. Rounding out this section is an index which is helpful in locating a topic quickly.

**STUDENT RESPONSIBILITY**

Each student is responsible for the proper completion of his or her academic program, for familiarity with the Catalog, for maintaining the grade point average required, and for meeting all other degree requirements. Students assume academic and financial responsibility for the courses in which they enroll and are relieved of these responsibilities only by formally terminating enrollment. The advisor will counsel, but the final responsibility remains that of the student.

A student is required to have knowledge of and observe all regulations pertaining to campus life and student behavior. Students are encouraged to familiarize themselves with academic terminology located in the Glossary section of this Catalog.

Email is the official form of communication at the University; each student is responsible for checking their uncc.edu email regularly, as well as maintaining communication with the University and keeping a current address and telephone number on file with the Office of the Registrar.

While associated with the University, each student is expected to participate in campus and community life in a manner that will reflect credit upon the student and the University. The University has enacted two codes of student responsibility — The UNC Charlotte Code of Student Academic Integrity and The UNC Charlotte Code of Student Responsibility — which are summarized in this Catalog and available in full online at legal.uncc.edu/policies/#student. As students willingly accept the benefits of membership in the UNC Charlotte academic community, they acquire obligations to observe and uphold the principles and standards that define the terms of UNC Charlotte community cooperation and make those benefits possible. This includes completion of institutional surveys as requested by the University for program assessment and improvement.
UNC Charlotte offers 19 doctoral programs, 62 master’s degree programs and 92 programs leading to bachelor’s degrees. Additionally, numerous undergraduate minors and some undergraduate certificates are offered.

### COLLEGE AND PROGRAM

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## COLLEGE AND PROGRAM

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## Engineering Technology

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In North Carolina, all the public educational institutions that grant baccalaureate degrees are part of the University of North Carolina (UNC). The multi-campus state university encompasses 16 such institutions, as well as the NC School of Science and Mathematics, the nation’s first public residential high school for gifted students. Chartered by the North Carolina General Assembly in 1789, the University of North Carolina was the first public university in the United States to open its doors and the only one to graduate students in the eighteenth century. The first class was admitted in Chapel Hill in 1795. For the next 136 years, the only campus of the University of North Carolina was at Chapel Hill.

Additional institutions of higher education, diverse in origin and purpose, began to win sponsorship from the General Assembly beginning as early as 1877. Five were historically black institutions, and another was founded to educate American Indians. Some began as high schools. Several were created to prepare teachers for the public schools. Others had a technological emphasis. One is a training school for performing artists.

The 1931 session of the General Assembly redefined the University of North Carolina to include three state-supported institutions: the campus at Chapel Hill (now the University of North Carolina at Chapel Hill), North Carolina State College (now North Carolina State University), and Woman’s College (now the University of North Carolina at Greensboro). The new multi-campus University operated with one board of trustees and one president. By 1969, three additional campuses had joined the University through legislative action: the University of North Carolina at Charlotte, the University of North Carolina at Asheville, and the University of North Carolina at Wilmington.

In 1971, legislation was passed bringing into the University of North Carolina the state’s ten remaining public senior institutions, each of which had until then been legally separate: Appalachian State University, East Carolina University, Elizabeth City State University, Fayetteville State University, North Carolina Agricultural and Technical State University, North Carolina Central University, the North Carolina School of the Arts (now the University of North Carolina School of the Arts), Pembroke State University (now the University of North Carolina at Pembroke), Western Carolina University, and Winston-Salem State University. In 1985, the NC School of Science and Mathematics (NCSSM) was declared an affiliated school of the University; in July 2007, NCSSM by legislative action became a constituent institution of the University of North Carolina. All the schools and universities welcome students of both sexes and all races.

The UNC Board of Governors is the policy-making body legally charged with “the general determination, control, supervision, management, and governance of all affairs of the constituent institutions.” It elects the president, who administers the University. The 32 voting members of the Board of Governors are elected by the General Assembly for four-year terms. Former board chairmen and board members who are former governors of North Carolina may continue to serve for limited periods as non-voting members emeriti. The president of the UNC Association of Student Governments or that student’s designee is also a non-voting member.

Each of the UNC campuses is headed by a chancellor who is chosen by the Board of Governors on the president’s nomination and is responsible to the president. Each university has a board of trustees consisting of eight members elected by the Board of Governors, four appointed by the governor, and the president of the student body, who serves ex officio. (The UNC School of the Arts has two additional ex officio members; and the NC School of Science and Mathematics has a 27-member board as required by law.) Each board of trustees holds extensive powers over academic and other operations of its campus on delegation from the Board of Governors.
In addition to its teaching role, the University of North Carolina has a long-standing commitment to public service. The UNC Center for Public Television, the UNC Health Care System, the cooperative extension and research services, nine area health education centers, and myriad other University programs and facilities reap social and economic benefits for the state and its people.

THE UNIVERSITY OF NORTH CAROLINA AT CHARLOTTE

UNC Charlotte is one of a generation of universities founded in metropolitan areas of the United States immediately after World War II in response to rising education demands generated by the war and its technology.

To serve returning veterans, North Carolina opened 14 evening college centers in communities across the state. The Charlotte Center opened Sept. 23, 1946, offering evening classes to 278 freshmen and sophomore students in the facilities of Charlotte’s Central High School. After three years, the state closed the centers, declaring that on-campus facilities were sufficient to meet the needs of returning veterans and recent high school graduates.

Charlotte’s education and business leaders, long aware of the area’s unmet needs for higher education, moved to have the Charlotte Center taken over by the city school district and operated as Charlotte College, offering the first two years of college courses. Later the same leaders asked Charlotte voters to approve a two-cent tax to support that college.

Charlotte College drew students from the city, Mecklenburg County and from a dozen surrounding counties. The two-cent tax was later extended to all of Mecklenburg County. Ultimately financial support for the college became a responsibility of the State of North Carolina.

As soon as Charlotte College was firmly established, efforts were launched to give it a campus of its own. With the backing of Charlotte business leaders and legislators from Mecklenburg and surrounding counties, land was acquired on the northern fringe of the city and bonds were passed to finance new facilities. In 1961, Charlotte College moved its growing student body into two new buildings on what was to become a 1,000-acre campus 10 miles from downtown Charlotte.

Three years later, the North Carolina legislature approved bills making Charlotte College a four-year, state-supported college. The next year, 1965, the legislature approved bills creating the University of North Carolina at Charlotte, the fourth campus of the statewide university system. In 1969, the university began offering programs leading to master’s degrees. In 1992, it was authorized to offer programs leading to doctoral degrees.

Today, with an enrollment ranking it fourth among the 17 schools in the UNC system, it is the largest public university in the greater Charlotte metropolitan region. A doctoral institution, UNC Charlotte serves the region through applied research, knowledge transfer and engaged community service.

More than 900 full-time teaching faculty comprise the University’s academic departments, and the 2010 fall enrollment exceeded 25,000 students, including 5,300 graduate students.

MISSION STATEMENT OF UNC CHARLOTTE
Approved by the Board of Governors on November 20, 2009.

UNC Charlotte is North Carolina’s urban research university. It leverages its location in the state’s largest city to offer internationally competitive programs of research and creative activity, exemplary undergraduate, graduate, and professional programs, and a focused set of community engagement initiatives. UNC Charlotte maintains a particular commitment to addressing the cultural, economic, educational, environmental, health, and social needs of the greater Charlotte region.

In fulfilling this mission, we value:

- Accessible and affordable quality education that equips students with intellectual and professional skills, ethical principles, and an international perspective.
- A strong foundation in liberal arts and opportunities for experiential education to enhance students’ personal and professional growth.
- A robust intellectual environment that values social and cultural diversity, free expression, collegiality, integrity, and mutual respect.
- A safe, diverse, team-oriented, ethically responsible, and respectful workplace environment that develops the professional capacities of our faculty and staff.

To achieve a leadership position in higher education, we will:

- Implement our Academic Plan and related administrative plans.
• Rigorously assess our progress using benchmarks appropriate to the goals articulated by our programs and in our plans.

• Serve as faithful stewards of the public and private resources entrusted to us and provide effective and efficient administrative services that exceed the expectations of our diverse constituencies.

• Create meaningful collaborations among university, business, and community leaders to address issues and opportunities of the region.

• Develop an infrastructure that makes learning accessible to those on campus and in our community and supports the scholarly activities of the faculty.

• Pursue opportunities to enhance personal wellness through artistic, athletic, or recreational activities.

• Operate an attractive, environmentally responsible and sustainable campus integrated with the retail and residential neighborhoods that surround us.

THE COLLEGES WITHIN UNC CHARLOTTE

UNC Charlotte’s largest academic units are its colleges. Each consists of smaller units called schools, departments, or programs.

COLLEGE OF ARTS + ARCHITECTURE
Includes the School of Architecture and the Departments of Art and Art History, Dance, Music, and Theatre. The College also offers a variety of master’s programs.

THE BELK COLLEGE OF BUSINESS
Offers business education programs in a variety of disciplines in one of the country's fastest-growing cities and one of the most exciting financial services centers in the world. With more than 2500 undergraduate students and 500 graduate students, the Belk College is one of the largest business programs in the Carolinas.

COLLEGE OF COMPUTING AND INFORMATICS
Provides academic programs in Computer Science, Software and Information Systems, Information Technology, and Bioinformatics. It is also the home to leading research centers and institutes, including the Cyber Defense and Network Assurability (CyberDNA) Center, the Bioinformatics Research Center, the Charlotte Visualization Center, the Diversity in Information Technology Institute, the eBusiness Technology Institute, and the Software Solutions Lab.

COLLEGE OF EDUCATION
It has almost 3,000 undergraduate and graduate students. Its academic departments include the Departments of Counseling; Educational Leadership; Middle, Secondary, and K-12 Education; Reading and Elementary Education; and Special Education and Child Development.

THE WILLIAM STATES LEE COLLEGE OF ENGINEERING
Includes the Departments of Civil and Environmental Engineering; Electrical and Computer Engineering, Mechanical Engineering and Engineering Science, and Engineering Technology, as well as a program in Systems Engineering and Engineering Management. From the bachelor’s to the doctoral level, College of Engineering students participate in experiential, hands-on projects; learning to visualize, design, create, build, and apply.

COLLEGE OF HEALTH AND HUMAN SERVICES
home to bachelor’s degrees in Athletic Training, Exercise Science, Nursing, Public Health Sciences, and Social Work, as well as several master’s degree programs and a doctoral program in Health Services Research.

COLLEGE OF LIBERAL ARTS AND SCIENCES
The oldest and largest college within the University. It serves half the undergraduate majors with a host of programs in the humanities, physical sciences, and social sciences.

UNIVERSITY STRUCTURE

UNC Charlotte is organized into four administrative divisions: Academic Affairs, Business Affairs, Student Affairs, and University Advancement. These divisions, as well as Athletics, Legal Affairs, and Internal Audit, all report to the Chancellor.

ACADEMIC AFFAIRS
The Division of Academic Affairs includes Academic Services; Enrollment Management; Information and Technology Services; International Programs; Library; Metropolitan Studies and Extended Academic Programs; Research and Federal Relations; The Graduate School; University College; and seven discipline-based colleges: the Colleges of Arts + Architecture, Business, Computing and Informatics, Education, Engineering, Health and Human Services, and Liberal Arts and Sciences.

BUSINESS AFFAIRS
The Division of Business Affairs includes Business Services; Environmental Health and Safety Office, Facilities Management; Financial Services; Human Resources; Policy and Public Safety; Risk Management, Safety, and Security; and Systems Development.

STUDENT AFFAIRS
The Division of Student Affairs includes departments and services which assist students through every aspect of their education, as well as providing social opportunities. Included are offices and services such as the Counseling Center, Dean of Students, Housing
and Residence Life, Recreational Services, Student Activities, Student Health Center, and the Student Union.

UNIVERSITY ADVANCEMENT
The Division of University Advancement includes Broadcast Communications, Public Relations, and Marketing, which serve as UNC Charlotte's primary contact with members of the news media and external audiences. They are responsible for communicating information that promotes the people, programs, news, and events of UNC Charlotte. Marketing is also responsible for implementing an integrated communications and marketing plan for the University, including the University website. Additionally, this division includes the Offices of Alumni Affairs, Community Affairs, Constituent Relations, and University Development. Today, UNC Charlotte boasts more than 80,000 living alumni and adds 4,500 to 5,000 new alumni each year.

EQUAL OPPORTUNITY AND AFFIRMATIVE ACTION
The University of North Carolina at Charlotte recognizes a moral, economic, and legal responsibility to ensure equal employment opportunity for all persons, regardless of race, color, religion, gender (except when gender is a bona fide occupational qualification), sexual orientation, age, national origin, physical or mental disability (except when making accommodations for physical or mental disabilities would impose undue hardship on the conduct of University business), or veteran status. This policy is a fundamental necessity for the continued growth and development of this University. Nondiscriminatory consideration shall be afforded applicants and employees in all employment actions including recruiting, hiring, training, promotion, placement, transfer, layoff, leave of absence, and termination. All personnel actions pertaining to either academic or nonacademic positions to include such matters as compensation, benefits, transfers, layoffs, return from layoffs, University-sponsored training, education, tuition assistance, and social and recreational programs shall be administered according to the same principles of equal opportunity. Promotion and advancement decisions shall be made in accordance with the principles of equal opportunity, and the University shall, as a general policy, attempt to fill existing position vacancies from qualified persons already employed by the University. Outside applicants may be considered concurrently at the discretion of the selecting official. The University has established reporting and monitoring systems to ensure adherence to this policy of nondiscrimination.

AFFIRMATIVE ACTION
Our philosophy concerning equal employment opportunity is affirmed and promoted in the University's Affirmative Action Plan. To facilitate UNC Charlotte's affirmative action efforts on behalf of disabled workers, veterans (including veterans of the Vietnam Era), individuals who qualify and wish to benefit from the Affirmative Action Plan are invited and encouraged to identify themselves. This information is provided voluntarily, and refusal of employees to identify themselves as veterans or disabled persons will not subject them to discharge or disciplinary action. Unless otherwise required by law, the information obtained will be kept confidential in the manner required by law, except that supervisors and managers may be informed about restrictions on the work or duties of disabled persons and about necessary accommodations.

DISCRIMINATORY PERSONAL CONDUCT
The University seeks to promote a fair, humane, and respectful environment for its faculty, staff, and students. To that end, University policy explicitly prohibits sexual harassment, racial harassment, and all other personal conduct which inappropriately asserts that sex, race, color, ethnicity, sexual orientation, religion, veteran status, disability, age, or ancestry are relevant to consideration of individual worth or individual performance. The same policies provide procedures for the informal or formal resolution of instances where such behavior is suspected or alleged. The policies have received wide distribution and are available for inspection in all administrative offices on campus as well as online at legal.uncc.edu/policies/nondiscrim.html.

ACCREDITATION
- UNC Charlotte is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools to award baccalaureate, master's, and doctorate degrees. Contact the Commission on Colleges at 1866 Southern Lane, Decatur, Georgia 30033-4097 or call 404-679-4500 for questions about the accreditation of UNC Charlotte. The Commission is to be contacted only if there is evidence that appears to support an institution's significant non-compliance with a requirement or standard.
- The Bachelor of Architecture and Master of Architecture are accredited professional degree programs as recognized by the National Architectural Accrediting Board (NAAB).
- The Department of Chemistry is on the approval list of the American Chemical Society.
- The Master of Public Administration program is accredited by the National Association of Schools of Public Affairs and Administration (NASPAA).
- The Bachelor of Social Work and Master of Social Work programs are accredited by the Council on Social Work Education (CSWE).
- The programs in business and accounting are accredited by AACSB International -
THE UNIVERSITY OF NORTH CAROLINA AT CHARLOTTE

Unc Charlotte Undergraduate Catalog 2011-2012

THE CAMPUS

MAIN CAMPUS
The University of North Carolina at Charlotte is the largest institution of higher education in the Charlotte region and is a genuine urban university. The main campus is in University City, one of the fastest growing areas of the Charlotte region, located off WT Harris Boulevard on NC 49 near its intersection with US 29, and only eight miles from the interchange of Interstates 85 and 77. Campus facilities are comprised of contemporary buildings, including many constructed in the past ten years and more on the way. In addition to classrooms and well-equipped laboratories, the University offers arts and athletic facilities, dining facilities, and residence accommodations. The campus is designed for the pedestrian, and facilities are generally accessible to students with disabilities.

CENTER CITY
The University also has a substantial presence in Charlotte Center City, as it offers select upper-division undergraduate and graduate courses and a variety of continuing personal and professional development programs at its UNC Charlotte Uptown location. Classes are scheduled for the convenience of persons employed in or living near the central business core of the city.

Beginning in the fall of 2011, students in UNC Charlotte’s MBA program and other graduate programs will be attending classes in an iconic 12-story addition to downtown Charlotte’s skyline. A major new Center City Classroom Building in Uptown Charlotte was constructed on the corner of Brevard and Ninth streets, in the heart of Charlotte’s bustling financial district, where students and faculty members will be able to mingle with bankers, architects, technologists, and other professionals. The facility will have 143,000 total square feet for offices and academic programs in graduate, professional, and continuing education. It will increase UNC Charlotte’s presence in Center City by 10 times its current space. The undertaking is the first major urban facility in the University of North Carolina system.

THE 49ERS
The nickname, the 49ers, was chosen in recognition of the importance of the year 1949 in the history of the University. UNC Charlotte, which began as an off-campus center of the University of North Carolina at Chapel Hill, would have died in 1949 had Bonnie Cone and her supporters not convinced the N.C. Legislature that Charlotte needed a permanent
college. Charlotte College was established that year. Additionally, the campus is located on N.C. Highway 49, and Charlotte has a rich gold mining history—the term "49ers" symbolizes gold mining. A bronze statue of the 49ers Gold Miner sits in front of the Reese Administration building on campus. The statue recalls the region's history as a gold mining center and symbolizes the pioneering spirit and determination that has led to UNC Charlotte's dramatic growth.

James H. Woodward approved the composition as the University's Alma Mater in April 1992. It was sung for the first time at the following May Commencement and has been performed at every Commencement since.

The statue recalls the region's history as a gold mining center and symbolizes the pioneering spirit and determination that has led to UNC Charlotte's dramatic growth.

### UNIVERSITY LOGO

UNC Charlotte's logo has become one of the Charlotte region's most distinctive insignia. The logo is suggestive of a "crown," reminiscent of Queen Charlotte of England, for whom the city of Charlotte is named. The crown emphasizes UNC Charlotte's relationship with the Queen City, alludes to academics with shapes that resemble an open book, and exudes excellence with a torch-like shape at the top, which can also be interpreted as the top of a graduation cap.

### ALMA MATER

UNC Charlotte's Alma Mater has deep roots in the institution's history. It was part of an "Academic Festival March" composed for UNC Charlotte by James Helme Sutcliffe, a Charlotte composer and music critic who lived in Germany at the time. Dr. Loy Witherspoon, professor of religious studies, commissioned the March in 1965 when he learned that Charlotte College would become a campus of The University of North Carolina. The March was first performed in 1967 at the installation of Dean W. Colvard as UNC Charlotte's first chancellor. Afterwards, it was performed as a recessional at every Commencement during Dean W. Colvard's tenure as chancellor. When UNC Charlotte founder Bonnie Cone heard the March, she said, "I can hear an alma mater in it," referring to a hymn-like refrain. Dr. Robert Rieke, a professor of history, also heard an alma mater in it.

On a 1990 trip to Germany, Rieke visited Sutcliffe, picked up a recording of the March, and began writing words to fit the final refrain. On Christmas Eve 1991, he sent Bonnie Cone the words and music as a Christmas present to her and to the University, from which he had retired a year earlier. Chancellor
Admission to the University
admissions.uncc.edu

The University considers applications for admission without regard to race, color, national origin, religion, sex, sexual orientation, age, or disability. It reserves the right to withhold the admission of applicants who fail to meet any of the requirements for admission and to restrict enrollments as required by budgetary or other constraints.

ENROLLMENT MANAGEMENT
The Division of Enrollment Management actively identifies, counsels, recruits, and enrolls a qualified and diverse population of undergraduate students and offers services that promote student retention and success. The Offices of Undergraduate Admissions, Student Financial Aid, University Registrar, Adult Students and Evening Services, Residency Determination Office, University Call Center, and Enrollment Technologies report to the Associate Provost for Enrollment Management. These offices, in collaboration with faculty and staff in other administrative units, work to provide a seamless transition from admission to enrollment to graduation and beyond.

The Enrollment Management units interface with most campus entities, particularly the faculty, Academic Affairs, Student Affairs, Alumni Affairs, Academic Services, and Business Affairs. Additionally, these offices work regularly with external entities such as high schools, community colleges, government agencies, community groups, and relevant professional organizations. Visit the Enrollment Management website at enrollment.uncc.edu for more information.

ADMISSIONS PROCESS
Applications for admission are reviewed when all required credentials are received. Incomplete applications will not be reviewed. Official transcripts must be received for the application to be reviewed. The review focuses on the academic history of the applicant and considers all relevant factors. The intent of the University is to offer admission to applicants whose credentials indicate a strong likelihood for success in their selected curricula. It is not always possible to accommodate all the applicants who meet the minimum criteria, and some programs select the best qualified from those meeting the minimum requirements. The Admissions Advisory Committee may make exceptions to the minimum criteria for applicants who are judged to have potential or talent not revealed by test scores and academic performance. Notification of the admissions decision is mailed as soon as the decision is made. For programs that have a special admissions process, such as Architecture and Nursing, notification will be later than for other programs.

Students planning to live on campus should complete the online housing form at housing.uncc.edu after they receive confirmation of their acceptance in the mail.
Information about undergraduate programs is available from:

Office of Undergraduate Admissions
Cato Hall
University of North Carolina at Charlotte
9201 University City Boulevard
Charlotte, North Carolina 28223-0001
Telephone: (704) 687-2213
Fax: (704) 687-6483
E-mail: unccadm@uncc.edu
Web: admissions.uncc.edu

INTERNATIONAL ADMISSIONS
International students should contact the Office of International Admissions by telephone at (704) 687-3366, by fax at (704) 687-3279, or by email at intnladm@uncc.edu. International Admissions is responsible for marketing UNC Charlotte to the world. The primary focus is the admission of students on non-immigrant visas. IA processes applications, evaluates credentials, makes admissions decisions, and serves as consultant to prospective students, academic advisors, sponsors, and agencies representing international students, departments, and the Graduate School. When students are admitted, IA provides documentation to the International Student/Scholar Office for Immigration purposes. Application forms and additional information are available online at www.intladm.uncc.edu.

WHEN TO APPLY

Applicants are advised to submit their applications for admission well in advance of the schedule below. The suggested deadline dates are based on the amount of time generally required to process an application and inform the applicant of the admission decision. Early application is generally advantageous and particularly for programs with limits on the number of new students that can be accepted.

<table>
<thead>
<tr>
<th>Term</th>
<th>Suggested Application Date</th>
<th>Priority Deadline</th>
<th>Term Begins</th>
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<tbody>
<tr>
<td>Fall</td>
<td>March 15</td>
<td>July 1</td>
<td>August</td>
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<tr>
<td>Spring</td>
<td>September 1</td>
<td>November 15</td>
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<td>Summer</td>
<td>January 1</td>
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<td>July</td>
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Deadlines for international students are earlier. Contact the Office of International Admissions for further details.

The University may alter the dates for acceptance of applications without further notice in accordance with available resources and the enrollment limitation established by the North Carolina General Assembly. For the most current deadlines, please refer to the Undergraduate Admissions website at admissions.uncc.edu.

THE APPLICATION

The applicant is responsible for supplying all required credentials. Credentials must be official documents and not student copies. Nondisclosure of an applicant's complete academic history will result in rejection of the application and/or immediate dismissal from the University.

FRESHMEN APPLICANTS
For Freshman Admission, the application includes:

1) A completed online Application for Undergraduate Admission form.
2) Application fee of $50 (nonrefundable and nondeductible).
3) Official high school transcript showing rank in class, GPA computed on a 4.0 scale, and senior courses in progress. (A high school equivalency certificate or GED may be submitted in lieu of a high school diploma.)
4) Official Scholastic Assessment Test (SAT) and/or American College Testing Program (ACT) scores, with writing section, required.
5) Additional credentials, specified below, for international applications.

TRANSFER APPLICANTS
For Transfer Admission, the application includes:

1) A completed online Application for Undergraduate Admission form.
2) Application fee of $50 (nonrefundable and nondeductible).
3) Official high school transcript. (This may be waived for applicants who have already completed a B.A., B.S., or B.F.A. degree.)
4) One official transcript from every college attended, including summer sessions and any dual enrollment courses taken while enrolled in
high school.
5) Additional credentials, specified below, for international applications.

INTERNATIONAL APPLICANTS
For Admission of International Applicants, the application also includes:

1) Official scores on the Test of English as a Foreign Language (TOEFL) or the Michigan English Language Assessment Battery (MELAB), if the applicant is from a non-English speaking country. Required is either a minimum score of 180 on the new computer-based TOEFL or a minimum score of 75% on the MELAB.
2) A Statement of Financial Responsibility showing the applicant’s financial resources while in the United States.

ADMISSION REQUIREMENTS

FRESHMAN ADMISSION REQUIREMENTS
Candidates for admission to freshman standing, including transfer applicants who present fewer than 24 hours of transferred credit, must:

1) Submit a completed application for admission. A completed application is defined as the application, test scores, and the official documents from all schools attended.
2) Have graduated from an approved or accredited high school or have earned a high school equivalency certificate or G.E.D.
3) Present the following High School Course Units: 4 units in English, emphasizing grammar, composition and literature; 4 units in mathematics, including Algebra I, Algebra II, and geometry, and a higher level mathematics course for which Algebra II is a prerequisite; 2 units in social studies, including one unit in U.S. history; and 3 units in science, including at least one unit in a life or biological science (e.g., biology), at least one unit in a physical science (e.g., chemistry, physics, physical science), and at least one laboratory course; and 2 units of the same foreign language. It is recommended that the candidate for admission also complete a third unit of the same foreign language. Seniors should select a challenging academic schedule that includes English, math, science, social studies (history), and a foreign language.
4) Present a satisfactory combination of high school grades and SAT or ACT scores.
5) Present all college-level work completed in high school by submitting one official copy from any college or university attended.
6) Request official Advanced Placement (AP) and International Baccalaureate (IB) test results to be sent directly to the Office of Undergraduate Admissions (Code 5105).
7) Satisfy any additional requirements for acceptance into their chosen major (if any). For more information concerning selective major requirements, please consult the Admissions website at admissions.uncc.edu.
8) Present verification of specific immunizations required by North Carolina state law described later in this section of the Catalog. An Immunizations Form is available to download online at studenthealth.uncc.edu.

TRANSFER ADMISSION REQUIREMENTS
Candidates for admission as transfer students must:

1) Submit a completed application for admission. A completed application is defined as the application, test scores, and the official documents from all schools attended, including summer sessions and dual enrollment courses from high school.
2) Satisfy the requirements for freshman admission if they do not present at least 24 hours of transferred credit accepted by UNC Charlotte.
3) Present the High School Course Units (required of all students under the age of 24) specified in the Freshman Admission Requirements. Transfer applicants who did not complete the required course units in high school may earn an Associate in Arts, Associate in Science, or Associate in Fine Arts degree OR complete six semester hours (or 9 quarter hours) that are transferable to UNC Charlotte in each of the following subject areas: Mathematics, English, social science, and natural science. Students who graduated from high school in June 2004 and beyond must have, in addition to the requirements above, an additional 6 semester hours of foreign language for a total of 30 semester hours of credit.
4) Present an academic average of at least C (a grade point average of at least 2.0 on a 4.0 scale) on all post-secondary courses attempted, as calculated by the UNC Charlotte Office of Undergraduate Admissions.
5) Be in good standing at the last college or university attended.
6) Satisfy any additional requirements for acceptance into their chosen major (if any). For more information concerning selective major requirements, please consult the Admissions website at admissions.uncc.edu.
7) Present verification of specific immunizations required by North Carolina state law described later in this section of the Catalog. An Immunizations Form is available to download online at studenthealth.uncc.edu.

IMPORTANT NOTE: Failure to indicate all institutions of higher education attended on any application for admission or readmission to UNC Charlotte is considered falsification of the application and will result in forfeiture of the transfer of all credits from those institutions attended, as well as possible disciplinary action.

PLACEMENT/PROFICIENCY PROCEDURES
Placement and proficiency examinations are given to determine the appropriate courses for all new students to take in mathematics and foreign language and for non-native speakers of English to take in English.
FOREIGN LANGUAGE PROFICIENCY PROCEDURES
There are no foreign language requirements associated with the General Education Program. Students are required to take foreign language only if it is a requirement of their college or major department. The College of Arts + Architecture, the College of Health and Human Services, and the College of Liberal Arts and Sciences all have a foreign language requirement.

All students within these colleges are required to demonstrate proficiency in a foreign language of their choice by completing coursework through at least the 1202 level. In order to meet this proficiency requirement, a student may: (1) complete the coursework at UNC Charlotte; (2) complete three years of the same language in high school through level three; (3) achieve a satisfactory score on the foreign language placement exam; (4) transfer in the equivalent courses from another institution; or (5) place out of or earn transfer or transient credit for 1201 and complete the 1202 course, or complete 1201 and place out of or earn transfer or transient credit for 1202. Additionally, students in the College of Liberal Arts & Sciences and College of Health & Human Services may demonstrate proficiency by transferring in with an AA, AS, or AFA degree.

Although all students in the College of Arts + Architecture, College of Health & Human Services, and College of Liberal Arts & Sciences are subject to the 1202 proficiency requirement, students in select departments will additionally have to satisfy a proficiency requirement through the intermediate (2000) level. Students should consult with their major department to determine whether or not they are required to complete the intermediate proficiency requirement.

Continuing students, who enrolled prior to Fall 2003 and successfully completed three units of the same foreign language in high school, are exempt from taking the language proficiency test and are considered proficient in that language for General Education; however, certain majors require additional foreign language coursework. Students who do not present three units of the same foreign language in high school must comply with the policy below.

Freshmen and transfer of all majors who entered UNC Charlotte before Fall 2003, are required to pass or place out of the 1102 or 1202 course level of a foreign language. Students who continue study of a language taken in high school must take a UNC Charlotte Foreign Language Placement Exam. These placement exams are offered in French, German, and Spanish during new student orientations and on a regular basis through the school year. Contact the Department of Languages and Culture Studies for additional information.

MATHEMATICS PLACEMENT PROCEDURES
Freshmen and transfers who have not completed all Mathematics courses required for their program of study must take a placement examination to determine the appropriate entry-level Mathematics course for them. All students entering the College of Engineering must take this placement examination. Contact the Department of Mathematics and Statistics for additional information.

ENGLISH PLACEMENT PROCEDURES FOR NON-NATIVE SPEAKERS OF ENGLISH
All undergraduate degree students who are non-native speakers of English are required to take the UNC Charlotte English 1100 Placement Test to determine whether or not they must enroll in ENGL 1100 along with ENGL 1101. The test must be taken at the beginning of their first semester at UNC Charlotte. Students who pass the English 1100 Placement Test do not have to register for ENGL 1100, but they must register for a specially designated section of ENGL 1101 for non-native speakers of English. Students who do not pass the Placement Test must register for both ENGL 1100 (which is taught as a support course for ENGL 1101) and a specially designated section of ENGL 1101 during the same semester. Contact the Department of English or the Office of International Programs for additional information.

ADDITIONAL REQUIREMENTS FOR ACCEPTANCE INTO SPECIFIED PROGRAMS

ACCOUNTING
Freshman admission is competitive. Transfers may be admitted to a pre-accounting major if they present at least a 2.5 GPA in college transferable coursework as calculated by the UNC Charlotte Office of Undergraduate Admissions. Students will work with the Belk College of Business to apply for an upper-division Accounting major.

ARCHITECTURE
The School of Architecture admits applicants for the Fall semester only. Applications for the Fall semester are accepted through January 31 of each year. The application process for the School of Architecture is a two-step process. If admissible to the University, students are initially admitted as Pre-Architecture majors and sent an Architecture Application Packet with their acceptance letter. Students complete the second application process and return it directly to the School of Architecture. From those applicants, the School of Architecture selects some students to admit directly to Architecture from those interviewed. Students who are not approved as Architecture majors after their interview, are asked to choose another major before enrollment.

ART
Students seeking admission to the BA or BFA degree program with or without K-12 Art Teacher Licensure must submit a completed application for admission by January 26 for Fall admission. The application process for the Department of Art and Art History is a two-step process. If admissible to the University,
students are initially admitted as Pre-Art and sent directions for completing a portfolio with their admissions letter. Admitted students must submit the portfolio for review by the Department of Art and Art History by February 16. The Department will select students to admit directly to Art after the portfolio review. Students who are not approved as Art majors after the portfolio review are asked to choose another major before enrollment.

**BUSINESS ADMINISTRATION**

(BSBA degree programs)

*Freshman* admission is competitive and if admissible, freshmen are admitted as Pre-Business majors. *Transfers* may be admitted to a pre-business major if they present at least a 2.5 GPA in college transferable coursework as calculated by the UNC Charlotte Office of Undergraduate Admissions. Transfer students may not have more than two failed attempts in a prerequisite course. Students will work with the Belk College of Business to apply for an upper-division Business Administration major.

**COMPUTER SCIENCE**

*Freshman* admission is competitive. *Transfers* must present an overall GPA of at least 2.5 with no grade less than C in computer science courses.

**ECONOMICS**

*Freshman* admission is competitive and if admissible, freshmen are admitted as Pre-Economic majors. *Transfers* from other institutions must present a GPA of at least 2.5, as calculated by the UNC Charlotte Office of Undergraduate Admissions, to be admitted into a pre-economics major. Students will work with the Belk College of Business to apply for an upper-division Economics major.

**EDUCATION**

*Freshmen* interested in teacher education may be classified as Pre-Education students and should declare their interest to receive appropriate advising services. Admission to a Teacher Education program typically occurs at the end of the sophomore year and requires: (1) a GPA of at least 2.5 in courses taken and/or accepted on transfer by UNC Charlotte; (2) 45 semester hours of completed work (3) a grade of C or better in both EDUC 2100 and SPED 2100 or MDSK 2100 for secondary majors; and (4) test scores at or above North Carolina Department of Public Instruction (NCDPI) cut-score levels on Praxis I: Pre-Professional Skills Tests in Reading, Mathematics, and Writing. *Transfers* must meet the same requirements.

**ENGINEERING**

*Freshman* admission is competitive. Based upon an overall evaluation of high school record with particular emphasis on advanced courses in math and science and test scores, freshmen may be admitted directly to an engineering major or to engineering undecided. Transfers must present a GPA of at least 2.5 and have completed a pre-calculus course equivalent to MATH 1103. All transfers will be admitted to the lower division of a department, and evaluation of transfer credits to a program by the department chair will follow the guidelines of the North Carolina Engineering Transfer Board. Transfers from an ABET accredited engineering program who do not have a 2.5 GPA may be admitted upon the recommendation of the chair of the major department.

**ENGINEERING TECHNOLOGY**

*Freshmen* have to meet regular freshman admission requirements. *Transfers* who are not interested in the distance education program must meet regular transfer admission requirements. Transfers are only accepted into the distance education program with the following requirements: (1) an Associate in Applied Science degree, or its equivalent, in a field appropriate to the option they plan to enter; (2) an overall GPA of at least 2.2 on all courses taken toward the two-year degree (Exceptions to this requirement will be considered on the basis of individual merit.); and (3) satisfactory completion of the prerequisite background courses for the option they plan to enter. Acceptance of the A.A.S. degree indicates the acceptance of up to 64 hours toward the Bachelor of Science in Engineering Technology degree only. These hours are not valid toward any other degree program at the University.

**MUSIC**

Admission is competitive for both freshman and transfer applicants based on an audition interview. All applicants must first apply to the Office of Undergraduate Admissions. If students are admissible based on applicable freshman admission or transfer admission standards, they will be admitted as Pre-Music majors. Their admission letter will detail for the accepted student audition dates and information for the audition. If the student is approved for acceptance after the audition, their major will be changed to Music or Music Performance. If the student is not accepted into music after the audition, they will be asked to choose another major at the University.

**NURSING**

*Freshman* admission is competitive and, if admissible, freshmen are admitted as Pre-Nursing majors. Applicants are admitted to the Nursing major only at the upper-division or junior year. Admission as Pre-Nursing does not automatically qualify an applicant for acceptance into the upper-division Nursing major. Transfers who have an overall GPA of at least 3.0 but have not completed all prerequisites may be admitted as Pre-Nursing; however, this does not automatically qualify the applicant for acceptance into the upper-division Nursing major. Admission to the upper-division Nursing major is competitive and not all applicants can be accommodated. Only the best qualified applicants are accepted for the limited spaces available. Applications for the upper-division BSN major, including all supporting documents and transcripts, must be received by January 31 in order to be considered for admission into the Fall semester and by August 31 to be considered for admission the Spring semester.
Transfer students who hold a current license as a registered nurse (RN) in North Carolina are eligible to apply for the RN/BSN completion program. Students who have an overall GPA of at least 2.0 but have not completed all General Education courses, prerequisites, and foreign language requirements may be admitted as Pre-RN/BSN. Admission into the upper-division RN/BSN program is competitive. Applications for the upper-division RN/BSN program, along with all required transcripts, must be received by March 15 to be considered for the Fall semester and by September 15 to be considered for the Spring semester.

ADMISSION FOR UNDERGRADUATE CERTIFICATE PROGRAMS

The University offers the following undergraduate certificates:

- Certificate in Business Entrepreneurship
- Certificate in Business Languages
- Certificate in International Public Relations
- Certificate in Translating
- Certificate in Computer Programming
- Certificate in Computer Architecture
- Certificate in Game Design and Development (GDD)
- Professional Training Certificate in Dance

Students who wish to apply for these certificate programs should consult the Office of Undergraduate Admissions web site at admissions.uncc.edu. If a student has already received a bachelor’s degree, they must meet second baccalaureate degree admissions requirements. Students who have not received a bachelor’s degree and have attended a college or university must meet transfer admissions requirements. Students with a high school diploma who have not attended a college or university must meet freshman requirements.

Please note: computer science undergraduate certificate programs have additional admissions requirements. In order for a student to be admitted to a computer science undergraduate certificate program, students must have earned a bachelor’s degree in an academic field other than computer science. These students must also present at least one semester of a college level calculus course with a grade of D or above.

IMMUNIZATION REQUIREMENTS

North Carolina state law requires proof of immunizations to protect you and others while you are in attendance. Under North Carolina regulations, a student must be dropped from courses if the immunization requirements are not met. Upon learning of your admission to the University you should submit your immunization records immediately. Although a health physical is not required for admission to the University you are strongly encouraged to contact your healthcare provider or local health department to discuss additional recommendations for vaccinations. Further details regarding the immunization requirements including exemptions are available online at studenthealth.uncc.edu. Please consult the website before submitting records to the University.

<table>
<thead>
<tr>
<th>Vaccines Required</th>
<th>Diphtheria</th>
<th>Tetanus, and/or Pertussis</th>
<th>Polio</th>
<th>Measles</th>
<th>Mumps</th>
<th>Rubella</th>
<th>Hepatitis B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doses Required</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

FOOTNOTE 1 – DTP (Diphtheria, Tetanus, Pertussis), DTaP (Diphtheria, Tetanus, acellular Pertussis), Td (Tetanus, Diphtheria), Tdap (Tetanus, Diphtheria, Pertussis): 3 doses of tetanus/diphtheria toxoid of which one must have been within the past 10 years.

Those individuals enrolling in college or university for the first time on or after July 1, 2008 must have had three doses of tetanus/diphtheria toxoid and a booster dose of tetanus/diphtheria/pertussis vaccine if a tetanus/diphtheria toxoid or tetanus/diphtheria/pertussis vaccine has not been administered with the past 10 years.

FOOTNOTE 2 – An individual attending school who has attained his or her 18th birthday is not required to receive polio vaccine.

FOOTNOTE 3 – Measles vaccines are not required if any of the following occur: Diagnoses of disease prior to January 1, 1994; An individual who has been documented by serological testing to have a protective antibody titer against measles; or An individual born prior to 1957. An individual who enrolled in college or university for the first time before July 1, 1994 is not required to have a second dose of measles vaccine.

FOOTNOTE 4 – Mumps vaccine is not required if any of the following occur: An individual who has been documented by serological testing to have a protective antibody titer against mumps; An individual born prior to 1967; or Enrolled in college or university for the first time before July 1, 1994. An individual entering college or university prior to July 1, 2008 is not required to receive a second dose of mumps vaccine.

FOOTNOTE 5 – Rubella vaccine is not required if any of the following occur: 50 years of age or older; Enrolled in college or university before February 1, 1989 and after their 30th birthday; An individual who has been documented by serological testing to have a protective antibody titer against rubella.

FOOTNOTE 6 – Hepatitis B vaccine is not required if any of the following occur: Born before July 1, 1994.

INTERNATIONAL STUDENTS

Vaccines are required as noted above. Additionally, International students are required to have a TB skin test and negative result within the 12 months preceding the first day of classes (chest x-ray
required if test is positive)

**FRESHMAN AND TRANSFER STUDENTS**

Immunization records are not sent with other admission records from your previous school. You must request your immunization records be sent directly to the Student Health Center.

**CONTACT INFORMATION**

Questions regarding this mandatory requirement may be directed to the Student Health Center Immunizations Department at 704-687-7424.

Please mail your records to:

UNC Charlotte Student Health Center  
Attn: Immunization Department  
9201 University City Blvd  
Charlotte, NC 28223

**ADULT STUDENTS ADMISSION PROGRAM (ASAP)**

Adult students, 24 years of age or older who have been out of school for five or more years and present appropriate educational credentials, are encouraged to make application through the Office of Undergraduate Admissions. This unique program offers adults the opportunity for special admissions status, an academic advisor through the Office of Adult Students and Evening Services (OASES), and adult transitional support services throughout the first two years of their enrollment. Students who declare a major are advised through their major department.

**ADMISSION FOR SECOND BACCALAUREATE DEGREE**

Students who have earned a bachelor’s degree from UNC Charlotte and wish to earn a second bachelor’s degree apply for admission through the Office of the Registrar. Students who have earned a bachelor’s degree from an accredited institution, other than UNC Charlotte should apply through the Office of Undergraduate Admissions. The University automatically waives the General Education requirements for each second degree student. Students may apply for admission to a program leading to a second degree of the same level if the following requirements are met:

1) A completed application must be sent to the Office of Undergraduate Admissions in accordance with the published application dates.
2) The major field selected must be different from that of the first degree.
3) The degree sought must be different from the first when that degree was granted by UNC Charlotte.

4) The applicant must meet the requirements for acceptance into the selected field.

**READMISSION OF FORMER STUDENTS**

For details on readmission of former students, please see the “Academic Regulations” section of this Catalog.

**OTHERS ELIGIBLE FOR ADMISSION**

**ESCROW PROGRAM PARTICIPANTS**

The Escrow Program provides an opportunity for highly qualified students over the age of 15 to take college credit courses while enrolled in secondary school. Records of credit earned will be maintained for use at the University or at another institution of higher learning. The program is designed for those students who have exhausted their course offerings at their high school and need to supplement their high school curriculum with college courses. The program is not designed for students who wish to take courses to fulfill high school requirements.

Applicants recommended for participation in the program usually have shown very advanced ability in particular academic areas. The recommendations are normally made by the secondary school principal.

Requests for additional information and application forms should be directed to the Office of Undergraduate Admissions at UNC Charlotte.

**NON-DEGREE STUDENTS**

Non-degree students are those who are not seeking a degree at UNC Charlotte. On very rare occasions, if space is available, they may enroll in undergraduate courses at the University until they have attempted a total of 18 semester hours with grade evaluation. Students who did not gain admission to a degree-seeking program will not be admitted as a non-degree student. Admission as a non-degree student is up to the discretion of the Office of Undergraduate Admissions. Regular degree students will have preference for places in classes. Non-degree students are expected to conform to the standards required of all students. After reaching the 18-hour limit, non-degree students must be reviewed and be acceptable for regular degree status before continuing at the University.

Non-degree students who have done previous college work (including UNC Charlotte) must be eligible to return to the institution last attended.

The student must be 18 years of age or over and must understand at the time of his/her registration that the work completed in non-degree student status will be evaluated in terms of major department and degree requirements only after the student’s formal admission to a degree program.

**VISITING STUDENTS**

Students enrolled at other colleges and universities
who wish to take specified courses at the University in a given semester or term may be admitted as visiting students. They register on a space available basis after UNC Charlotte degree-seeking students and must submit a new application for each term they would like to attend as a visiting student. Visiting students are admitted for the Summer terms only. Visitors are not permitted to enroll for Fall or Spring semesters.

**NEW STUDENT ORIENTATION/REGISTRATION**

New undergraduate students are encouraged to participate in one of the Student Orientation, Advising, and Registration (SOAR) sessions scheduled in June, July, early August, and at the beginning of each semester. Separate programs are offered for freshmen, their parents, and for transfers. Activities include academic advising, placement tests in mathematics, and foreign language proficiency tests; introduction to academic support services, student organizations, and campus life; and registration for classes. Contact the Office of New Student and Family Services at (704) 687-2375 or visit them at soar.uncc.edu for additional information.

**INTERNATIONAL STUDENT ORIENTATION**

An orientation, held at the beginning of every semester, is required for non-resident (F-1 & J-1 visas) students. Orientation topics include immigration, academics, cultural adjustment, and program opportunities. Contact the International Student/Scholar Office or visit their website online at isso.uncc.edu for more information.
As students willingly accept the benefits of membership in the UNC Charlotte academic community, they acquire obligations to observe and uphold the principles and standards that define the terms of the UNC Charlotte community.

The University of North Carolina at Charlotte has enacted two codes governing student conduct: The Code of Student Academic Integrity and The Code of Student Responsibility. The University has also enacted a program for the prevention of the use of illegal drugs and alcohol abuse. All UNC Charlotte students are obligated to be familiar with these codes and to conduct themselves in accordance with the standards set forth.

Additionally, the Student Government Association has created a code called The Noble Niner that solidifies the high standard of morals, principles, and integrity that all students should strive to uphold to bolster the growing reputation of excellence at UNC Charlotte.

### THE CODE OF STUDENT ACADEMIC INTEGRITY

The Code of Student Academic Integrity governs the responsibility of students to maintain integrity in academic work, defines violations of the standards, describes procedures for handling alleged violations of the standards, and lists applicable penalties. The following conduct is prohibited in that Code as violating those standards:

A. **Cheating.** Intentionally using or attempting to use unauthorized materials, information, notes, study aids or other devices in any academic exercise. This definition includes unauthorized communication of information during an academic exercise.

B. **Fabrication and Falsification.** Intentional and unauthorized alteration or invention of any information or citation in an academic exercise. Falsification is a matter of altering information, while fabrication is a matter of inventing or counterfeiting information for use in any academic exercise.

C. **Multiple Submission.** The submission of substantial portions of the same academic work (including oral reports) for credit more than once without authorization.

D. **Plagiarism.** Intentionally or knowingly presenting the work of another as one’s own (i.e., without proper acknowledgment of the source). The sole exception to the requirement of acknowledging sources is when the ideas, information, etc., are common knowledge. (NOTE: For more information regarding plagiarism, see PLAGIARISM Appendix at http://legal.uncc.edu/policies/ps-105.html#APP.)

E. **Abuse of Academic Materials.** Intentionally or knowingly destroying, stealing, or making inaccessible library or other academic resource material.

F. **Complicity in Academic Dishonesty.** Intentionally or knowingly helping or attempting to help another to commit an act of academic dishonesty.

A full explanation of these definitions, and a description of procedures used in cases where student violations are alleged, is found in the complete text of The Code of Student Academic Integrity. This Code may be modified from time to time. Students are advised to contact the Office of the Dean of Students or go to the UNC CHARLOTTE UNDERGRADUATE CATALOG 2011-2012.
THE CODE OF STUDENT RESPONSIBILITY

Conduct Rules and Regulations
The following conduct, or an attempt to engage in the following conduct, is subject to disciplinary action:

[A. Inflicting physical injury upon a person]
B. Placing a person in fear of or at risk of imminent physical injury or danger, or engaging in retaliatory threats against a person;
C. Committing sexual invasion, sexual assault, or sexual misconduct, as those terms are defined herein;
D. Committing sexual harassment as defined herein;
E. Inflicting severe mental or emotional distress upon a person through a course of conduct involving repeated harassment, intimidation, abuse, or disparagement;
F. Engaging in "fighting words" harassment, as that term is defined in Policy Statement #95 (online at http://legal.uncc.edu/policies/ps-95.html). The full text of Policy Statement #95 is available online or in the Office of the Dean of Students.

G. Using, possessing, or storing any weapon, dangerous chemical, or explosive without authorization.

H. Initiating or causing to be initiated any false report, warning or threat of fire, explosion, or other emergency.

I. Interfering with normal University activities including, but not limited to, teaching, studying, research, the expression of ideas, University administration, speeches and other public or private events, and fire, police or other emergency services. Acts prohibited by this rule include, but are not limited to, those acts prohibited in University Policy Statement #58, "Interference with University Operations," found online at http://legal.uncc.edu/policies/ps-58.html, which prohibits student action taken "with intent to obstruct or disrupt any normal operation or function of the University," and Policy Statement #96, "Conduct at Speech Events," found online at http://legal.uncc.edu/policies/ps-96.html, which prohibits certain disruptive activities at speech events on campus. Full texts of both policies are available online or in the Office of the Dean of Students.

J. Knowingly violating the terms of any student conduct sanction imposed in accordance with this Code.

K. Possessing, consuming, or using any controlled substance; possessing or using drug paraphernalia; manufacturing, selling or delivering any controlled substance; possessing with intent to manufacture, sell, or deliver, any controlled substance; huffing or sniffing any substance not intended for such use. Minimum penalties and certain other requirements apply where controlled substance offenses are at issue, pursuant to University Policy Statement #87, "Program to Prevent Use of Illegal Drugs and Alcohol Abuse." That Policy is available online at http://legal.uncc.edu/policies/ps-87.html or in the Office of the Dean of Students.

L. Setting fires, or misusing or damaging fire safety equipment or elevators.

M. Furnishing false information to the University; failing to report to the Office of the Dean of Students any criminal felony convictions that are entered against one (a) during the time between application for admission to the University and enrollment at the University, (b) during enrollment at the University, or (c) during any periods between enrollments at the University (such as the summer or during a withdrawal period) prior to returning to the University; misrepresenting or concealing one's organizational affiliation(s) or sponsorship(s) for the purpose of enticing another person into joining or participating in a group or organization; misrepresenting to a third party one's affiliation or enrollment status with the University.

N. Forgery, unauthorized alteration, or unauthorized use or misuse of any document or instrument of identification (ID); displaying or using an ID that is not one's own or is fictitious, canceled, revoked, suspended, or altered; counterfeiting, loaning, or selling an ID to another person not entitled thereto.

O. Theft or attempted theft of University or individual property or services; breaking and entering into University property or the property of individuals on campus (including, but not limited to, private automobiles); the unauthorized use or access to private or confidential information in any medium; possessing stolen property; or possessing property that is not your own without owner authorization.

P. Destroying, defacing, tampering with, or damaging the property of others or University property, including, but not limited to, chalking, spray painting, or otherwise marking without appropriate University approval.

Q. Failing to comply with the reasonable directions of University officials, including but not limited to campus police officers or Housing and
Residence Life Staff, acting in performance of their duties.

N. Violating, aiding in violation of, or concealing evidence in violation of published University policies or regulations. Such policies or regulations include but are not limited to all Housing and Residence Life policies and the residence hall contract, as well as regulations relating to entry and use of University facilities, use of vehicles and amplifying equipment, campus demonstrations, and misuse of identification cards.

O. Possessing, consuming, or distributing alcoholic beverages without University authorization, including but not limited to:
   1. operating a motor vehicle under the influence of alcohol or while impaired by the consumption of alcohol;
   2. possessing or consuming alcoholic beverages by students less than twenty-one years of age;
   3. displaying or consumption of alcoholic beverages in campus residences by students less than twenty-one years of age;
   4. furnishing, or selling any alcoholic beverages to any person less than twenty-one years of age;
   5. public intoxication;
   6. failing to abide by the provisions of an "Acknowledgment of Responsibility for Service of Alcoholic Beverages" form; or
   7. making any sale of any alcoholic beverage on the University campus. (The full text of University Policy Statement #57, "Alcoholic Beverages," is available online at http://legal.uncc.edu/policies/ps-57.html or in the Office of the Dean of Students.)

Q. Being present in or using, or aiding and abetting another in being present in or using, University premises, facilities, or property without University authorization.

R. Using or possessing fireworks on University premises or at University activities without University authorization.

S. 1. Engaging in conduct, such as loud, aggressive, or combative behavior, that disrupts or interferes with the normal functions of a class, including failure to conform to the instructor’s announced expectations for classroom decorum. Disruptive conduct also includes use of cell phones or other electronic devices for voice or text communication in class, unless permitted by the instructor. (A student who persists in disruptive conduct as described above is subject to interim suspension set forth in Section XIII found online at http://legal.uncc.edu/policies/ps-104.html#interim)

   2. Engaging in disorderly conduct, such as fighting, threatening behavior, public disturbance, or drunk and disorderly conduct. Disorderly conduct also includes any unauthorized use of electronic or other devices to make an audio or video record of any person while on University premises without his/her prior knowledge, or without his/her effective consent when such a recording is likely to cause injury or distress. This includes, but is not limited to, surreptitiously taking pictures of another person in a gym, locker room, or restroom.

T. Violation of Policy Statement #83, "Hazing," found online at http://legal.uncc.edu/policies/ps-83.html or in the Office of the Dean of Students.

V. Engaging in computer abuse, including but not limited to violation of:
   7. Peer-to-Peer File Sharing Regulation, found online at http://legal.uncc.edu/policies/p2p.html
   8. Regulation on Security of Electronic Individually Identifiable Health Care Information under HIPAA, found online at http://legal.uncc.edu/policies/hipaa.html
   10. Regulations on the Use of Social Security Numbers, found online at http://legal.uncc.edu/policies/ssn.html

W. Gambling for money or other things of value except as allowed by law. Prohibited gambling includes, but is not limited to, betting on, wagering on, or selling pools on any athletic event; possessing any card, book, or other device (including that which uses the Internet) for registering bets, or bookmaking in connection with betting.

X. Presence during any conduct prohibited by the Code of Student Responsibility that condones, supports, or encourages such prohibited conduct.
Students who are present during a violation of the Code of Student Responsibility are expected to remove themselves from the situation and are encouraged to report the violation to the Office of the Dean of Students.

Y. Commission of an act, or an attempt to commit an act, that: (i) is classified as a felony under North Carolina law; (ii) would be in violation of the General Statutes of the State of North Carolina; or (iii) would be in violation of any federal law. The University reserves the right to proceed with a hearing and the possible imposition of a sanction under the Code of Student Responsibility prior to, concurrent with, or subsequent to, civil litigation, criminal arrest, and/or criminal prosecution.

A full explanation of prohibited conduct, and a description of procedures used in cases where student violations are alleged, is found in the complete text of The Code of Student Responsibility. This Code may be modified from time to time. Students are advised to contact the Office of the Dean of Students or go to http://legal.uncc.edu/policies/ps-104.html to ensure they consult the most recent edition.

**PROGRAM TO PREVENT USE OF ILLEGAL DRUGS AND ALCOHOL ABUSE (POLICY #87)**

**General**

In keeping with efforts to maintain an environment that supports and encourages the pursuit and dissemination of knowledge, it is the policy of The University of North Carolina at Charlotte to consider the use of illegal drugs or alcohol abuse by students, faculty and staff or by others on premises under University control to be unacceptable conduct that adversely affects the educational environment.

To remind students, faculty, and staff of their responsibilities for maintaining a drug-free environment, this Policy will be distributed throughout the University community each year. Further, the University considers a sound awareness, education, and training program indispensable in combating illegal use of drugs and alcohol abuse, both as a preventive measure and as a remedy. The scope of the University program addresses the awareness needs of students, faculty, administrators, and other staff members and includes the following minimum components.

- The health hazards associated with the use of illegal drugs and alcohol alone.
- The incompatibility of the use of illegal drugs or abuse of alcohol with maximum achievement of personal, social, and educational goals.
- The potential legal consequences (including both criminal law and University discipline) of illegal drug abuse and alcohol abuse.
- The effective use of available campus and community resources in dealing with illegal drug abuse and alcohol abuse problems.

**Definitions**

For the purposes of this Policy, the following definitions apply:

The term “alcohol abuse” is defined as a pattern of alcohol use leading to impairment or distress, including:

1. alcohol use that contributes to (a) a failure to meet satisfactory job expectations or (b) interference with the ability to perform job responsibilities, (including repeated absences or poor work performance related to alcohol use);
2. alcohol use in situations in which it is physically hazardous to the user or others;
3. alcohol-related legal problems; or
4. social or interpersonal problems caused or exacerbated by the effects of alcohol use

The term “illegal drug use” is defined as use of those drugs or substances that is prohibited by state or federal law.

**Responsibilities**

It is the responsibility of all students, faculty, and staff to conduct themselves in a way that contributes to an environment free of illegal drug use and abuse of alcohol. In addition, students, faculty, and staff are responsible, as citizens, for knowing about and complying with the provisions of North Carolina law that make it a crime to possess, sell, deliver, or manufacture those drugs designated collectively as "controlled substances" in Article 5 of Chapter 90 of the North Carolina General Statutes, as well as federal law (Drug Free Workplace Act), which prohibits unlawful manufacture, distribution, dispensation, possession, or use of a controlled substance in the workplace of any employer receiving federal grant funds.

The Director of Wellness Promotion is responsible for designing and carrying out a program of awareness education and training for students on the subject of preventing the illegal use of drugs and abuse of alcohol. The Director of Employee Relations, Training, and Compliance in the Human Resources department is responsible for awareness education and training programs for faculty and staff members in supervisory positions on the subject of preventing substance abuse.

The Director of the Counseling Center shall, within the limits of available resources, provide services and programs to students seeking assistance with problems of illegal drug use or alcohol abuse. In cases in which the treatment needs of such students exceed the resources of the Center, the Center shall provide referral to appropriate facilities in the community. The Director of Employee Relations in the Department of Human Resources shall provide faculty and staff information regarding the University's Employee Assistance Program (EAP),
which will offer consultation about alcohol and drug problems and referral to alcohol and drug treatment facilities in the community. The Counseling Center shall also be available to provide community referral information for treatment of faculty and staff on request.

Collaboration with Community Resources
The University’s program emphasizes collaboration with local resources such as the Substance Abuse Prevention Services of the Carolinas, Chemical Dependency Center of Charlotte-Mecklenburg, Mecklenburg County Substance Abuse Services, McLeod Center, Alcoholics Anonymous, Narcotics Anonymous, Al-Anon, Nar-Anon, etc. To this end, the University shall participate in the Charlotte-Mecklenburg Drug-Free Coalition and will work with local advisory boards to further collaborate between the University and the Charlotte Community.

Education and Prevention Activities
The University’s awareness, education, and training efforts stress prevention. The goal of these efforts is (1) to encourage non-users of illegal drugs and alcohol to continue to be non-users, (2) to encourage users of alcohol to do so safely and responsibly, and (3) to encourage users of illegal drugs to stop such use.

Illegal Use of Drugs and Abuse of Alcohol
The use of illegal drugs and the abuse of alcohol are considered by the University to be problems that can be overcome. Therefore, the educational and rehabilitative services cited above are available on a confidential basis. However, the possession, sale, delivery, or manufacture of illegal drugs will not be tolerated on campus or off campus in the event that the interests of the University may be affected.

The University will cooperate fully with law enforcement agencies and will apply appropriate disciplinary procedures should a student, faculty member, or staff member violate criminal statutes with regard to illegal drugs. Violations may subject a student, faculty member, or staff member to prosecution and punishment by civil authorities and to disciplinary action by the University. It does not constitute "double jeopardy" for the University to initiate its own disciplinary proceedings for the same offense when the alleged conduct is deemed to affect the interests of the University.

Under federal law, employees convicted of any criminal drug offense occurring in the workplace are required to notify the University by informing the appropriate Vice Chancellor’s office no later than five (5) days after such conviction. Disciplinary action and/or participation in a drug rehabilitation/education program as a result of University disciplinary proceedings must commence within 30 days of notice of conviction.

Upon receiving notice of a violation of this Policy, the University will initiate disciplinary procedures applicable to one's status as a member of the University community:

<table>
<thead>
<tr>
<th>Status</th>
<th>Document</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students</td>
<td>Code of Student Responsibility</td>
</tr>
<tr>
<td>SPA Staff</td>
<td>State Personnel Manual</td>
</tr>
<tr>
<td>EPA Staff</td>
<td>Policy Statement #64, Personnel Policies for Designated Employment Exempt from the State Personnel Act</td>
</tr>
<tr>
<td>Faculty</td>
<td>Section 603 of the UNC Code and Section 8 of the Tenure Policies, Regulations, and Procedures of UNC Charlotte</td>
</tr>
</tbody>
</table>

(Minimum sanctions set forth below shall also apply to employees who do not fall in any of the categories above.)

In the event a student is also an employee of the University, the minimum sanctions for employment status as well as student status shall apply.

The use of illegal drugs may result in a variety of sanctions, from written warnings with probationary status to expulsion from enrollment or discharge from employment. However, in accordance with the Policy on Illegal Drugs adopted by the Board of Governors of The University of North Carolina, the following minimum penalties shall be imposed for the particular offenses described:

**Manufacture, Sale, or Delivery of Illegal Drugs**
1. For the illegal manufacture, sale, or delivery of, or possession with intent to manufacture, sell, or deliver, any controlled substance, identified in Schedule I, N.C. General Statutes 90-89, or Schedule II, N.C. General Statutes 90-90, a student shall be expelled and a faculty member or staff member shall be discharged.

2. For a first offense involving the illegal manufacture, sale, or delivery, or possession with intent to manufacture, sell, or deliver, any controlled substance identified in Schedules III through VI; N.C. General Statutes 90-91, 90-92, 90-93, and 90-94, the minimum penalty shall be suspension from enrollment or from employment for a period of at least one semester or its equivalent. For a second offense, a student shall be expelled and a faculty member or staff member shall be discharged.

**Illegal Possession of Drugs**
1. For a first offense involving the illegal possession of any controlled substance identified in Schedule I, N.C. General Statutes 90-89, or Schedule II, N.C. General Statutes 90-90, the minimum penalty shall be suspension from enrollment or disciplinary suspension without pay from employment for a period of at least one semester or its equivalent.

2. For a first offense involving the illegal possession of any controlled substance identified in Schedule III through VI, N.C. General Statutes 90-91, 90-92, 90-93, and 90-94, the minimum penalty shall be probation, for a period to be
determined on a case-by-case basis. A person on probation must agree to participate in a drug education and counseling program, consent to regular drug testing, and accept such other conditions and restrictions, including a program of community service, as the Chancellor or the Chancellor’s designee deems appropriate. A requirement to undertake community service under this Policy may not be fulfilled by using paid Community Service Leave (http://hr.uncc.edu/Policies/PIM46.htm).

Refusal or failure to abide by the terms of probation shall result in suspension from enrollment or disciplinary suspension without pay from employment for any unexpired balance of the prescribed period of probation.

3. For second or other subsequent offenses involving the illegal possession of controlled substances, progressively more severe penalties shall be imposed, including expulsion of students and discharge of faculty members or staff members.

**Suspension for a Minimum Period of “One Semester or its Equivalent”**

Suspension for a minimum period of “one semester or its equivalent” means forfeiture of at least one full semester of academic credit or attendance. Such a sanction may be accomplished either (1) by suspending the student for the unexpired balance or the semester during which responsibility is determined, with attendant loss of all academic credit for that semester, or (2) by placing the student on probation for the unexpired balance of the semester during which responsibility is determined and suspending the student for the duration of the next succeeding semester.

In the case of a faculty member or staff member, suspension for a minimum period of “one semester or its equivalent” means forfeiture of pay for a period of 18 weeks. Since the current State Personnel Act specifies that disciplinary suspensions cannot exceed two work weeks, offenses for which an eighteen-week minimum suspension is required by the Board of Governors’ policy will result in discharge of an employee subject to the State Personnel Act.

**Suspension Pending Final Disposition**

When a student, faculty member, or staff member has been charged by the University with a violation of policies concerning illegal drugs, he or she may be suspended from enrollment or employment before initiation or completion of regular disciplinary proceedings if, assuming the truth of the charges, the Chancellor or, in the Chancellor’s absence, the Chancellor's designee concludes that the person’s continued presence within the University community would constitute a clear and immediate danger to the health or welfare of other members of the University community; provided, that if such a suspension is imposed, an appropriate hearing of the charges against the suspended person shall be held as promptly as possible thereafter.

**SMOKING ON UNIVERSITY PROPERTY (POLICY #68)**

### I. Introduction

The University of North Carolina at Charlotte has a vital interest in maintaining a healthy and safe environment for its students, faculty, staff and visitors while respecting individual choice about smoking. Consistent with these concerns and with North Carolina law, the following Policy establishes restrictions on smoking on University Property and provides procedures for accommodating the preferences of both smokers and nonsmokers.

### II. Definitions

For the purposes of this Policy:

A. "Smoking" is defined as the use or possession of a lighted cigarette, lighted cigar, lighted pipe, or any other lighted tobacco product.

B. A "Building" is defined as any permanent or temporary structure utilized for the support, shelter or enclosure of people, animals, or property. "Buildings" include, but are not limited to: residence halls, classroom and office buildings, workshops, gymnasiums, shuttle stops, athletic fields, parking decks, stairwells, inside and outside dining areas, vending areas, breezeways, and connectors.

C. A "University Building" is defined as any Building owned, leased, or the area leased as lessee and occupied by UNC Charlotte.

D. "University Property" means University Buildings and grounds owned, leased, operated, controlled, or supervised by UNC Charlotte.

E. A "University Vehicle" is defined as a vehicle owned or leased by UNC Charlotte.

F. A "Designated Smoking Area" is defined as an exterior area on the UNC Charlotte campus designated by the Chancellor or the Chancellor’s designee as a place for smoking. Designated Smoking Areas will be marked by proper signage, and are subject to the provisions in Section III of this Policy.

### III. Policy

The following restrictions apply to smoking on University Property:

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**References**


**Policy on Alcoholic Beverages**

A. Smoking is prohibited within all University Buildings.
B. Smoking is prohibited within 100 linear feet of any University Building unless otherwise allowed under subsection III. D.
C. Smoking in University Vehicles is prohibited.
D. Smoking is permitted on University Property in Designated Smoking Areas.
E. Additional smoking restrictions required for safety reasons may be imposed by the University on a case-by-case basis. Areas with such restrictions will be identified by signage.

IV. Compliance
Cooperation and consideration between smokers and nonsmokers is necessary to ensure the successful implementation of this Policy. Effective implementation of this Policy depends upon the courtesy, respect, and cooperation of all members of the University community.

Violation of this Policy may subject a member of the campus community to disciplinary action appropriate to his or her status as faculty, staff, or student. (See Policy Statement #25 located online at http://legal.uncc.edu/policies/ps-25.html.)

THE NOBLE NINER CODE

The Noble Niner Code was authored by the Student Government Association and describes the ideals which every Charlotte 49er student can ideally reach as he or she becomes a fully actualized individual.

It was approved by the UNC Charlotte Board of Trustees in April 2007 and is now adopted as an official document of the University.

Scholarship
A Niner shall strive for academic excellence in and out of the classroom while maintaining academic honesty and ethical values.

Integrity
A Niner shall act to uphold and improve one’s self, the community, and the high standards of the institution.

Respect
A Niner shall welcome all aspects of individuality and self-worth while embracing the learning opportunities that diversity provides.

Accountability
A Niner shall hold others responsible for their actions while accepting responsibility for one’s own.

Dignity
A Niner shall appreciate the intrinsic value of the institution and work to preserve the 49er environment.

Honor
A Niner shall appreciate students, faculty, administration, and staff as contributing members of the University community.

Compassion
A Niner shall demonstrate genuine consideration and concern for the needs, feelings, ideas, and well-being of others.

Character
A Niner shall exemplify all qualities and traits that promote fellowship and camaraderie among the student body, faculty, staff, and administration.

Nobility
A Niner shall exhibit the virtues and values listed above which befit all members of our Niner Nation.
Degree Requirements and Academic Regulations

Each student is responsible for the proper completion of his or her academic program, for familiarity with the Catalog, for maintaining the grade point average required, and for meeting all other degree requirements. Students assume academic and financial responsibility for the courses in which they enroll and are relieved of these responsibilities only by formally terminating enrollment.

ACADEMIC ADVISING

advising.uncc.edu

Each student at UNC Charlotte is assigned an academic advisor or advisory committee in the student’s major field of study. Students who have declared a major, or pre-major, should seek advising from their advisor in their College’s advising center or department. Students who have more than one major should seek advice from each of their assigned advisors in each academic department. Students who have not chosen or been admitted to a major or pre-major program are enrolled as students of University College (UCOL) and are assigned an advisor from the University Advising Center. The University Advising Center also provides services to students who are transitioning from one major to another. A student may learn how to find his/her assigned advisor by visiting: advising.uncc.edu.

In helping students achieve their educational and career goals, advisors will focus on enhancing the students’ transition from high school or another college/university, will offer assistance in understanding University policies and procedures, and refer students to campus services that will best ensure the students’ success both on campus and in meeting their career goals. The advisors will also facilitate the development of decision-making skills critical to success in college and life. Each student’s assigned advisor will communicate regularly with the student throughout the year about important dates, programs, and services that will help ensure success at UNC Charlotte. Students are encouraged to maintain contact with appropriate advisors throughout their enrollment period.

The advisor assists the student to develop a plan of study based on the student’s prior preparation and objectives. The academic advisor will counsel, but the final responsibility remains that of the student.

BACCALAUREATE DEGREE REQUIREMENTS

CREDIT HOURS AND MAJOR

All baccalaureate degrees require completion of a minimum of 120 semester hours of credit, including all requirements for a major field of study. Specific requirements for degrees and programs are presented under the college and departmental sections of this Catalog.

GENERAL EDUCATION

All baccalaureate degrees require completion of a common set of General Education requirements. Refer to the General Education Program section of this Catalog.
GENERAL EDUCATION PROGRAM

to the major field and at least six hours of any minor field of study. Exceptions to these hour provisions may be made upon the recommendation of the student’s major department and with the approval of the dean of the college of the student’s major. (Please note: earning 25% of the degree at UNC Charlotte cannot be waived due to Southern Accreditation of Colleges and Schools accreditation standards.)

Coursework taken in residence shall be construed to mean work offered by UNC Charlotte and taken in courses on the UNC Charlotte campus or at an approved off-campus center. Credit earned by challenge examinations or other advanced standing examinations cannot be used to meet the residency requirement.

GRADE POINT AVERAGES

to have an overall cumulative grade point average of at least 2.0 and a grade point average of at least 2.0 in the major and in any minor. Some programs require a higher grade point average. Specific requirements for degrees and programs are presented under the college and departmental sections of this Catalog.

I. DEVELOPMENT OF FUNDAMENTAL SKILLS OF INQUIRY (9-12 HOURS)

FIRST-YEAR WRITING COURSES

Students take two courses, ENGL 1101 and ENGL 1102. Entering freshmen who qualify for the accelerated course in writing and rhetoric may meet this requirement by completing one course, ENGL 1103. After completing these courses students are expected to be able to write clearly and concisely in standard English and to be generally prepared to do college-level writing and editing.

MATEMATICAL AND LOGICAL REASONING

One three-credit course in mathematics (MATH) and a second three-credit course selected from mathematics (MATH), statistics (STAT), or deductive logic (PHIL 2105) are required. Most undergraduates at UNC Charlotte major in programs that require mathematics or statistics as related work. For these students, the related mathematics requirements determine the courses taken to meet the General Education requirement.

BASIC SKILLS OF INFORMATION TECHNOLOGY

By the end of their first year at UNC Charlotte, students are expected to have developed the basic skills necessary to access and create computer based information. These skills include the use of word processing, email, file management, Internet searches, and library database searches. These skills are developed in English 1101 and 1103. Tutorial help is available at campus computer labs, and help with bibliographical search skills is available in the information commons of Atkins library. Students are expected to exhibit ethical behavior in the use of computers. More advanced information technology
II. INQUIRY IN THE SCIENCES (10 HOURS)

TWO COURSES, AT LEAST ONE OF WHICH MUST BE TAKEN WITH A LABORATORY

These courses introduce students to the methods of various science disciplines. They provide an understanding of the current scientific knowledge of the world, how that knowledge is secured, and how scientific knowledge changes over time. Selected from:

- Astronomy (PHYS 1130)
- Biological Anthropology (ANTH 2141)
- Biology (BIOL 1110, 1115, 1273, 1274)
- Chemistry (CHEM 1111, 1112, 1200, 1203, 1204, 1251, 1252)
- Earth Sciences (ESCI 1101)
- Geology (GEOL 1200, 1210)
- E-Science (ITIS 1350)
- Physics (PHYS 1101, 1102, 1201, 1202, 1203, 2101, 2102)
- Psychology (PSYC 1101)

ONE COURSE IN THE SOCIAL SCIENCES

These courses introduce students to the methods of the social sciences and to the applications of these methods for gaining a scientific understanding of the social world. Selected from:

- Anthropology (ANTH 1101)
- Economics (ECON 1101 or 2101)
- Geography (GEOG 1105)
- Political Science (POLS 1110)
- Sociology (SOCY 1101)

III. THEMES OF LIBERAL EDUCATION FOR PRIVATE AND PUBLIC LIFE (12 HOURS)

The UNC Charlotte faculty has selected four themes of a liberal arts education around which to offer a core of Liberal Studies (LBST) courses dedicated exclusively to General Education. All of these courses include the consideration of gender, race, and ethnic diversity, as appropriate for understanding the individual themes of these courses. Despite the fact that topics vary, and courses are offered from various departments, LBST courses may not be repeated for credit.

Each student must take one course from each area as follows:

ONE COURSE IN THE ARTS AND SOCIETY

Art is indispensable to the structure and fabric of all societies, and each course examines this fundamental connection from the perspective of a specific art form. Selected from:

- LBST 1101 The Arts and Society: Dance
- LBST 1102 The Arts and Society: Film
- LBST 1103 The Arts and Society: Music
- LBST 1104 The Arts and Society: Theater
- LBST 1105 The Arts and Society: Visual Arts

ONE COURSE IN THE WESTERN TRADITION

Each section of this course examines a major aspect of Western culture through the process of analyzing the present in terms of the past.

- LBST 2101 Western Cultural & Historical Awareness

ONE COURSE IN GLOBAL UNDERSTANDING

All liberally educated people need to have the ability to understand the world from the point of view of more than one culture and be able to analyze issues from a global perspective.

- LBST 2102 Global and Intercultural Connections

ONE COURSE DEALING WITH ETHICAL ISSUES AND CULTURAL CRITIQUE

Each of these courses deals with an important contemporary issue, and each one gives significant attention to ethical analysis and cultural critique in the liberal arts. Selected from:

- LBST 2211 Ethical Issues in Personal, Professional, and Public Life
- LBST 2212 Literature and Culture
- LBST 2213 Science, Technology, and Society
- LBST 2214 Issues of Health and Quality of Life
- LBST 2215 Citizenship

IV. COMMUNICATION SKILLS (6-9 HOURS)

WRITING IN THE DISCIPLINES (W)

Six semester hours, including at least three semester hours in the major. These courses are spread throughout the curriculum and are indicated with a (W) after the course title. These courses assume that students have already developed the basic grammatical and compositional skills needed to write college-level English, and they build on these skills to develop writing strategies appropriate to the discipline of the department offering the course.

ORAL COMMUNICATION (O)

At least one course designated as an oral communication course. These courses are spread throughout the curriculum and are indicated with an (O) after the course title. If a course is designated as both a writing in the discipline course (W) and an oral communication course (O), a student may apply that course to both requirements.

FOREIGN LANGUAGES

There are no foreign language requirements associated with the General Education Program. Requirements related to foreign languages are determined at the college or department levels. All majors in the College of Liberal Arts & Sciences and the College of Arts + Architecture have a foreign language requirement as do some majors in the College of Health & Human Services and the Belk College of Business. The specific foreign language requirements for each major are listed under each college’s or department’s section in the Catalog.
DECLARING MAJORS AND MINORS

DECLARATION OF A MAJOR(S)
Students must complete the requirements for an academic major in order to graduate from the University. Students must, therefore, enroll in a program leading to a baccalaureate degree, and, in some cases, they may choose an area of academic concentration within that degree. In order to be admitted to a degree program a student must meet all requirements for acceptance into that major and submit an approved “Change of Major/Minor” form to the Office of the Registrar. Students may declare multiple majors presuming they meet the requirements for acceptance into that major and submit an approved “Change of Major/Minor” form to the Office of the Registrar. Students may declare multiple majors presuming they meet the requirements for each degree. Students pursuing multiple majors are encouraged to meet with advisors in each department to ensure they are fulfilling degree requirements.

The choice of a major appropriate for a student’s interests, aptitudes, and career goals is a crucial decision during a student’s academic career. Undergraduate students may declare a major field of study or pre-professional program upon their enrollment at UNC Charlotte as freshmen or transfer students, or they may enroll in the University as undeclared students in University College. Undeclared students should work closely with their advisor in the University Advising Center to identify and prepare for their chosen field of study, and for that reason, advising is required for all undeclared (UCOL) students each semester. All students should declare and be accepted into a major or a pre-professional program by the time they have earned 60 semester hours of credit; transfer students entering with more than 60 credit hours should make that declaration upon enrollment or during their first semester of attendance. A delay in selecting a major and/or multiple changes of major often prevents graduation in a timely fashion.

DECLARATION OF A MINOR(S)
Students who are working on a bachelor's degree at UNC Charlotte have the option to enroll in a program leading to a minor (or minors) provided: (1) the minor field is different from the major field; (2) the student meets the requirements for acceptance into the minor program; and (3) the appropriate application for admission or the "Change of Major/Minor" form is approved and filed at the Office of the Registrar.

CHANGE OF DEGREE OR MAJOR PROGRAM
An undergraduate student may change the degree program, major, area of academic concentration, or minor in which he/she is enrolled and may enroll in a new program of study provided that space is available and that he/she meets the prerequisites for admission to the new program. Any change of program requires written approval via a "Change of Major/Minor" form to be filed at the Office of the Registrar. As noted above, changes in major, particularly those made after a student has earned 60 credit hours, may delay graduation.

SECOND BACCALAUREATE DEGREE OR MAJOR
Students who have earned bachelor's degrees from UNC Charlotte or other accredited institutions may apply to a program leading to a second baccalaureate degree or major provided the major field selected is different from that of the first degree or the degree sought is different from the first granted by UNC Charlotte. In addition, the appropriate application for admission must be filed and approved.

Students seeking a second baccalaureate degree or major must: (1) satisfy residency requirement (refer to Residence section of Baccalaureate Degree Requirements) if their first degree was not earned at UNC Charlotte; (2) achieve a minimum grade point average of 2.0 on all work attempted toward the second degree; and (3) satisfy all department and college requirements for the degree sought. Students who hold a baccalaureate degree from an accredited institution will not be required to satisfy the UNC Charlotte General Education Requirements for a second degree. Students will be issued a transfer credit report and will have their credit from their first degree evaluated. Students who are completing a second baccalaureate degree or major within the same degree (e.g., B.A., B.S.) are not awarded another diploma. Provided the first degree was earned at UNC Charlotte.

BACCALAUREATE MINOR
Students who have earned a bachelor's degree from UNC Charlotte may enroll in a program of study leading to a minor provided: (1) the second minor field selected is different from any prior major or minor; (2) the student meets the requirements for acceptance into the second minor program; and (3) the appropriate application for admission or a "Change of Major/Minor" form is approved and filed at the Office of the Registrar. Students who are completing a second baccalaureate minor at UNC Charlotte are not awarded another diploma.

ACADEMIC CREDIT

CREDITS/SEMESTER HOURS
The unit of measurement of University work is the semester hour, also referred to as credit hour. It ordinarily represents one lecture hour per week for one semester; however, this may vary for courses, such as laboratories. A bachelor’s degree requires a minimum of 120 hours.
COURSE LOAD
A course load of 15-18 hours constitutes a normal full semester program for undergraduates. A student must complete 15-16 hours per semester to complete a bachelor’s degree in four academic years. Enrollment in more than 18 hours in a semester requires advance approval of the dean of the student's major college. An undergraduate student enrolled in 12 or more hours is considered to be a full-time student and must pay full tuition and fees.

A standard load for an undergraduate student enrolled in a summer session is six to seven credit hours. Enrollment in more than seven credit hours in a single summer session, or in concurrent summer sessions (e.g., a 10-week and a 5-week session), requires advance approval of the dean of the student’s major college.

The appropriate course load for an undergraduate student is dependent on two factors: scholastic ability as reflected by the student's academic history and available study time. Successful academic achievement usually requires at least two hours of study per week outside of class for each credit hour in which the student is enrolled. For example, enrollment in 16 credit hours would require minimally 32 hours of outside preparation per week.

TUITION SURCHARGE
Undergraduate students who attempt more than 140 credit hours are subject to a 50 percent tuition surcharge on the excess hours taken. However, the surcharge will not apply to students who exceed these credit hour limits while completing their degree within the equivalent of four academic years, or in the case of five-year programs, within the equivalent of five academic years.

For students entering a first baccalaureate degree in a program that requires no more than 128 credit hours, the surcharge shall be applied to all counted credit hours in excess of 140 hours.

For students earning a first baccalaureate degree in a board-approved program that requires more than 128 counted credit hours, the surcharge shall be applied to all credit hours that exceed 110 percent of the credit hours required for the degree. Such programs include those that have been officially designated by the Board of Governors as five-year programs, as well as those involving double majors, or combined bachelor’s/master’s degrees.

For students earning a baccalaureate degree other than their first, the surcharge shall be applied to all counted credit hours that exceed 100 percent of the maximum additional credit hours needed to earn the additional baccalaureate degree.

The surcharge does not apply to students who entered the University before Fall 1994.

Credit hours that count toward the specified limits include: all courses attempted at UNC Charlotte during the fall and spring semesters (including repeated courses, failed courses, and those withdrawn after the last date to add or drop without record) and all transfer credit hours (except those earned during summer sessions). For complete information, please visit registrar.uncc.edu/students/surcharge.htm.

STUDENT CLASSIFICATION
At the beginning of each semester, students working toward a bachelor's degree are classified on the basis of earned semester hours (also referred to as credit hours):

<table>
<thead>
<tr>
<th>Classification</th>
<th>Earned Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman</td>
<td>0-29</td>
</tr>
<tr>
<td>Sophomore</td>
<td>30-59</td>
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<tr>
<td>Junior</td>
<td>60-89</td>
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<tr>
<td>Senior</td>
<td>90 or more</td>
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</tbody>
</table>

REGISTRATION
registrar.uncc.edu

The Office of the Registrar is responsible for the management of the registration process by which students enroll in, drop, and withdraw from courses. Through the registration process, students assume academic and financial responsibility for the courses in which they enroll. They are relieved of these responsibilities only by formally terminating enrollment by dropping or withdrawing in accordance with deadlines specified in the Academic Calendar.

REGISTRATION APPOINTMENT TIMES
Assignments are made according to student classification and cumulative hours earned for undergraduate students and can be viewed online at registrar.uncc.edu/students/register.htm.

REGISTRATION DEADLINES
University policies determine when students may enroll or adjust their enrollment in courses. General deadlines are shown below and specific deadlines for a given term are available online at registrar.uncc.edu/calendars/calendar.asp.

ADD/DROP PERIOD
The Add/Drop period runs through the eighth instructional day of the fall and spring semesters (the second instructional day for the first and second summer sessions).

During the Add/Drop Period, students can:

- Register for courses.
- Drop a course(s) without record (and remain enrolled in other courses).
- Drop all courses without record.
- Change the grade type to Audit or Pass/No Credit (refer to Auditing a Course and Pass/No Credit Option sections).
Elect to retake a course with Grade Replacement (refer to Repeating Courses section).

After the Add/Drop Period students can:

- Withdraw from a course(s) with grade of W recorded (and remain enrolled in other courses) through the tenth week of classes in the fall and spring semesters (ninth calendar day of first and second summer sessions). No student will be allowed to withdraw from a course after this deadline unless there are extenuating circumstances recognized by the University. A student enrolled in only one course must withdraw officially from the University to withdraw from that course by going online and using Banner Self-Service.

- Withdraw from the semester with grade of W recorded for all courses by withdrawing three weeks prior to the end of the fall and spring semesters (twenty-first calendar day of first and second summer sessions). No student will be allowed to withdraw after this deadline unless there are extenuating circumstances recognized by the University. Students may withdraw from their final course by going online and using Banner Self-Service.

Students who experience a personal or medical crisis have the option of requesting a withdrawal from all courses via the Dean of Students Office during the term the crisis begins. If approved, the Dean of Students Office will notify the student’s academic department(s).

Any student who leaves the University before the close of a term without withdrawing officially will receive a failing or unsatisfactory grade (F for undergraduate credit and U for graduate credit) in each course for which he/she is registered.

PREREQUISITES AND PERMITS
All students, including visitors and non-degree students, are required to meet course prerequisites and to obtain the required permissions to enroll in courses through the department which sponsors the course.

AUDITING A COURSE
With the permission of the instructor, a student may audit any course in which space is available. Fees and procedures for this non-credit enrollment are the same as those for a credit enrollment. The procedure for adding or dropping an audit course is the same as for credit enrollments. No student will be allowed to change the designation of a course from audit to credit or from credit to audit after the eighth instructional day of a semester (or a proportional period for summer school). Participation of auditors in course discussions and in tests or examinations is optional with the instructor. Students who audit receive no University credit, but they are expected to attend the course regularly. A grade is entered on the transcript at the discretion of the instructor at the end of the course.

DUAL UNDERGRADUATE AND GRADUATE REGISTRATION
Undergraduate students at UNC Charlotte who are required to take fewer than 12 semester hours of undergraduate work to fulfill all requirements for the bachelor's degree may be allowed during their final semester to enroll in certain courses for the purpose of obtaining graduate credit. Authorization for dual undergraduate/graduate registration may be obtained by submitting to the Dean of the Graduate School a “Special Request” form approved by the student's undergraduate academic advisor, the instructor(s) of the graduate course(s), and the dean(s) of the college(s) offering the graduate course(s), accompanied by the regular application for admission to graduate study and supporting credentials. The total hours to be carried in this status shall not exceed 12 hours, of which no more than nine may be for graduate credit. On the basis of work attempted prior to the final semester, such students must meet the grade point criteria for admission to a graduate degree program at the University. No course for which credit is applied to an undergraduate degree may receive graduate credit. Permission to take graduate courses under dual registration does not constitute admission to any graduate degree program at the University.

CONSORTIUM REGISTRATION
The Charlotte Area Educational Consortium offers an inter-institutional exchange during the fall and spring semesters for full-time undergraduate degree-seeking students. UNC Charlotte students may take courses not available at UNC Charlotte at one of the institutions listed below, have them appear on their transcript, and be computed in their grade point average at this University. The registration process is initiated in the Office of the Registrar and requires the approval of the student's college dean.

- Belmont Abbey College
- Cabarrus College of Health Science
- Carolinas College of Health Sciences
- Catawba College
- Catawba Valley Community College
- Central Piedmont Community College
- Cleveland Community College
- Davidson College
- Gardner-Webb University
- Gaston College
- Gordon-Conwell Theological Seminary
- Johnson C. Smith University
- Lenoir-Rhyne College
- Livingstone College
TERMINATION OF ENROLLMENT

DROPPING OR WITHDRAWING FROM A COURSE(S) WHILE MAINTAINING ENROLLMENT IN OTHER COURSES
A student may terminate enrollment in a course(s) but continue enrollment in other courses by dropping or withdrawing from a course by the respective deadlines specified in the Registration section of the Catalog. This may be done through Banner Self-Service.

OFFICIALLY WITHDRAWING FROM ALL COURSES FOR THE TERM (FALL, SPRING, SUMMER)
Students seeking to withdraw from all courses in a term, after the Add/Drop period as defined in the Registration section of the Catalog, must officially withdraw to terminate enrollment for that term. A student may withdraw from the University through Banner Self Service by the deadline for that term. A withdrawal is effective when the withdrawal action is submitted through Banner to the Office of the Registrar. A student who withdraws from the term will receive the grade of W for all courses in progress; any student who leaves the University before the close of a term without withdrawing officially will receive a failing or unsatisfactory grade (F for undergraduate courses and U for graduate courses) in each course for which he/she is registered. Students who experience a personal or medical crisis have the option of requesting a withdrawal from all courses via the Dean of Students Office during the term the crisis begins. If approved, the Dean of Students Office will notify the student’s academic department(s). [Note: In addition to withdrawing from all courses, students must terminate all financial obligations with the University such as financial aid, housing, dining, etc., by completing necessary paperwork in each office.]

TERMINATION BY THE UNIVERSITY
The University maintains the right to terminate a student’s enrollment in a course for a variety of reasons including, but not limited to: students not meeting necessary prerequisites, course schedule changes, or minimum course enrollment is not met. The University maintains the right to terminate a student’s enrollment at the University for a variety of reasons including, but not limited to: academic suspension, suspension for violation of the Code of Student Responsibility or Code of Student Academic Integrity, or for a student who has not been enrolled for the period of one calendar year.

CLASSROOM POLICIES AND ATTENDANCE

Each instructor determines the classroom policies (including attendance regulations) for his or her courses. In general, students are expected to attend punctually all scheduled sessions in the courses for which they are registered, to demonstrate civil behavior while in class, and to complete all of the course requirements, but instructors may outline additional and more specific standards in the course syllabus. Absences from class may be excused by the instructor for such reasons as personal illness, religious holidays, or participating as an authorized University representative in an out-of-town event. Whenever possible, students are expected to seek the permission of the instructor prior to absences.

GRADING AND RELATED POLICIES

Instructors assign grades on the basis of their evaluation of the academic performance of each student enrolled in their courses. At the end of the term, the grades are reported to the Office of the Registrar which is responsible for maintaining student academic records and making grades available to students.
FINAL GRADES
Final grades are available through the secure student access pages of 49er Express found online at 49erexpress.uncc.edu.

FINAL GRADE CHANGES AND APPEALS FROM FINAL COURSE GRADES
When a final course grade other than Incomplete (I) is officially reported by the instructor at the end of an academic term, the grade is recorded by the Office of the Registrar and can be changed only if the grade has been assigned arbitrarily or impermissibly as defined in the Faculty’s “Policy and Procedures for Student Appeals of Final Course Grades,” available at legal.uncc.edu/policies/GradeAppeal.html.

Students should follow the procedures outlined in the policy if they believe that the final course grade that has been assigned is incorrect. The policy requires the student to discuss the grade with the instructor as soon as possible after the grade is received. Students should note, however, that the University is not obliged to respond to a grade appeal unless the student files it with the appropriate department chairperson or interdisciplinary program director within the first four weeks following the last day of the regular semester or the summer term in which the grade was received. When a grade is assigned consistent with University policy, only the instructor has the right to change the grade except as provided in the Incomplete grade policy. When an instructor reports a grade change for a grade other than I, the “Change of Grade” form must be approved by his/her department chair and college dean.

UNSATISFACTORY GRADE REPORTS
Unsatisfactory Grade Report notifications are sent via email to students in the middle of each semester for courses in which the student is performing below average and a grade has been reported. Students should also seek feedback from instructors. Unsatisfactory grades are available through the secure student access pages of 49er Express found online at 49erexpress.uncc.edu.

GRADES
Letters are used to designate the quality of student academic achievement.

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<th>UNDERGRADUATE GRADES</th>
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* Not used in computation of grade point average

GRADE OF I (INCOMPLETE)
The grade of I is assigned at the discretion of the instructor when a student who is otherwise passing has not, due to circumstances beyond his/her control, completed all the work in the course. The missing work must be completed by the deadline specified by the instructor, and no later than 12 months. If the I is not removed during the specified time, a grade of F, U, or N, as appropriate is automatically assigned. The grade of I cannot be removed by enrolling again in the same course, and students should not re-enroll in a course in which they have been assigned the grade of I.

GRADE OF IP (IN PROGRESS)
The grade of IP is based on coursework for courses that extend over more than one semester. For example, a course that requires enrollment for two consecutive semesters would be eligible for an IP grade in the first term (i.e., Undergraduate Senior Project). A grade of IP should not be given for coursework to be completed in one given term. It cannot be substituted for a grade of I. The IP grade expires after six years, and if no final grade has been awarded by that time, the IP grade will default to a grade of N (no credit).

GRADE OF W (WITHDRAWAL)
No grade will be given for a course dropped on or before the last day to drop a course without record. After this period, a student is permitted to withdraw from a course with a grade of W through the tenth week of the semester (9th calendar day of first and second summer sessions). Only students who experience a personal or medical crisis have the option of requesting a withdrawal from all courses after the tenth week of classes in the semester or to withdraw from all courses during the last two weeks of the semester. This request must be made through the Dean of Students Office during the term of the personal or medical crisis. Unsatisfactory academic performance itself is not an extenuating circumstance. The date of withdrawal is determined when the “Withdrawal” notification is received by the
Office of the Registrar. The grade of W remains on the academic transcript.

**PASS/NO CREDIT OPTION**

Every student will be permitted during his/her undergraduate years to select up to a total of four courses (at most one per academic year) in which he/she can receive an evaluation of H (honors), P (pass), or N (no credit). This option is designed to encourage curiosity, exploration, and experimentation in areas where a student has strong interest but little or no previous experience. The Pass/No Credit option only applies to courses normally graded on an A-F scale, and it cannot be used on courses taken by a student for credit toward his/her major or minor or to satisfy University General Education requirements. *(Note: courses designated by the faculty to be graded on a Pass/No Credit basis may count for the major.)* To exercise this option, the student must declare his/her intention to take a Pass/No Credit option by completing the appropriate form at the Office of the Registrar by the end of the eighth instructional day in the semester; this form requires the approval of the chair of the student’s major department. Courses completed with the grade of Honors or Pass will count toward the hours needed for graduation, but they will not be considered in the computation of the grade point average.

**REPEATING COURSES**

A student may receive credit for a course one time only, unless the course description specifies that it “may be repeated for credit.” However, students can repeat a course to improve their GPA under two different sets of conditions. In the first case, within the limits specified in the next section, a student may replace a grade. This process is called “With Grade Replacement.” In the second case, a student may repeat a course with the new grade averaging in with all others for this same course. This is specified in the second section below as “Without Grade Replacement.”

**With Grade Replacement**

Undergraduate students may replace up to two (2) courses (maximum of 8 credit hours) for grade replacement. Both grades will be reflected on the transcript. However, the higher of the two grades will be used in calculation of the GPA. This policy applies to courses first taken in Fall 2007 and thereafter. *(Note: Some courses in the College of Health and Human Services may not allow grade replacement.)* All courses for which a grade of A, B, C, D, or F may be assigned are eligible for grade replacement under this policy. The course to be replaced and the repeat course must have their grades assigned by UNC Charlotte.

Students must submit a completed “Grade Replacement” online form through Banner Self-Service by the last day to drop a course with no record in the semester or summer session in which the course is to be repeated. A repeated course may not be selected retroactively to use this grade replacement policy. In courses for which the final grade assigned was a D or F, the student may submit the “Grade Replacement” online form requiring no further approval, providing it is within the course and hour limits specified in this policy. In courses for which the final grade assigned was a C or above, the student must submit the online form that will be routed electronically to obtain approval of the department chair and the dean of the college of the student’s program or major, and remain within the two-course, eight-hour limitations of this policy. Once a student has filed a “Grade Replacement” form for a course that choice cannot be revoked due to withdrawing from the course or from the University. *(Medical or special circumstances may be reviewed on a case-by-case basis.)* The original course grade will be the grade of record for the course and not a W. Any such withdrawal still consumes one of the two course substitutions permitted under this policy. Students enrolled in special topics courses for a grade replacement must enroll in the same topic for which they originally received the grade to be replaced. A grade received owing to an admitted or adjudicated academic dishonesty violation shall not be replaced if the course is repeated. This exception is not subject to appeal or academic petition.

**Without Grade Replacement**

In all courses which are not identified as being repeatable for additional credits, a student who has received a grade of C, H, P, or above in a course may repeat that course only with prior approval of the student’s advisor, department chair, and dean. Students seek approval by completing an “Academic Petition” form found online at: registrar.uncc.edu/sitemap.htm#forms. An undergraduate student who received a D, F, or U in a course may repeat a course without seeking outside approval. All grades for repeated courses will be shown on the student’s official transcript and be used in the calculation of the grade point average. For prerequisite purposes, the most recent grade will be used whether or not it is the highest.

**CREDIT HOURS**

Credit hours, also known as semester hours, are the number of hours the course is allocated. The majority of undergraduate courses have three (3) credit hours, while labs and other courses may have one, two, four, or more credit hours. Attempted, passed, and earned credit hours are reported on transcripts. Refer to example below.

**QUALITY POINTS**

Quality points, also known as grade points, are determined by multiplying the number of points assigned to each grade (A = 4, B = 3, C = 2, D = 1, F = 0) by the number of credit hours associated with that course. Refer to example below.
GPA HOURS
GPA hours, also known as quality hours, are the total number of credit (semester) hours in the graded courses the student has attempted, except for those for which a grade of I, IP, W, P, AU, or N is recorded. Refer to example below.

GRADE POINT AVERAGE (GPA)
The grade point average for an undergraduate student is determined by adding all accumulated quality points together, and then dividing by the total number of GPA hours the student has attempted, excluding those for which the student received a grade of I, IP, W, H, P, AU, or N. In computing the grade point average, only those credits attempted at UNC Charlotte or through the Charlotte Area Educational Consortium are included. Refer to the example below.

Example of Transcript:

<table>
<thead>
<tr>
<th>Subject</th>
<th>Course</th>
<th>Grade</th>
<th>Credit Hours</th>
<th>Quality Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMST</td>
<td>2050</td>
<td>P</td>
<td>3.000</td>
<td>0.00</td>
</tr>
<tr>
<td>CHEM</td>
<td>1251</td>
<td>F</td>
<td>3.000</td>
<td>0.00</td>
</tr>
<tr>
<td>CHEM</td>
<td>1251L</td>
<td>F</td>
<td>1.000</td>
<td>0.00</td>
</tr>
<tr>
<td>ENGL</td>
<td>1101</td>
<td>B</td>
<td>3.000</td>
<td>9.00</td>
</tr>
<tr>
<td>ENGR</td>
<td>1201</td>
<td>C</td>
<td>2.000</td>
<td>4.00</td>
</tr>
<tr>
<td>LBST</td>
<td>2101</td>
<td>C</td>
<td>3.000</td>
<td>6.00</td>
</tr>
<tr>
<td>MATH</td>
<td>1241</td>
<td>C</td>
<td>3.000</td>
<td>6.00</td>
</tr>
</tbody>
</table>

Term Totals (Undergraduate)

<table>
<thead>
<tr>
<th>Current Term</th>
<th>Attempt Hours</th>
<th>Passed Hours</th>
<th>Earned Hours</th>
<th>GPA Hours</th>
<th>Quality Points</th>
<th>GPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>18.000</td>
<td>14.000</td>
<td>14.000</td>
<td>15.000</td>
<td>25.00</td>
<td>1.667</td>
<td></td>
</tr>
<tr>
<td>Cumulative</td>
<td>18.000</td>
<td>14.000</td>
<td>14.000</td>
<td>15.000</td>
<td>25.00</td>
<td>1.667</td>
</tr>
</tbody>
</table>

Example of GPA Calculation:

\[ \text{GPA} = \frac{\text{Quality Points}}{\text{GPA Hours}}; \frac{25}{15}=1.667 \]

GRADE POINT CALCULATOR
To calculate grades, visit registrar.uncc.edu/students/gpacalc.htm.

ACADEMIC STANDING

ACADEMIC HONORS

CHANCELLOR’S LIST
The Chancellor’s List recognizes undergraduate degree-seeking students with outstanding records of academic performance. To qualify for the Chancellor’s List during the fall or spring semester, a full-time student must earn a grade point average of at least 3.8 in 12 or more semester hours of credit graded A, B, or C, with no grade less than C. A part-time student must earn a combined fall and spring grade point average of at least 3.8 in 12 or more semester hours of credit graded A, B, or C, with no grade less than C. To qualify for the Chancellor’s List as a part-time student, a student must enroll on a part-time basis in both fall and spring semesters in the same academic year. Students who receive the grade of AU, H, or P are not excluded from recognition as long as 12 hours are completed with A, B, or C. Students who receive the grade of D, F, I, NR, or N are not eligible for recognition. Chancellor’s List recognition appears on the student’s academic record (official transcript).

DEAN’S LIST
The Dean’s List recognizes undergraduate degree-seeking full-time students who earn a grade point average of at least 3.4 and not more than 3.79 and meet all other criteria as described for the Chancellor’s List. Dean’s List recognition appears on the student’s academic record (official transcript).

GRADUATION WITH DISTINCTION
Students may earn undergraduate degrees at different levels of distinction: Cum Laude (“With Honor”), Magna Cum Laude (“With Great Honor”), and Summa Cum Laude (“With Highest Honor”). Each of the undergraduate degrees is awarded Cum Laude when the graduating student’s cumulative grade point average is 3.4 or more but less than 3.8, Magna Cum Laude when it is at least 3.8 but less than 4.0, and Summa Cum Laude when it is 4.0. To be eligible to graduate with distinction, a student must have a grade point average computed on at least 48 semester hours of credit completed in residence at UNC Charlotte.

REQUIREMENTS FOR CONTINUED ENROLLMENT

GOOD ACADEMIC STANDING
An undergraduate student must maintain a cumulative grade point average of 2.0 or above at UNC Charlotte to remain in good academic standing. Academic Standing of each student is calculated at the end of the Fall and Spring semesters.

SEMESTER WARNING
An undergraduate student whose cumulative GPA is at or above 2.0 at the end of a Fall or Spring semester but whose GPA for that semester is below 2.0 is placed on semester warning. This warning status is an indication of potential academic problems and is communicated to the student and the student’s advisor and major department(s).

ACADEMIC PROBATION
An undergraduate student whose cumulative GPA is below 2.0 at the end of the Fall or Spring semester is placed on academic probation, and this is noted on the student’s permanent academic record.

ACADEMIC SUSPENSION
An undergraduate student who remains on academic probation for two consecutive semesters (excluding summer sessions) is suspended from the University.
However, a student who has a current Fall or Spring semester GPA of 2.3 or higher will not be suspended.

**Exception for Summer Enrollment**
Students who are on academic suspension are permitted to enroll in summer session classes. They are not eligible to continue enrollment in the Fall and Spring semesters until they have applied and been approved for reinstatement or readmission.

**READMISSION OF FORMER STUDENTS**

The following individuals must make application for readmission to the University prior to the semester or summer term for which registration is sought: a former student who has graduated, a former student who has been suspended for academic or disciplinary reasons, and a student who has not been enrolled for 12 consecutive months after the semester last attended at UNC Charlotte. (Example of the latter: last enrolled Fall semester 2009; not enrolled Spring or Fall 2010; to enroll in Spring 2011 student must apply in Fall 2010.) Application should be filed at the Office of the Registrar in accordance with the published dates. Such individuals must meet the GPA and departmental progression requirements of the major in which they will return. Official transcripts from any institution attended during the student’s absence from the University must be submitted prior to enrollment.

Students may be readmitted one time under the “Associate Degree Rule” or the “Two-Year Rule” but not both.

**ASSOCIATE DEGREE RULE**
Students who leave UNC Charlotte and subsequently earn an Associate of Arts (AA), an Associate of Science (AS), or an Associate of Fine Arts (AFA) degree may apply for readmission as transfer students and transfer a maximum of 64 semester hours, including hours from UNC Charlotte or other four-year institutions applied to the Associate Degree.

**TWO-YEAR RULE**
Any undergraduate student who has not been enrolled at UNC Charlotte for a minimum period of 24 consecutive months is eligible for one readmission under the "Two-Year Rule." The "Two-Year Rule" will be applied automatically if the student is eligible. (Students electing not to have it applied may exercise this option by filing a form with the Office of the Registrar after consulting with their advisor and obtaining approval from the dean of their college.) Colleges and departments which have published admission or continued enrollment standards that are more restrictive than general University requirements retain the right to admit or to deny readmission to a specific program.

If a student is readmitted under the provisions of the "Two-Year Rule," only those courses for which the student has received a grade of C or above (or H or P) can be used for academic credit. The GPA will be based only on the courses that return with the student and the courses taken after readmission. Eligibility for continued enrollment is determined as in the case of transfer students. To qualify for graduation with honors, a readmitted student must have a GPA computed on at least 48 hours taken in residence on which the UNC Charlotte GPA is based.

**SECOND BACCALAUREATE MAJOR/BACCALAUREATE MINOR**
Students who have earned a bachelor’s degree from UNC Charlotte may apply for readmission into a program leading to a second major or to a baccalaureate minor. Refer to section entitled Declaring Majors and Minors.

*Note: Readmission after Academic or Disciplinary Suspension is not automatic. An application for readmission must be made and approved. Included in the approval must be an acceptance from the department in which the student would major.*

**ACADEMIC APPEAL AND GRIEVANCE PROCEDURES**

Academic appeals and grievances are generally addressed by the college where the appeal or grievance arises or, if no particular college is appropriate, by the Office of the Registrar. Undergraduate students may appeal an academic suspension by submitting a written statement online to the Office of the Registrar at registrar.uncc.edu/students/susp.htm.

Decisions about suspension appeals are made by the chair of the department in which the student is enrolled or the dean of University College if the student’s major is undeclared. For all other academic appeals, undergraduate students must complete an “Academic Petition,” found online at registrar.uncc.edu/sitemap.htm#forms, including recommendations of approval.

For additional information on grievances, see “Student Grievance Procedures” online at legal.uncc.edu/StudentGrievanceProcedure.html.
TRANSFER CREDIT AND ADVANCED ACADEMIC STANDING

Evaluation of transfer credits, advanced standing, CLEP, AP, and IB are coordinated through the Office of Undergraduate Admissions. Prospective students who desire further information about policies and procedures for awarding credit should contact the Office of Undergraduate Admissions or utilize the “Transfer Credit Advisor” tool online at admissions.uncc.edu.

UNC Charlotte will accept appropriate undergraduate credits earned through AP, IB, CLEP, armed forces service schools, and college level courses completed prior to graduation from high school. In addition, UNC Charlotte will accept or transfer appropriate undergraduate and graduate credits earned at another accredited institution or through credit by examination. Credit toward a degree is not awarded for Continuing Education Units (CEUs) or for remedial level college courses.

ADVANCED PLACEMENT COURSE CREDIT (AP)
The University will accept appropriate undergraduate credits earned through Advanced Placement Program Tests completed prior to graduation from high school. Students must request that official Advanced Placement test results be sent directly to the Office of Undergraduate Admissions for evaluation (UNC Charlotte code 5105). Prospective students who desire further information about policies and procedures for awarding credit should view score requirements and other related information at admissions.uncc.edu.

INTERNATIONAL BACCALAUREATE PROGRAM (IB)
The University will award credit for subjects in which students score appropriate scores on the IB examinations. View score requirements at admissions.uncc.edu.

COLLEGE LEVEL EXAMINATION PROGRAM (CLEP) GENERAL EXAMINATION
An undergraduate student may receive up to 23 semester hours of elective credit.

SUBJECT MATTER EXAMINATIONS
Credit may be awarded for subject matter examinations listed below at the levels recommended in the current edition of CLEP Scores: Interpretation and Use.

Business
Information Systems and Computer Applications
Introductory Accounting
Introductory Business Law
Principles of Management
Principles of Marketing

Education
Human Growth and Development

INTRODUCTION TO EDUCATIONAL PSYCHOLOGY

FOREIGN LANGUAGE
College French I & II
College German I & II
College Spanish I & II

HUMANITIES
American Literature
Analysis & Interpretation of Literature
College Composition (with Essay)
English Literature

MATHEMATICS
Calculus w/Elementary Functions
College Algebra
College Algebra-Trigonometry
Trigonometry

SCIENCES
General Biology
General Chemistry

SOCIAL SCIENCES
American Government
American History I & II
Introduction to Macroeconomics
Introduction to Microeconomics
Introduction to Psychology
Introduction to Sociology
Western Civilization I & II

CLEP credit will be awarded according to UNC Charlotte policy in place at the time of evaluation. View score requirements at admissions.uncc.edu.

The amount of CLEP credit that is applicable to a specific degree program is determined by the department offering the program.

TRANSFER CREDIT FROM OTHER INSTITUTIONS
Official transcripts are evaluated in the Office of Undergraduate Admissions and the results are provided to the applicant and to the major department/college. Determining the applicability of transferred credits to major or program requirements is the responsibility of the department chairperson or program director. General rules governing transfer credit:

1) Only courses taken at a regionally accredited institution will be considered for transfer credit.
2) Provisional transfer credit may be granted for study at foreign institutions or certain U.S. institutions that are not regionally accredited, but must be validated by 30 semester hours of successful performance in residence at UNC Charlotte.
3) Courses for which credit is accepted must be appropriate for approved University programs and curricula in which the student is enrolled.
4) No credit below C level will be accepted; grade points and averages do not transfer.
5) Transfer credit is awarded only upon receipt in the UNC Charlotte Office of Undergraduate
Admissions of an official transcript from the institution where the credit was earned.

Students who hold a baccalaureate degree from an accredited institution will not be required to satisfy the UNC Charlotte General Education Requirements for a second degree. Students will be issued a transfer credit report and will have their credit from their first degree evaluated.

CREDIT FOR MILITARY TRAINING
The University will approve academic credit for military training equivalent to UNC Charlotte courses required for the students' major, minor, or General Education requirements. The credit must be approved by the student's major department chair, college dean, and the department that offers the course.

Documentation of the training, such as a license of completion or notation on the student's DD Form 214, is required. The same requirements apply to transfer or military training credit approved by another institution. Contact the Office of the Registrar for further information.

CREDIT FROM TWO-YEAR INSTITUTIONS
The University accepts a maximum of 64 semester hours of credit from two year institutions for undergraduate students. Remedial and technical courses will not transfer.

TRANSIENT STUDY
Courses undertaken by UNC Charlotte undergraduate degree students at other accredited institutions may be transferred to the University subject to the following regulations:

1) The University is not obligated to accept any credit from another institution unless the student has obtained the prior approval of the dean of the college in which he/she is enrolled. A "Permit for Transient Study" form should be completed and filed in the UNC Charlotte Office of the Registrar prior to enrollment at another institution.

2) No credit will be accepted for courses below C level for undergraduate students.

3) The student must request that an official transcript be mailed to the Office of the Registrar upon completion of the course. A form for this purpose is available in the Office of the Registrar.

4) Students in the College of Liberal Arts & Sciences and students in the University College are not permitted to take courses at another educational institution in the Fall or Spring semester if they are enrolled full-time (12 credits or more) at UNC Charlotte in the same semester, unless it is a course not offered at UNC Charlotte (e.g., American Sign Language).

5) Grades do not transfer.

CREDIT BY EXAMINATION
A student currently enrolled at UNC Charlotte may pass a specially prepared challenge examination and receive credit for a University course without having to do the normal course work. The student contacts the chair of the department in which credit is sought to request administration of an examination. Since it may not be appropriate to award credit by examination for some courses, the decision to offer an examination is that of the department. If the chair authorizes an examination, the student must complete the required fee for credit by examination and will have their credit from their first degree evaluated.

TRANSFER STUDENTS EXEMPT FROM THE FIRST-YEAR WRITING REQUIREMENT
Students will be deemed to have fulfilled the First-Year writing requirement (ENGL 1101 and ENGL 1102) if either of the following apply: a) exemption from first-year writing (without credit) at another college or university; or b) 64 or more transferred credit hours from U.S. institution(s) of higher education. (Some exceptions may apply for students with transferred credit hours from institutions where English is the language of instruction.)

TRANSFER STUDENTS EXEMPT FROM THE LOWER-DIVISION GENERAL EDUCATION REQUIREMENTS
Some transfer students are exempt from the lower division General Education requirements if they are admitted to the University in Fall 2003 or thereafter. These include:

- Students from North Carolina Community Colleges who receive an Associate of Arts (AA), Associate of Science (AS), or an Associate of Fine Arts (AFA).
- Students from North Carolina Community Colleges who have completed the 44 hour general education core. (Comprehensive Articulation Agreement, CAA)
- Students who graduate from a North Carolina Community College with an Associate of Applied Science (AAS) and enroll at UNC Charlotte in an approved 2+2 degree completion program. (In this case, the exemption becomes invalid if the student changes programs.)

Transfer Students from out-of-state and private institutions of higher education who receive an Associate Degree from that institution will have the degree evaluated for the same General Education exemption on a case by case basis by the Office of Undergraduate Admissions.
evaluation will be the amount of college-level English, math, natural science, social science, and humanities course work that is included in the degree’s curriculum. Curriculums that are more technical in nature or lack key features of the UNC Charlotte General Education core may not be approved for an exemption from lower division General Education requirements, but individual courses will be accepted towards the UNC Charlotte requirements.

“Lower division General Education requirements” refers to courses in composition, mathematics and logic, sciences, social sciences, liberal studies (LBST), and three (3) credits designated as writing intensive and one to three (1-3) credits designated as oral communications. Students MUST still complete three semester hours in the major designated as Writing Intensive (W) to satisfy all General Education requirements for graduation.

GRADUATION

APPLICATION FOR THE DEGREE
each student must make application for his/her degree no later than the filing date specified in the academic calendar. The application may be submitted through the Office of the Registrar’s online at registrar.uncc.edu. The fee for graduation will be billed to the student’s account. Degrees are awarded at commencement exercises held at the end of the Fall and Spring semesters; however, the diploma and transcript will reflect the term in which all requirements were completed, and the diploma will be mailed to the student's address of record.

Students completing their degree requirements in May participate in the May ceremony. Students completing degrees in a summer term, as well as those completing in December, participate in the December ceremony.

TEACHER LICENSURE

Students who have completed degree requirements and obtained passing scores on appropriate exit tests (e.g., Principles of Teaching and Learning, Praxis I/II Subject Assessments) must apply for licensure through the Teaching, Advising and Licensure (TEAL) Office in the College of Education. TEAL will process and submit application packets including Praxis scores, final transcripts, and required fees to the North Carolina Department of Public Instruction (NCDPI). Licenses are mailed directly to applicants by NCDPI.

COMMENCEMENT MARSHALS

At each commencement ceremony, the University honors the juniors with the highest grade point averages by inviting them to serve as the marshals who lead the processions of graduates, faculty members, and the platform party. To select students for this honor, the University considers juniors who have completed 75 hours of degree work, enrolled full-time (12 or more hours per semester) during the two most recent semesters, and are able to attend the ceremony.

ACADEMIC RECORDS AND TRANSCRIPTS

The Office of the Registrar is responsible for maintaining the official academic records for all students. Upon written request by the student or an online request through Banner Self-Service, an official transcript of the academic record will be issued to the person or institution designated, provided that all the student's obligations to the University have been settled satisfactorily.

A nominal fee per copy must accompany each transcript request. Requests should reach the Office of the Registrar at least one week before the date the transcript is needed. Students may request an official transcript through the secure student access pages of self service via 49er Express found online at 49erexpress.uncc.edu or complete a request form available at registrar.uncc.edu/forms/transcript.pdf. The Office of the Registrar cannot accept requests via email.

FAMILY EDUCATIONAL RIGHTS AND PRIVACY ACT (FERPA) ANNUAL NOTIFICATION

The Family Educational Rights and Privacy Act (FERPA) affords students certain rights with respect to their education records. These rights include:

(1) The right to inspect and review the student's education records within 45 days of the day the University receives a request for access.

Students should submit to the Office of the Registrar, dean of their college, chair of their major academic department, or other appropriate official written requests that identify the record(s) they wish to inspect. University official will make arrangements for access and notify the student of the time and place where the records may be inspected. If the records are not maintained by the University official to whom the request was submitted, that official shall advise the student of the correct official to whom the
request should be addressed.

(2) The right to request the amendment of the student's education records that the student believes are inaccurate, misleading, or otherwise in violation of the student's privacy rights under FERPA.

A student who wishes to ask the University to amend a record should write the University official responsible for the record, clearly identify the part of the record the student wants changed, and specify why it should be changed.

If the University decides not to amend the record as requested, the University will notify the student in writing of the decision and the student's right to a hearing regarding the request for amendment. Additional information regarding the hearing procedures will be provided to the student when notified of the right to a hearing.

(3) The right to provide written consent before the University discloses personally identifiable information from the student's education records, except to the extent that FERPA authorizes disclosure without consent.

The University discloses education records without a student's prior written consent under the FERPA exception for disclosure to school officials with legitimate educational interests. A school official is a person employed by the University in an administrative, supervisory, academic or research, or support staff position (including law enforcement unit personnel and health staff); a person or company with whom the University has contracted as its agent to provide a service instead of using University employees or officials (such as an attorney, auditor, collection agent; or outsourced institutional service provider); a person serving on the Board of Trustees; or a student serving on an official committee, such as a disciplinary or grievance committee, or assisting another school official in performing his or her tasks.

A school official has a legitimate educational interest if the official needs to review an education record in order to fulfill his or her professional responsibilities for the University.

Upon request, the University also discloses education records without consent to officials of another school in which a student seeks or intends to enroll or is already enrolled, so long as the disclosure is for purposes related to the student's enrollment or transfer.

(4) The right to file a complaint with the U.S. Department of Education concerning alleged failures by the University to comply with the requirements of FERPA. The name and address of the Office that administers FERPA is:

Family Policy Compliance Office
U.S. Department of Education
400 Maryland Avenue, SW
Washington, DC  20202-5901

UNC Charlotte intends to comply fully with these requirements. Policy Statement #69, "Student Records," explains the procedures for compliance. Students may obtain copies of the policy in the Office of the Registrar or online at legal.uncc.edu/policies/ps-69.html. The policy includes a list of the locations of all education records maintained by the institution.

The following categories of personally identifiable information about students have been designated as public or directory information that may be disclosed for any purpose without student consent: name, local and permanent address, email address, telephone number, date and place of birth, class, major field of study, dates of attendance, enrollment status, degrees and awards (including scholarships) received, participation in officially recognized activities and sports, weight and height of members of athletic teams, and the most recent previous educational agency or institution attended. Directory information does not include a student's Social Security Number or student identification number.

Currently enrolled students may request that the University withhold disclosure of Directory Information by completing the appropriate form available in the Office of the Registrar. A request for non-disclosure will be honored by the University indefinitely, unless the student submits to the Office of the Registrar a written revocation of such request for non-disclosure.

All questions concerning this FERPA Annual Notification may be directed to the attention of the Office of the Registrar.
Student Expenses and Fees

Charges for tuition and fees vary according to the student’s status as a resident or nonresident of North Carolina. A nonresident student pays a higher rate of tuition than a legal resident.

The University reserves the right, with the approval of proper authorities, to make changes in tuition and fees at any time. The University also reserves the right to correct any clerical errors on a student’s account. For the most current listing of tuition and fees at The University of North Carolina at Charlotte, see studentaccounts.uncc.edu.

STUDENT EXPENSES

Graduate students taking 9 or more semester hours and undergraduate students taking 12 or more semester hours during a regular semester will be charged full tuition and fees. Students taking fewer than the 9 hours for graduate study and 12 hours for undergraduate study will be charged a prorated portion of tuition and fees as specified in the fee schedules in this Catalog.

FEE PAYMENT

Tuition and fees are due and payable by the date specified on the bill. Billing statements (eBill) will be issued monthly and can be viewed online by logging on to 49er Express. The email notifications will be issued to a student’s UNC Charlotte email account when there is a balance due to the University. Checks and money orders should be made payable to UNC Charlotte, with the student’s ID number included. Visa, MasterCard, and American Express are accepted. Payments by credit card may be made online through 49er Express.

UNC Charlotte offers payment plans which allow students to spread out their tuition and fees, on-campus housing and dining, and other charges billed to the student’s account into several smaller payments. Students may log-on to 49er Express and select the payment plan option that best meets their needs. Payment plan options and additional information can be found at finance.uncc.edu/pages/payment-options.

RETURNED CHECK POLICY

If a check is returned by the bank, a letter is sent to the maker indicating that a penalty of $25 has been assessed and the account must be settled within 10 working days or the check will be considered to be a bad check and be processed accordingly. A hold will be placed on the student’s record until the bad check is covered and the penalty is paid.

A student who pays a previous balance with a check in order to have a registration hold flag lifted will have their registration cancelled if the check is returned by the bank for any reason.
**RESIDENCE STATUS FOR TUITION PURPOSES**

Tuition charges are based upon classification of a student as a resident or a nonresident of North Carolina for tuition purposes. UNC Charlotte shall determine whether a student is a resident or a nonresident for tuition purposes in accordance with North Carolina General Statutes that are summarized below. A more complete explanation of the statute and the procedures are contained in The North Carolina State Residence Classification Manual. Copies of the Manual are available for inspection in the Library, in the Residency Determination Office, and online at resdetermination.uncc.edu.

**RESIDENCE**

Generally, in order to qualify as a resident for tuition purposes, a person must be a legal resident of North Carolina AND must have been domiciled in North Carolina for at least twelve (12) months immediately prior to classification as a resident for tuition purposes. In order to be eligible for such classification, the person must establish that his or her presence in the state during such twelve-month period was for purposes of maintaining a bona fide domicile rather than for purposes of mere temporary residence incident to enrollment in an institution of higher education.

**INITIATIVE AND PROOF OF STATUS**

A student is responsible for seeking reclassification as a resident for tuition purposes. A student must (1) provide all of the information UNC Charlotte requires for consideration of residence classification and (2) establish facts that justify classification as a resident for tuition purposes.

**PARENTS’ DOMICILE**

If a dependent student has living parents(s) or a court-appointed guardian who maintain bona fide domicile in North Carolina, this fact shall be prima facie evidence that the student is also domiciled in North Carolina. This primary proof of the student’s legal residence may be supported or rebutted by other information relative to the applicant’s age and general circumstances.

If a student’s parent(s) or guardian are domiciled outside of North Carolina, this fact shall be prima facie evidence that the student is also not domiciled in North Carolina, unless the student has lived in North Carolina for the five years preceding enrollment or re-registration at UNC Charlotte.

**DOMICILE OF NON-U.S. CITIZENS**

If a student is not a U.S. citizen, he/she may or may not qualify for resident tuition on the same basis as a U.S. citizen. The type of immigration documentation held by the student will determine the status.

**EFFECT OF MARRIAGE**

A person does not automatically obtain North Carolina domicile solely by marrying a North Carolina resident. If both spouses have established a North Carolina domicile and one has met the 12 month requirement, the member of the couple who has not met the requirement may borrow his/her spouse’s domicile to meet the 12 month requirement. However, the two durations cannot be added together to meet the 12-month requirement.

**MILITARY PERSONNEL**

A North Carolinian who serves outside the State in the armed forces does not lose North Carolina domicile and thus North Carolina legal residence simply by reason of such service. Students in the military may prove retention or establishment of legal residence by reference to residency acts accompanied by residientiary intent.

A dependent relative of a service member stationed in North Carolina shall be charged the in-state tuition rate while the dependent relative is living in North Carolina with the service member. Under this provision, the dependent relative must comply with any applicable requirements of the Selective Service System.

Also, members of the North Carolina National Guard may be eligible to pay the in-state rate while attached to a military unit in North Carolina. Only the Guard member is eligible for this benefit.

Tuition benefits based on military service may be enjoyed only if requirements for admission to UNC Charlotte have been met. The military service tuition statute does not qualify a person for or provide the basis for receiving derivative benefits under other tuition statutes.

**TEACHERS**

North Carolina teachers may be eligible for the in-state tuition rate for courses taken for teacher certification or professional development as a teacher even if they do not meet the twelve month requirement.

**EMPLOYEES**

Full-time employees of The University of North Carolina who are legal residents qualify for the in-state rate even if they do not meet the twelve-month requirement. This benefit is also extended to the spouse and dependents of the employee. Spouses and dependents must also be legal residents.

**GRACE PERIOD**

If a student (1) is a legal resident of North Carolina, (2) has consequently been classified a resident for tuition purposes, and (3) has subsequently lost North Carolina legal residence while enrolled at UNC Charlotte, the student may continue to enjoy the in-
state tuition rate for a grace period of 12 months measured from the date the student lost his or her status as a legal resident. If the 12 month grace period ends during an academic term in which the student is enrolled at UNC Charlotte, the grace period extends to the end of that term. Marriage to one domiciled outside of North Carolina does not, by itself, cause loss of legal residence.

MINORS
Minors (persons under 18 years of age) usually have the domicile and thus the legal residence of their parents. This presumption may be rebutted by other information in the case of divorce, legal separation, a deceased parent or a minor living with neither parent. Certain specific cases are recognized in determining residence for tuition purposes.

a) If a minor’s parents live apart, the minor’s legal residence is deemed to be North Carolina for the time period(s) that either parent, as a legal resident of North Carolina, may claim and does claim the minor as a tax dependent. Under this provision, a minor deemed to be a legal resident will not, upon turning eighteen before enrolling at an institution of higher education, lose North Carolina legal residence if he or she (1) acts in a manner consistent with bona fide legal residence in North Carolina and (2) begins enrollment at UNC Charlotte no later than the Fall academic term immediately following completion of education prerequisite to admission at UNC Charlotte.

b) If a minor has lived for five or more consecutive years with relatives (other than parents) who are domiciled in North Carolina and if the relatives have functioned during this time as if they were personal guardians, the minor will be deemed a resident for tuition purposes for the enrolled term commencing immediately after the five years in which these circumstances have existed. Under this provision, a minor deemed to be a resident for tuition purposes immediately prior to his or her eighteenth birthday will be deemed a legal resident of North Carolina for the required 12 month period when he or she turns eighteen; provided he or she does not abandon North Carolina legal residence.

RE-ESTABLISHMENT OF DOMICILE WITHIN 12 MONTHS
If a student ceases enrollment at or graduates from UNC Charlotte while classified a resident for tuition purposes and then abandons and reestablishes North Carolina legal residence within a 12-month period, that student shall be permitted to re-enroll at UNC Charlotte as a resident for tuition purposes without meeting the 12-month durational requirement. Under this provision, the student maintains the reestablished legal residence through the beginning of the academic term for which in-state tuition status is sought. A student may receive the benefit of this provision only once.

TRANSFER STUDENTS
When a student transfers from one institution of higher education to another, he or she is treated as a new student and must be assigned an initial residence classification for tuition purposes.

CHANGE OF STATUS
A student accepted for initial enrollment at UNC Charlotte or permitted to re-enroll following an absence from the institutional program that involved a formal withdrawal from enrollment will be classified by the admitting institution either as a resident or as a nonresident for tuition purposes prior to actual enrollment.

RESIDENCY APPLICATION PROCEDURE
A newly admitted student or continuing student who has been classified as a non-resident for tuition purposes may pursue reconsideration of the residency classification by submitting the Residence and Tuition Status Application and supporting documentation to the Residency Determination Office.

APPEAL PROCEDURE
A student who has exhausted the residency application procedure and has been classified as a non-resident for tuition purposes, may request further consideration of that decision to the UNC Charlotte University Residence Status Appeals Board (URSAB) pursuant to the “Policy and Procedures for Determining Residence Status for Tuition Purposes.” This request must be in writing to the Chairperson of the URSAB and must be submitted to the Residency Determination Office within twenty (20) business days from the date of the issuance of the letter of determination. The request may consist simply of the statement, “I wish to appeal the decision of my residence classification for tuition purposes.” It must be dated and signed and should indicate the applicant’s UNC Charlotte student identification number, academic term, mailing address, e-mail address, and phone number.
Tuition and Fees Per Semester

Following are the tuition and mandatory fees – which are explained below – that were authorized for 2010-2011. (At press time, the tuition and fees for 2011-2012 had not yet been released.) The University reserves the right, with the approval of the appropriate authorities, to make changes in tuition and/or fees at any time.

### UNDERGRADUATE

<table>
<thead>
<tr>
<th></th>
<th>1-5 Credit Hours</th>
<th>6-8 Credit Hours</th>
<th>9-11 Credit Hours</th>
<th>12+ Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resident Tuition (in-state)</td>
<td>$380.50</td>
<td>$761.00</td>
<td>$1141.50</td>
<td>$1522.00</td>
</tr>
<tr>
<td>Non-Resident Tuition (out-of-state)</td>
<td>1761.50</td>
<td>3522.75</td>
<td>5284.25</td>
<td>7045.50</td>
</tr>
<tr>
<td>Ed &amp; Tech Fee</td>
<td>45.50</td>
<td>85.50</td>
<td>171.00</td>
<td>171.00</td>
</tr>
<tr>
<td>General Fee</td>
<td>270.25</td>
<td>526.75</td>
<td>1036.50</td>
<td>1036.50</td>
</tr>
<tr>
<td>ID Fee</td>
<td>5.00</td>
<td>5.00</td>
<td>5.00</td>
<td>5.00</td>
</tr>
<tr>
<td>Transportation Services Fee</td>
<td>5.00</td>
<td>5.00</td>
<td>5.00</td>
<td>5.00</td>
</tr>
<tr>
<td>UNC System Assoc Fee</td>
<td>0.15</td>
<td>0.25</td>
<td>0.50</td>
<td>0.50</td>
</tr>
<tr>
<td><strong>Resident Total Tuition &amp; Fees (in-state)</strong></td>
<td><strong>$706.40</strong></td>
<td><strong>$1,383.50</strong></td>
<td><strong>$2,188.50</strong></td>
<td><strong>$2,569.00</strong></td>
</tr>
<tr>
<td><strong>Non-Resident Total Tuition &amp; Fees (out-of-state)</strong></td>
<td><strong>2,087.40</strong></td>
<td><strong>4,145.25</strong></td>
<td><strong>6,331.25</strong></td>
<td><strong>8,092.50</strong></td>
</tr>
</tbody>
</table>

### MANDATORY FEES

**ED & TECH FEE**
This fee is directly related to the infrastructure supporting student technology needs across campus including hardware and software applications, supplies for educational materials, web services, laboratory expenses and equipment, public student computing labs, central email and internet services, training classes and classroom, and central help desk services.

**GENERAL FEES**
This is a consolidated fee that relates to University debt service payments (to construct new facilities and purchase administrative computing systems) and to support other activities/operations including Athletics programs and events, the Health Services Center that serves our student population, Student Activity Center operations, and Cone Center operations.

**ID FEE**
This fee supports the University’s 49er Card operations and support. The ID card is not only used for identification purposes, but also as a library card and as a campus card for dining and vending purchases.

**UNC SYSTEM STUDENT ASSOCIATION FEE**
This fee is a University of NC system-wide fee charged to all system students to support the University Of NC Association Of Student Governments. This association is a student-led advocacy group whose main purpose is to ensure that the benefits of the University of NC are extended to the people of NC, as far as practicable, free of expense.

**TRANSPORTATION FEE**
This fee helps to fund the campus transportation shuttle system which operates during the Fall and Spring semesters. The shuttle serves to provide the UNC Charlotte campus with efficient and safe campus transportation, reduce vehicular congestion, and decrease the demand for proximity parking.

### HOUSING COSTS

Shared Residence Hall space is not available to married students and/or their family members. The below figures are 2010-2011 rates per semester and include rent, all utilities, local phone service, cable TV service, The Miner Movies Channel, an Internet connectivity charge, and membership in the Resident Students Association. **Prices and plans are subject to change.** Updated pricing can be found online at: housing.uncc.edu/assignments/asg_rates.htm.

### HOUSING PER SEMESTER

<table>
<thead>
<tr>
<th>Type</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apartment</td>
<td>$2,425 – 2,905</td>
</tr>
<tr>
<td>Greek Village</td>
<td>$2,985</td>
</tr>
<tr>
<td>Highrise/Residence Hall – Double Room</td>
<td>$1,915</td>
</tr>
<tr>
<td>Highrise/Residence Hall – Single Room (if available)</td>
<td>$2,755</td>
</tr>
<tr>
<td>Suite</td>
<td>$2,315 – 2,905</td>
</tr>
</tbody>
</table>

**HOUSING DEPOSIT**
Admission to UNC Charlotte does not guarantee residence hall space. Arrangements for on-campus housing are made, after admission, with the Director of Housing and Residence Life. Residence Hall...
space is not available to families or children of enrolled students.

A $200 deposit must be submitted with all housing contracts. The deposit is not applied toward payment of fees. It is refunded only after the student has left on-campus housing and only if the student has met all financial obligations to the University. In the case of contract cancellation, the date of receipt of the written request for cancellation will determine, in part, the student’s financial obligation to the University (please see the Housing Contract for the current academic year for specific terms and cancellation dates).

**DINING COSTS**

The following meal plans are available. Prices and plans are subject to change. Prices shown are approved for the 2011-2012 academic year. Additional information can be found online at: aux.uncc.edu/mealplans.

<table>
<thead>
<tr>
<th>Meal Plans Available to All Students</th>
<th>Cost Per Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>19 meals per week with $100 declining balance</td>
<td>$1770</td>
</tr>
<tr>
<td>14 meals per week with $200 declining balance</td>
<td>$1770</td>
</tr>
<tr>
<td>12 meals per week with $300 declining balance</td>
<td>$1880</td>
</tr>
<tr>
<td>10 meals per week with $400 declining balance</td>
<td>$1880</td>
</tr>
<tr>
<td>150 block plan (any 150 meals during the semester) with $100 declining balance</td>
<td>$1505</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Meal Plans Available to Any Upperclassman or Commuters</th>
<th>Cost Per Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>125 block plan (any 125 meals during the semester) with $175 declining balance</td>
<td>$1430</td>
</tr>
<tr>
<td>Declining Balance Account of $1630, $1155, or $620</td>
<td>$1630, $1155, or $620</td>
</tr>
</tbody>
</table>

Any student may purchase or add additional Optional Dining Account funds to their 49er ID card. The Optional Dining Account is similar to the Declining Balance Meal Plan in that it is accepted as payment in all campus dining facilities and on-campus convenience stores and saves its users the 8.25% sales tax. This account is open to students, faculty and staff on campus. Customers using the Optional Dining Account at the concession counters during University sporting events are given a discount on their purchases. The Optional Dining Account can even be used to purchase catering services. Account balances can be checked or have funds added to it by visiting the 49er Card Office, located in the Auxiliary Services Building, or in the ID/Dining Services Office, located in the Cone University Center, or online at: https://uncc49ercard.blackboard.com.

**SPECIAL ASSESSMENTS AND OTHER FEES**

During the academic year of **2010-2011**, the following special assessments were charged to cover the cost of supplies or special materials:

<table>
<thead>
<tr>
<th>SPECIAL ASSESSMENTS PER SEMESTER</th>
<th>Type</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>International Student Fee (Students with visa type F or J)</td>
<td></td>
<td>$50</td>
</tr>
<tr>
<td>Student Continuing Registration Credit/Thesis per credit hour (Resident)</td>
<td></td>
<td>$143</td>
</tr>
<tr>
<td>Student Continuing Registration Credit/Thesis per credit hour (Non-Resident)</td>
<td></td>
<td>$653.25</td>
</tr>
<tr>
<td>School of Architecture General Student Fee</td>
<td></td>
<td>$40</td>
</tr>
<tr>
<td>College of Engineering Student Fee 1-7 hrs</td>
<td></td>
<td>$50</td>
</tr>
<tr>
<td>College of Engineering Student Fee 8 hrs or more</td>
<td></td>
<td>$100</td>
</tr>
<tr>
<td>College of Computing and Informatics Student Fee 1-7 hrs</td>
<td></td>
<td>$38</td>
</tr>
<tr>
<td>College of Computing and Informatics Student Fee 8 hrs or more</td>
<td></td>
<td>$75</td>
</tr>
<tr>
<td>Ensemble Course Fee (per course)</td>
<td></td>
<td>$50</td>
</tr>
<tr>
<td>Nursing Care of the Childbearing Family (NURS 3250)</td>
<td></td>
<td>$22.50</td>
</tr>
<tr>
<td>Nursing Care of Children (NURS 3260)</td>
<td></td>
<td>$22.50</td>
</tr>
<tr>
<td>Design and Coordination of Care (NURS 4450)</td>
<td></td>
<td>$58</td>
</tr>
<tr>
<td>Complex Illness &amp; Disease Management (NURS 4130)</td>
<td></td>
<td>$23</td>
</tr>
<tr>
<td>Psychiatric Mental Health Nursing (NURS 4120)</td>
<td></td>
<td>$23</td>
</tr>
<tr>
<td>Scuba Diving Fee (EXER 2219)</td>
<td></td>
<td>$60</td>
</tr>
<tr>
<td>Advanced Scuba Diving Fee (EXER 2220)</td>
<td></td>
<td>$35</td>
</tr>
<tr>
<td>Lifeguard Training (EXER 2212)</td>
<td></td>
<td>$10</td>
</tr>
<tr>
<td>Water Safety Instruction (EXER 2213)</td>
<td></td>
<td>$10</td>
</tr>
<tr>
<td>First Aid: Responding to Emergencies (ATRN/EXER 2290)</td>
<td></td>
<td>$20</td>
</tr>
<tr>
<td>Care &amp; Prevention of Athletic Injuries (ATRN/EXER 2295)</td>
<td></td>
<td>$30</td>
</tr>
</tbody>
</table>
APPLICATION FEE
A $65 application fee must be submitted with the application for admission. The fee is nondeductible and nonrefundable.

GRADUATION FEE
Each member of the graduating class is automatically charged a graduation fee of $57 (Bachelor or Certificate), $70 (Master's), and $83 (Doctoral) at the time of application for the degree and/or certificate. (Note: If a student needs to change their graduation term for any reason to a subsequent semester, they must resubmit an application for degree and/or certificate but will not be charged an additional fee.) If a student is earning more than one degree simultaneously, a graduation application must be submitted for each degree separately but will only be charged once. This fee includes the cost of the diploma/certificate, the cap and gown, and the hood for graduate degree students.

CREDIT BY EXAMINATION FEE
A written examination for a course will require a fee of $15. A laboratory examination requiring the arrangement of such things as laboratory materials will require a fee of $25. A combination of a laboratory and written examination will require a fee of $30.

TUITION SURCHARGE
Undergraduate students who take more than 140 credit hours (or more than 110 percent of the hours required to complete their baccalaureate degree program) are subject to a 50 percent tuition surcharge on the excess hours taken. However, the surcharge will not apply to students who exceed these credit hour limits while completing their degree within the equivalent of four academic years, or in the case of five-year programs, within the equivalent of five academic years.

MOTOR VEHICLE REGISTRATION FEES
parking.uncc.edu

Students attending UNC Charlotte are required to register their motor vehicle(s) in order to park on campus; there is no free parking. Vehicle registration for Fall and Spring semesters is available online. Students may check the Parking & Transportation Services website for updates or changes to this policy. Payment must be received before the permit is issued or mailed. Permits are required beginning at 8 a.m. on the first day of classes. For students, two categories of permits are issued: Resident (for students living on-campus) and Commuter (for students living off-campus).

Permits sold in August are good for one year. Students who graduate in December may return their parking permit for a pro-rated refund. The price of the permit is the same for faculty, staff and students. For 2010-2011 the annual rate for a resident or commuter student was $335. Please reference parking.uncc.edu for current fees for your academic year. Parking Services receives no state funding; therefore, parking fees are used to defray construction and operating expenses.

Night permits, valid only after 3 p.m., are sold at a reduced rate using the same schedule as the regular student permits. Students with night permits who come on campus before 3 p.m. must park and pay at the meters or in visitors’ spaces.

PENALTIES FOR PARKING VIOLATIONS
Violators of University parking regulations are subject to monetary penalties ranging from $10 to $250, depending on the severity of the violation. Copies of parking regulations are distributed with the parking permit. Additionally, citations enforced and penalties assessed can be found online at aux.uncc.edu/parking/citations.php. If a citation is not paid or appealed within 10 days, the penalty will be applied to the student’s account with the University. Subsequent registration may be withheld for non-payment. Parking citations are issued 24 hours a day. Permits and meters are enforced from 8 a.m. until midnight, Monday through Thursday, and from 8 a.m. until 3 p.m. on Friday.

Questions concerning parking on campus should be directed to Parking and Transportation Services at 704-687-0161, 8 a.m. - 5 p.m., Monday through Friday. Emergency situations and questions at other times should be directed to the Campus Police at 704-687-2200.
Refunds

A student who officially withdraws (drops all courses) from the University in the Fall or Spring semester will receive a refund as follows:

<table>
<thead>
<tr>
<th>Period of Withdrawal</th>
<th>Percent of Tuition and Fees Refunded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before 1st Class Day</td>
<td>100%</td>
</tr>
<tr>
<td>Period 1*</td>
<td>100% minus $25 withdrawal fee</td>
</tr>
<tr>
<td>Period 2*</td>
<td>100% minus $75 withdrawal fee</td>
</tr>
<tr>
<td>Period 3*</td>
<td>80%</td>
</tr>
<tr>
<td>Period 4*</td>
<td>75%</td>
</tr>
<tr>
<td>Period 5*</td>
<td>70%</td>
</tr>
<tr>
<td>Period 6*</td>
<td>60%</td>
</tr>
<tr>
<td>Period 7*</td>
<td>55%</td>
</tr>
<tr>
<td>Period 8*</td>
<td>50%</td>
</tr>
<tr>
<td>Period 9*</td>
<td>40%</td>
</tr>
<tr>
<td>After Last Period*</td>
<td>0%</td>
</tr>
</tbody>
</table>

*Generally, each period is one week in length; however, for specific dates of each period, please visit the Refunds Schedule located online under finance.uncc.edu/controllers-office/student-accounts/refunds.

SUMMER SCHOOL REFUNDS

A student who officially withdraws (drops all courses) from the University prior to the fifth class day of the Summer session will receive a 100% refund. Students who officially withdraw (drops all courses) from the University on the fifth class day of the Summer session or later will receive no refund. Please review the Refunds Schedule available online on the Student Accounts website above.

EXCEPTIONS

Charges are refundable by administrative action on a prorated basis for the unexpired portion of the term for the following reasons: death of the student, withdrawal for adequate medical reason as certified by the University Student Health Center or family doctor, death in the immediate family that necessitates student withdrawal, and dismissal or suspension from school. Immediate family is defined as wife, husband, parent, child, brother, sister, grandparent, and grandchildren, and includes step-, half- and in-law relationships. Appropriate documentation must be submitted to the Dean of Students.

APPEAL PROCEDURE

Sometimes a student experiences extenuating circumstances that warrants consideration of a refund. In such situations, the student can submit an appeal for refund consideration. The Appeal for Tuition, Housing, and Dining Refund Form can be found online at finance.uncc.edu/forms. The Registrar’s Office, Student Account’s Office, Housing, and other offices must then research the request thoroughly. In some cases, the appeal for a refund must be forwarded to the Tuition, Housing, and Dining Appeals Committee. If the request must be forwarded to the Committee, the student will be notified of the date and time of the meeting and offered the option to present the request in person. Once a decision has been made regarding the appeal, the student will be notified by mail.

The contract period for academic-year housing contracts is the entire academic year (Fall and Spring semesters). The student and/or guarantor agree to pay the full amount of charges for residential services. To cancel residential services, the student and/or guarantor must send a signed written request for cancellation of the contract to the Housing and Residence Life Office. The date of receipt of the written request for cancellation will determine, in part, the student’s financial obligation to the University (please see the Housing Contract for the current academic year for specific cancellation dates). If, during the time of the Contract, the student loses the right to live in University housing by reason of disciplinary action, or breach of the Contract, no refund of housing charges for the term will be made.

The contract period for Summer School coincides with each term of the Summer School calendar; housing charges are refundable based upon the number of weeks of occupancy.
Financial Aid

UNCFinaid.uncc.edu

UNC Charlotte administers financial aid without regard to race, color, national origin, religion, gender, sexual orientation, age, or disability.

The University offers a comprehensive program of student financial aid (scholarships, grants, loans, and part-time employment) to assist both graduate and undergraduate students in meeting educational expenses. Reasonable educational expenses include tuition and fees, room and board, books, supplies, transportation, miscellaneous personal expenses, and expenses related to maintenance of a student's dependents.

ELIGIBILITY
The programs of student financial aid are administered according to a nationally accepted policy that the family, meaning parents (or those acting in place of parents) and/or spouse, is responsible for a student's educational expenses. Therefore, eligibility for financial aid will be determined by a comparison of a budget (educational expenses as defined above) for the period of attendance with what the student's family can reasonably be expected to contribute.

A financial aid applicant will be considered for available assistance for which he/she is eligible if the student:

1) Completes the application process and related forms only after thoroughly reading all instructions.
2) Completes the admission application process and is accepted for enrollment at UNC Charlotte.
3) Is working toward a degree or certificate and not simply taking courses.

APPLICATION PROCESS
To apply for the following programs, a student must complete the Free Application for Federal Student Aid using the instructions provided online at fafsa.gov.

- University Loans
- University Need-Based Scholarships

*For undergraduate students only

RENEWAL PROCESS
Renewal of financial aid is based upon a student making satisfactory academic progress. The Free Application for Federal Student Aid is required each year that a student applies for financial aid.

FINANCIAL AID PROGRAMS

LOANS

FEDERAL PERKINS LOAN
Loans of up to $4,000 per year are made to students with the highest financial need who apply by the University's established priority date of April 1. The interest rate is 5.0% with repayment beginning nine months after graduation.

FEDERAL STAFFORD LOANS
Qualified undergraduate applicants may borrow up to $5,500 for the first year, $6,500 for the second year, and up to $7,500 per year for the remainder of undergraduate study. Graduate students may borrow up to $20,500 per year. Independent students may be eligible to receive additional loan amounts. As of this printing, the interest rate on new loans is currently 3.4%, and repayment begins six months after the borrower ceases to be a student.

SHORT-TERM EMERGENCY LOANS
Students may borrow up to $300 for unanticipated expenses that occur during the semester and up to $1,000 for tuition expenses. Loans have no interest and must be repaid within 30 to 60 days. Funds for these loans are provided by private donation and are limited.

GRANTS

FEDERAL PELL GRANTS
These grants are for undergraduate students and can range from $555 to approximately $5,500, based on the student's financial need. It is an entitlement program, meaning that any student who applies and is determined to be eligible will receive funds.

FEDERAL SUPPLEMENTAL EDUCATIONAL OPPORTUNITY GRANTS
These grants are for undergraduate students and range from $200 to $1,000. Eligibility is based on financial need and is determined within the UNC Charlotte Office of Student Financial Aid, with priority to lowest income students who apply by the University's priority date of April 1.

FEDERAL TEACH GRANTS
These grants are for undergraduate or graduate students enrolled in certain majors leading to
teaching licensure in high-need subject area at a school serving low-income students. The $4000 awards convert to Unsubsidized Federal Stafford Loans if the employment obligation is not met. A minimum GPA of 3.25 is required.

**UNC CAMPUS SCHOLARSHIPS**
Funding for this program is provided by the General Assembly of North Carolina to each constituent institution of the UNC system. These awards are for North Carolina residents only. These limited awards are provided to students with exceptional financial need who apply by the University’s priority date of April 1.

**UNC CHARLOTTE GRANTS**
UNC Charlotte administers several other grant programs funded by the State of North Carolina and requires North Carolina residency for consideration. These are available to both graduate and undergraduate students who apply by the established priority date of April 1.

**UNC NEED-BASED GRANTS**
These grants are available to undergraduate NC residents and are administered by the College Foundation, Inc. in Raleigh. All who complete the Free Application for Federal Student Aid are considered for awards.

**NORTH CAROLINA EDUCATION LOTTERY SCHOLARSHIPS**
These scholarships are available to undergraduate NC residents who demonstrate the most financial need as determined by the Free Application for Federal Student Aid and are administered by the College Foundation, Inc. The award amounts will vary depending on Federal Pell Grant eligibility.

**EMPLOYMENT**
Please see the Student Life, Resources, and Services section of this Catalog for details on off-campus and on-campus employment.

**OTHER ASSISTANCE**

**EDUCATION FOR THE VOCATIONALLY DISABLED**
Vocationally disabled students are eligible for aid provided by the North Carolina State Division of Vocational Rehabilitation. This aid takes the form of services that include vocational counseling and guidance and placement. Payment of expenses such as training, medical treatment, room and board, books, fees, and tuition may be available. A vocational rehabilitation officer is available in Charlotte for interviewing applicants. Appointments may be made by contacting Vocational Rehabilitation Services at 704-568-8804. Their offices are located at 5501 Executive Center Drive in Charlotte.

**VETERANS BENEFITS**
UNC Charlotte’s Veterans Service Office (VSO), located in the Office of the Registrar, works with the Veterans Administration to assist in administering the various programs of benefit to veterans or eligible relatives of veterans. The VSO Certifying Official certifies enrollment and transmits necessary credentials and information to the proper Veterans Administrative Office.

Admission to the University should be obtained before the student makes application for veteran’s benefits. Applicants must be accepted into a degree program to receive benefits.

In order to be eligible for the full monthly allowance under any of the above laws, an undergraduate student must be enrolled for 12 or more semester hours and a graduate student must be enrolled for nine or more semester hours. Those enrolled on a part-time basis will be eligible for part-time compensation. Students are responsible for reporting any change in enrollment status to the VSO Certifying Official.

For details about available programs, please visit registrar.uncc.edu/VA or call the VA's toll-free number at 1-800-827-1000.

**CHILDREN OF VETERANS**
The North Carolina Department of Veterans Affairs awards scholarships for the children of certain deceased or disabled veterans. Those awarded "full" scholarships are entitled to tuition, mandatory fees, board allowance, and room allowance; those awarded "limited" scholarships are entitled to tuition and mandatory fees. Written requests for benefits information may be directed to: VA Atlanta Regional Office, Post Office Box 100022, Decatur, GA 30031-7002 (telephone 888-442-4551).

Before the time of registration, each eligible student who wishes to enter the University should: (1) apply for admission following University procedures and (2) apply for a scholarship award to the North Carolina Department of Veterans Affairs.

**SCHOLARSHIPS**
finaid.uncc.edu/Scholarship-Index.html

UNC Charlotte offers a comprehensive program of undergraduate scholarships. Some of these are awarded entirely on the basis of merit, while others consider financial need as well. The University's major awards for merit are as follows:

**SCHOLARSHIPS**
The Levine Scholarships are UNC Charlotte’s most prestigious scholarships for merit. Established by the generous contributions of Leon and Sandra Levine, these four-year scholarships include full tuition, fees, room & board, a grant to implement a service project of the Scholar’s own design, and four summers of experiences that will develop leadership skills, social awareness, and an international perspective. The total value of this four-year package is estimated at $90,000 per in-state student and $137,000 per out-of-state student.
ALUMNI SCHOLARSHIPS
The Alumni Scholarships are awarded annually to continuing students of the University who have proven outstanding scholastic attainment, participated in University and/or community activities, and demonstrated campus leadership. The scholarships were established in 1978 to recognize outstanding full-time students and to encourage their continuing involvement and interest in the activities of the University. Information concerning the scholarships is distributed to each department and college within the University each year prior to the award and contains material outlining application procedures for the scholarships.

REESE A. OVERCASH SCHOLARSHIPS
The Reece A. Overcash Scholarships, another of UNC Charlotte’s prestigious scholarships for merit, was established by the Overcash family in honor and memory of Reece A. Overcash, a member of the first class at the Charlotte Center of the University of North Carolina. This merit-based award seeks to attract students who demonstrate academic excellence, leadership, and service to others.

C.C. CAMERON SCHOLARSHIPS
The C. C. Cameron Scholarships, established by First Union Corp., honor Mr. C. C. Cameron, who served as Chairman of First Union and as Chairman of the UNC Charlotte Board of Trustees. The purpose of the Cameron Scholars program is to bring outstanding students to UNC Charlotte. Recipients are selected on the basis of academic achievement, demonstrated leadership and service to others. Cameron Scholars are provided financial assistance and work experiences which encourage intellectual growth and stimulate the will to achieve full potential.

D.W. COLVARD SCHOLARSHIPS
The D. W. Colvard Scholarships honor the late Dr. Dean Wallace Colvard, first chancellor of The University of North Carolina at Charlotte, and his wife, Martha, who were instrumental in founding Friends of UNCC. Throughout the years, Dr. and Mrs. Colvard personified the quest for excellence at UNC Charlotte. The Colvard Scholarships are awarded to applicants on the basis of their achievements in high school, college aptitude tests, and their promise of making meaningful contributions to society. Their roles as leaders and their service to school and community are weighed carefully.

LLOYD C. & LUELLA L. DANIELSON SCHOLARSHIPS
The Lloyd C. and Luella L. Danielson Scholarships were established by the estate of Lloyd C. and Luella Danielson to attract students of good moral character and great potential to UNC Charlotte's Mechanical Engineering majors.

CAMERON MORRISON SCHOLARSHIPS
The Cameron Morrison Scholarships, first awarded in 1985, were established as a memorial to former Governor and Mrs. Cameron Morrison. The need-based scholarships recognize students who are public high school graduates from Mecklenburg County who seek self-improvement and demonstrate initiative and ability. Entering students ranking in the upper 10 percent of their high school graduating class are given preference.

BONNIE E. CONE SCHOLARSHIPS
The Bonnie E. Cone Scholarships have been endowed by Clara McKay (Mrs. Charles H.) Stone of Charlotte and other friends of Charlotte College. The scholarships honor the late Dr. Bonnie E. Cone, founder and developer of Charlotte College, from which UNCC Charlotte developed. The Bonnie E. Cone Scholarships are awarded annually to students having high moral character, proven scholastic attainment, and whose further education at the University will, in the judgment of the scholarship committee, enhance the citizenship of the recipients and advance the service of UNCC Charlotte as an institution of excellence.

R.L. STOWE SCHOLARSHIPS
The R. L. Stowe Scholarships were established in 1990 to honor R. L. Stowe who opened Belmont, North Carolina's first spinning plant, the Chronicle Mill, in 1901.

E.K. FRETWELL SCHOLARSHIPS
The E. K. Fretwell Scholarships were established in 1990 in recognition of Dr. E. K. Fretwell Jr., chancellor of UNC Charlotte from 1979 to 1989. The primary purpose of the awards is to attract students of great potential to the University. The scholarships' founders believe that such students stimulate and challenge fellow students and faculty members. Fretwell Scholarships are awarded to graduating high school seniors based on achievements in school, college aptitude test scores, service to school and community, potential for leadership, and for making meaningful contributions to society.

JOHN L. & MARGARET S. FRALEY SCHOLARSHIPS
The John L. and Margaret S. Fraley Scholarships were established in honor of John L. Fraley, Sr., retired Chairman of the Board and CEO of Carolina Freight, and his wife, Margaret, as a commitment to the continued strength of corporate America. The recipients must be North Carolina residents with majors within The Belk College of Business.
PROVOST SCHOLARSHIPS

The Provost Scholarships honor the position of the Provost of the University and are designed to attract students with great potential.

FAY AND CAL MITCHELL SCHOLARSHIPS

The Fay and Cal Mitchell Scholarships were established in 1974 for students representing academic excellence and an SAT score of at least 1100.

CLARA MCKAY STONE AND CHARLES H. STONE SCHOLARSHIPS

The Clara McKay Stone and Charles H. Stone Scholarships were established in 1986 and first awarded in 1987. Mr. and Mrs. Stone were early supporters and major benefactors of the University. Through their efforts the following were established: the Bonnie Cone Scholarships, the Charles H. Stone Professor of Chemistry, the Charles H. Stone Professors of American History, and the Charles H. Stone Collection of the University Library. The purpose of the Stone Scholarships is to provide scholarship assistance for worthwhile and deserving students and applicants for admission to the University who have high moral character and whose education at the University will better enable the recipients to live worthwhile and productive lives and to further the service of the University to society. The fund provides both merit awards and awards for students who are deserving, but may not have the ability for high academic attainment, and who are in need of financial assistance in order to further their education at the University.

J. MURREY ATKINS SCHOLARSHIPS

The J. Murrey Atkins Scholarships were established in 1963 in memory of J. Murrey Atkins, Sr., the first Chairman of the Board of Trustees at Charlotte College, which later became UNC Charlotte. The recipient must be a North Carolina resident.

REBECCA AND WALTER ROBERTS SCHOLARSHIPS

The Rebecca and Walter Roberts Scholarships were established in 1999. The Roberts Scholarships were established to honor Walter and Rebecca Roberts. The education of Rebecca Roberts, a 1998 UNC Charlotte graduate, and the other children of Walter Roberts was ensured by a trust fund established by the Superior Continental Corporation following Walter Roberts’ death. The remaining monies in the trust were generously donated to the University upon Rebecca Roberts’ graduation. The purpose of the Roberts Scholarships is to provide scholarship assistance to worthy non-traditional students pursuing a degree in Communication Studies. The Roberts Scholarships are awarded to applicants on the basis of their potential for success as Communication Studies majors.

Detailed information about the scholarships named above, including minimum qualifications, selection criteria, and the amount of the stipends, may be obtained online from the Office of Student Financial Aid Scholarship Division’s website at finaid.uncc.edu/Scholarship-Index.html.

NEED-BASED & DEPARTMENTAL SCHOLARSHIPS

Numerous other scholarships are administered by the Office of Student Financial Aid. In most cases, there is no special application for these scholarships, and all aid applicants will be considered unless the scholarship is noted as an exception. Normally, those students with demonstrated need and a grade point average of 3.5 or better will be considered for scholarships.
MISSION AND OBJECTIVES
The College of Arts + Architecture consists of four departments and one school, which share basic educational values and academic aspirations. The primary mission of the college is to provide programs that prepare graduates for careers as architects, artists, leaders, cultural administrators, and innovators in our emerging creative economy. The college draws together in a single academic unit disciplines with common histories, methods of inquiry, and potential for contributions to the community. It serves to enhance creative, professional, and cultural production within the University of North Carolina at Charlotte and to help lead the creative economy in the region and state. The college is responsive to both cross-cultural exchange and "crossover" research and programming and seeks to provide new connections to the public realm and new opportunities for community leadership. The arts and architecture have a long history of collaboration; they require analysis and interpretation of information and media; and they demand imagination regarding the realms of communication, technology, economic change, and diversity.

ORGANIZATION
The College of Arts + Architecture includes the School of Architecture and the Departments of Art and Art History, Dance, Music, and Theatre.

PROGRAMS
The College offers degree programs at the master’s and baccalaureate level including: Master of Architecture; Master of Urban Design; Bachelor of Arts degrees in Architecture, Art, Dance, Music, and Theatre; Bachelor of Art History, Bachelor of Fine Arts in Art, Bachelor of Architecture, and Bachelor of Music in Performance. The College also offers North Carolina K-12 teacher licensure undergraduate and graduate degree programs in Art, Dance, Music and Theatre, as well as an Undergraduate Certificate in Jazz and a Graduate Certificate in Violin. For details on graduate programs, please see the UNC Charlotte Graduate Catalog.

DEGREE REQUIREMENTS
Students in the College of Arts + Architecture must satisfy the requirements for the degree program(s) in which they are enrolled. Students should consult with their chosen department to make certain they fully understand all degree requirements.

Foreign Language Requirements
All students who earn a degree within the College of Arts + Architecture are required to demonstrate proficiency in the language of their choice through the 1202 level. Proficiency can be demonstrated in the following ways: (1) completing the required coursework at UNC Charlotte; (2) completing three years of the same foreign language in high school through level three; (3) achieving a satisfactory score on the foreign languages placement test; (4) through approved transfer or transient credit earned at other accredited institutions; (5) a combination of the above methods (e.g., placing out of or earning transfer or transient credit for 1201 and completing the 1202 course, completing 1201 and placing out of or earning transfer or transient credit for 1202).
School of Architecture

MISSION
The mission of the School of Architecture (SoA) is to further the discourse between the theory and practice of architecture through the education and training of students, the work and research of the faculty, and ongoing engagement with the University, the profession, and the community. Architecture in the narrow sense includes important public monuments and, in the broader sense, the constructed environment at all scales.

Undergraduate admission to the School of Architecture is to the Four-Year Bachelor of Arts in Architecture—a pre-professional foundation degree that serves two primary academic tracks toward professional accredited degrees. “4+1”: The first track is the one-year Bachelor of Architecture degree (professionally accredited). “4+2”: The second track is the two-year Master of Architecture degree (professionally accredited), including further options for dual-degrees and post-professional graduate studies in Urban Design, Geography, and Business/Real Estate Development. Students who do not intend to pursue an accredited professional architecture degree may elect a modified undergraduate curriculum that allows greater academic flexibility.

Students who maintain a minimum grade point average (3.0 in architectural studies through the Fourth Year) are automatically recommended for acceptance into the undergraduate fifth-year Bachelor of Architecture program; students who maintain a minimum grade point average (3.25 in architectural studies through the Fourth Year) are automatically recommended for acceptance into the graduate Master of Architecture program. Students with an “automatic admit” to the BArch or MArch programs may enter the fall semester following completion of the B Arts degree program, or the subsequent academic year. Students who do not have minimum GPA in architectural studies for “automatic admit” must submit a separate application for admission to the fifth-year Bachelor of Architecture or the graduate Master of Architecture program.

ADMISSION TO THE SCHOOL OF ARCHITECTURE
All students must first apply and be accepted by the University. Following acceptance to the University, an application is then made to the School of Architecture by: 1) completion and submission of an SoA application; 2) an evaluation of this application by a faculty committee; 3) a personal interview of selected applicants, including a presentation of samples of their creative work; and 4) admissions decisions.

To prepare undergraduate students to become future community and architectural leaders, the School of Architecture seeks to provide both a liberal and a professional education based on a holistic view of the built environment. The studio/seminar sequence in the Core Program emphasizes both writing and making to introduce students to alternative and complementary methods of investigating design problems. The professional degree path in the Advanced Program culminates in a Comprehensive Architectural Project emphasizing self-direction and individualized instruction.

ACCREDITATION
The School of Architecture maintains accredited status through the National Architectural Accrediting Board, which reviews the curriculum, facility, faculty, and program resources annually. In addition, the NAAB conducts an intensive site visit every six years. The School has maintained full accreditation standards as prescribed by this board and includes the following requisite statement:

“In the United States, most state registration boards require a degree from an accredited professional degree program as a prerequisite for licensure. The National Architectural Accrediting Board (NAAB), which is the sole agency authorized to accredit U.S. professional degree programs in architecture, recognizes three types of degrees: the Bachelor of Architecture, the Master of Architecture, and the Doctor of Architecture. A program may be granted a 6-year, 3-year, or 2-year term of accreditation, depending on the
extent of its conformance with established educational standards.

Master’s degree programs may consist of a pre-professional undergraduate degree and a professional graduate degree that, when earned sequentially, constitute an accredited professional education. However, the preprofessional degree is not, by itself, recognized as an accredited degree."

**BACHELOR OF ARTS IN ARCHITECTURE**

The undergraduate Bachelor of Arts in Architecture is a pre-professional foundation degree, which requires 128 credit hours. Students who wish to become registered architects must also earn a professional accredited degree—either a 1-year Bachelor of Architecture (128+30 credit hours) or a 2-year Master of Architecture (128+56 credit hours).

**CORE PROGRAM**

All students in the School complete a three-year core sequence of courses designed to provide a solid understanding of fundamental issues, knowledge, and skills in architecture. These courses include a series of coordinated studios, skill-building workshops and seminars, a four-semester sequence of architectural history (three survey courses and one history topic elective), and four courses in building technology (one course in Architectural Materials, two courses in Structures, and one course in Environmental Control Systems).

**ADVANCED PROGRAM**

Students begin the Advanced Program in their fourth year of study. The Advanced Program presents opportunities for greater depth of inquiry, breadth of understanding and synthesis through architectural design and electives. In the Fourth Year, various topical design studios are offered which permit specific focused study in areas such as: digital design, urban and community design, tectonic issues, lighting and energy use, landscape and site, and contemporary issues in architectural design.

**Curriculum: Bachelor of Arts in Architecture/ Bachelor of Architecture**

### First Year (Core Program)

#### Fall Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 1101 Arch Design Studio 1</td>
<td>5</td>
</tr>
<tr>
<td>ARCH 1601 Recording Observations</td>
<td>2</td>
</tr>
<tr>
<td>MATH 1103</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 1101</td>
<td>3</td>
</tr>
<tr>
<td>Life or Physical Science</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Spring Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 1102 Arch Design Studio 2</td>
<td>5</td>
</tr>
<tr>
<td>ARCH 1602 Components of Form</td>
<td>2</td>
</tr>
<tr>
<td>MATH, STAT or PHIL</td>
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</tr>
<tr>
<td>ENGL 1102</td>
<td>3</td>
</tr>
<tr>
<td>LBST 2211, 2212, 2213, 2214, or 2215</td>
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</table>

### Second Year (Core Program)

#### Fall Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 3601 Writing Architecture (W)</td>
<td>3</td>
</tr>
<tr>
<td>ARCH 4201 Architectural History I</td>
<td>3</td>
</tr>
<tr>
<td>ARCH 4301 Material and Assembly Principles</td>
<td>5</td>
</tr>
<tr>
<td>LBST 2101</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 1101 with Lab (Physical Science)</td>
<td>4</td>
</tr>
</tbody>
</table>

#### Spring Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 2102 Arch Design Studio 4</td>
<td>5</td>
</tr>
<tr>
<td>ARCH 4202 Architectural History II</td>
<td>3</td>
</tr>
<tr>
<td>ARCH 4302 Environmental Systems Principles</td>
<td>3</td>
</tr>
<tr>
<td>LBST 1101, 1102, 1103, 1104, or 1105</td>
<td>3</td>
</tr>
<tr>
<td>Social Science</td>
<td>3</td>
</tr>
</tbody>
</table>

### Third Year (Core Program)

#### Fall Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ARCH 3101 Arch Design Studio 5</td>
<td>5</td>
</tr>
<tr>
<td>ARCH 4303 Structural Principles</td>
<td>3</td>
</tr>
<tr>
<td>ARCH 4604 Computational Methods</td>
<td>3</td>
</tr>
<tr>
<td>LBST 2102</td>
<td>3</td>
</tr>
<tr>
<td>General Elective</td>
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#### Spring Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 3102 Arch Design Studio 6</td>
<td>5</td>
</tr>
<tr>
<td>ARCH 3601 Writing Architecture (W)</td>
<td>3</td>
</tr>
<tr>
<td>ARCH 4050 Architectural Elective</td>
<td>3</td>
</tr>
<tr>
<td>ARCH 4304 Structural Systems</td>
<td>3</td>
</tr>
</tbody>
</table>
### Bachelor of Arts in Architecture = 128 hours

**Alternative:** Students who do not intend to pursue an accredited professional degree (the BArch or MArch) may complete a modified version of the above curriculum to earn a non-pre-professional version of the Bachelor of Arts in Architecture. This alternative allows greater academic flexibility for students to augment their Core Program architectural studies with coursework from other University departments, allowing double major or minor in other disciplines, or prepare to pursue graduate studies in related fields (such as planning, urban design, landscape architecture, or architectural history). This alternative path requires 128 credit hours, and includes the above curriculum except for the following courses (marked with *): ARCH 4304, ARCH 4101, ARCH 4102, and two ARCH 4050 electives. To complete the credit hour requirements for the degree, students must substitute 19 credit hours of coursework in other areas to replace these credits.

**BACHELOR OF ARCHITECTURE (Professional Accredited Degree)**

Students who complete the pre-professional four-year Bachelor of Arts in Architecture, including all requirements outlined above, are eligible for admission into the fifth-year Bachelor of Architecture degree program. The Fifth Year is composed of a two-semester sequence of two linked studios which focus on an individual Comprehensive Architectural Project involving design research and development. The Fifth Year also includes one technology course (Building Systems Integration), one course in Professional Practice, as well as architecture and general electives.

The Bachelor of Architecture curriculum at UNC Charlotte includes the four-year Bachelor of Arts in Architecture curriculum outlined above, plus an additional year with the following curriculum:

### Bachelor of Architecture: 128 + 30 = 158 hours

The School also offers a fifth-year Bachelor of Architecture program for students who have an architectural or environmental design degree from another NAAB accredited institution. Following an assessment of student performance criteria for equivalence with the UNC Charlotte program, students are required to complete a minimum of 30 credit hours, including 12 hours of architectural studio and 18 hours of other architectural courses. Students entering the fifth-year Bachelor of Architecture program from other architecture programs who have curriculum deficiencies will be required to complete additional coursework and credit hours. No transfer credit is accepted for this program.

### ACADEMIC STANDARDS

The following are specific academic standards for each degree program:

**BACHELOR OF ARTS IN ARCHITECTURE DEGREE**

One grade of D in a studio is permissible. A second grade of D or F in a subsequent studio will require repeating the course. A student may not repeat a course more than once. Successive D and/or F grades will result in suspension from the Architecture program.

To graduate with a Bachelor of Arts in Architecture degree, an overall grade point average of 2.0 must be
A grade achieved in all courses offered by the School.

A student may not repeat a course more than once. Students are permitted one opportunity to repeat any architecture course. Earning a grade of F in the same course twice will result in suspension from the Architecture program.

**BACHELOR OF ARCHITECTURE DEGREE**

A grade of C is the minimum passing grade in both Fifth Year studios, ARCH 4103 and 4104. A grade of D in ARCH 4103 prohibits a student from entering ARCH 4104; a grade of D in ARCH 4104 prohibits a student from graduating. Courses for which a grade of D is received must be taken again; any student receiving less than a grade of C when repeating a studio course will be suspended from enrollment in the SoA.

A grade of F in either ARCH 4103 or 4104 requires a student to reapply to the 5th year program.

To graduate with a Bachelor of Architecture degree, all students must maintain an overall grade point average of 2.5 in Fifth-Year coursework offered by the School.

Students who are suspended from the University due to deficiencies in their academic performance will also be suspended from the Architecture program. If a student is readmitted to the university, they are not automatically readmitted into the Architecture program; they must appeal to the School of Architecture for reinstatement. Students who are readmitted to the university under the “Two-Year Rule” or the “Associates Degree Rule” must also appeal to the School of Architecture for reinstatement into the architecture program.

**Architectural Electives**

These courses provide opportunities for topical study of issues current and historic to architectural practices: theoretical concerns, urban design, landscape, representation, building technology, digital practice and fabrication, environmental issues, community practice, and constructional/making concerns.

Many electives are organized around the following four themes or concentrations:

1) **Architectural Design, Theory, & Practice**

   This concentration focuses on a sophisticated and detailed study of building and site design arising from the re-presentational methods intrinsic to architecture. The areas of focus include: graphic description, historical and/or theoretical inquiries, as well as digital design and fabrication. This concentration includes both investigation and criticism of contemporary practice and practitioners as it pertains to the understanding, design, and making of architecture.

2) **Urbanism**

   This concentration focuses on the critical role of architecture in the city -- the processes and specific intents of physical interventions in urban landscapes and infrastructures. Through the design of groups of buildings as well as larger scale urban areas, issues of policy, politics, finance, planning, place, and culture are introduced as part of the essential conception and history of the city fabric.

3) **Architectural Technology**

   This concentration focuses on emerging issues of sustainable design and the development of innovative building envelopes and systems that utilize both new and traditional materials, technology, and construction methods. Seeking to explore the historical as well as contemporary realms of thermal, tactile and visual issues of architectural technology, students address appropriate material selection, methods of daylighting, and passive and active systems for heating and cooling with consideration of both qualitative and quantitative outcomes.

4) **Digital Design, Fabrication, and Visualization**

   This concentration focuses on computation as it affects materiality, process, and interaction. Work in this concentration will focus on the responsible material constraints of digital manufacturing techniques, the way in which our methodologies are affected by the way we use computation, and the ways in which technology is changing the expectations for interaction in our designed spaces and urban conditions.

**Independent Studies**

When appropriate, a student may earn credit by pursuing a self-directed, faculty-approved study of a particular, significant architectural topic or subject.
RESEARCH STUDIES
A student may earn credit through participation in directed faculty research projects.

GENERAL UNIVERSITY REQUIREMENTS AND DIRECTED ELECTIVES
Courses to meet the University’s General Education requirements and elective studies are included in a student-selected, advisor-approved plan of study.

FOREIGN LANGUAGE REQUIREMENT
All students who earn a degree in the School of Architecture are required to demonstrate proficiency in the language of their choice through the 1202 level.

Proficiency can be demonstrated in the following ways: (1) completing the required course work at UNC Charlotte; (2) completing three years of the same language in high school through level three; (3) achieving a satisfactory score on the foreign languages placement test; (4) through approved transfer or transient credit earned at other accredited institutions; or (5) a combination of the above methods (e.g., placing out of or earning transfer or transient credit for 1201 and completing the 1202 course, completing 1201 and placing out of or earning transfer or transient credit for 1202).

ADVISING
The advising program consists of two tiers: Staff Academic Advisor (Core Program advising) and Associate Director (Advanced Program advising).

EDUCATION ABROAD PROGRAMS
The School conducts international field-study summer programs in a range of countries including, but not limited to, Italy, Spain, Portugal, Switzerland, Eastern Europe and China. In addition, exchange arrangements exist through the Office for International Programs for students to study architecture for one or two semesters at: University of Copenhagen (Denmark); Kingston University (London, England); Lund Institute of Technology, (Lunds, Sweden); University of Technology, (Delft, Netherlands); Tongji University, (Shanghai, China), The University of Applied Science, (Aachen, Germany); Royal Danish Academy of Fine Arts, (Copenhagen, Denmark); and the Henry van de Velde Institute (Antwerp, Belgium).

Department of
Art and Art History
art.uncc.edu

Chair: E. Hudson
Associate Chair: J. Franki
Professor: R. Strassberg
Lecturers: M. Bergmann, K. Bryant, K. Hoover, A. Kluttz, K. Rothrock, M. Simpson, D. Wall, J. Wallace
Academic Advisor: M. Garner
Undergraduate Education Coordinator: M. Bergmann

DEGREE PROGRAMS

MAJORS
The Department of Art and Art History offers a diverse and comprehensive program leading to a Bachelor of Fine Arts, a professional degree in studio art, a Bachelor of Arts, a liberal arts degree in studio art, and a Bachelor of Art History. Students pursuing the Bachelor of Fine Arts are required to select a studio concentration in ceramics, cross disciplinary, digital media, fibers, graphic design, illustration, painting, photography, print media, or sculpture. The department offers K-12 teacher licensure with the B.F.A. in Art or the B.A. in (studio) Art, which will require additional credit hours.

MINORS
Students may earn minors in Art Education (K-12 teacher licensure) and Art History.

COURSE REQUIREMENTS
The degree programs are structured upon the following premises:

- Students need a basic level of skill and aesthetic sensitivity in a variety of studio disciplines.
- Students need an awareness of the common core of historical and theoretical knowledge in the arts.
- Students need in-depth knowledge to critically synthesize formal and conceptual aspects of work in a specific area of study.
Studio Art courses are open to Art majors only. Most Art History courses are open to any major. Students must receive a grade of C or above in all courses applied to the major or minor. Students cannot advance to the next course in a sequence until a grade of C or above is earned in prerequisite courses. Students seeking admission to Art or Art History majors must have a cumulative GPA of 2.5. A GPA of 2.5 (in major courses only) is required for graduation.

Students intending to earn either studio degree should take three ARTB 120x courses, one ARTH course (ARTH 1211, 1212, or 2110), and ENGL 1201 in the first semester of their Freshman year. All of the General Education courses should be organized around the Art requirements. It is usually not possible to graduate in four years without taking this number of Art courses right away. Prerequisite sequencing dictates the time to graduation and all students should become thoroughly familiar with course descriptions in the UNC Charlotte Undergraduate Catalog.

All transfer courses are automatically reviewed by the Office of Undergraduate Admissions. Students seeking to appeal the official transfer designations for ARTx courses, must provide the Department Academic Advisor with copies of the official course descriptions and a syllabus for each course requested for consideration. Portfolios of creative work from each of the individual studio courses may also be required.

ACADEMIC ADVISING

All Art and Art History majors are required to meet with the Academic Advisor in the Department of Art and Art History each semester. Students will not be able to register for any course at UNC Charlotte without attending the mandatory advising meetings. The Academic Advisor is available year-round.

Career mentoring in studio, art history, and art education is offered by individual faculty members who are active professionals in those areas of study. Contact is best done by email or telephone. Most professors are available for appointments from the first day of classes until the last day of classes each Fall and Spring semester. Requirements for degrees and minors, as well as 4-year B.F.A. calendars are available in the department office and online at art.uncc.edu.

Students seeking to confirm that General Education graduation requirements are met should use the automated CAPP Degree Evaluation system online in 49er Express (49erexpress.uncc.edu). Those seeking confirmation of Art requirements must contact the Academic Advisor.

BACHELOR OF ARTS IN ART (B.A.)

The B.A. in Art is a 39 semester hour program recommended for those interested in a double major, or for those intending to pursue a career in a discipline other than art. It is not intended for students interested in an in-depth study in a single studio area. A cumulative GPA of 2.5 is required for admission. A GPA of 2.5 in the major is required for graduation.

All studio students must apply for Art major status by submitting a portfolio of work to the department. Portfolios are reviewed once per year in February. Students cannot take any studio course without having Art major status. All studio students, even those seeking the B.F.A. degree, begin in the B.A. program.

Students pursuing this degree may also pursue K-12 Teacher Licensure by completing the Minor in Art Education. The licensure program requires additional Art, Art Education, and Education courses. Students must apply separately to the major and to the Teacher Education program, which is administered jointly by the Department of Art and Art History and the College of Education.

REQUIREMENTS FOR B.A. IN ART

BASIC FOUNDATION STUDIOS (12 credits)
All 4 courses are required
ARTB 1201 2D Design (3)
ARTB 1202 3D Design (3)
ARTB 1203 Drawing 1 (3)
ARTB 1206 Conceptual Practices (3)

ELECTIVE STUDIO COURSES (15 credits)
Students should select five of the following 2000/3000-level studio courses. At least 9 of these credits must be taken at UNC Charlotte.

ARTx any 2000-level 2D studio course (ARTB 1205 Figure Drawing is also an option)*
ARTx any 2000-level 3D studio course**
ARTx any 2000- or 3000-level studio course
ARTx any 2000- or 3000-level studio course
ARTx any 2000- or 3000-level studio course

*Options for 2000-Level 2D Courses:
ARTD 2139 Drawing 2
ARTG 2180 Graphic Design Methods
ARTG 2181 Graphic Design 1
ARTL 2186 Illustration 1

**Options for 2000-Level 3D Courses:
ARTM 2105 Digital Media 1
ARTP 2131 Painting 1
ARTR 2161 Print Media: Serigraphy, Relief and Mixed Media
ARTR 2162 Print Media: Intaglio Methods
ARTT 2191 Photo Media 1
**Options for 2000-Level 3D Courses:**

**Ceramics (ARTC)**
- Option 1:
  - ARTC 2171  Ceramics Handbuilding
  - ARTC 3171  Ceramic Sculpture
  - ARTC 3273  Ceramic Studio 3

- Option 2:
  - ARTC 2172  Ceramics Wheel 1
  - ARTC 3172  Ceramics Wheel 2
  - ARTC 3273  Ceramic Studio 3

**Digital Media (ARTM)**
- ARTM 2101  Digital Media
- ARTM 3103  Digital Media 2
- ARTM 3105  Video Art

**Drawing (ARTD)**
- ARTB 1205  Figure Drawing 1
- ARTD 2139  Drawing 2
- ARTD 3134  Figure & Anatomy

**Fibers (ARTF)**
- ARTF 2151  Fibers 1
- ARTF 3352  Fibers 2: Surface Design 1
- ARTF 3353  Fibers 3: Constructed Textiles 1

**Graphic Design (ARTG)**
- ARTG 2180  Graphic Design Methods
- ARTG 2181  Graphic Design 1
- ARTG 3183  Graphic Design 2

**Illustration (ARTL)**
- ARTL 2186  Illustration 1
- ARTL 3186  Illustration Media and Methods
- ARTB 1205  Figure Drawing 1

**Painting (ARTP)**
- ARTP 2131  Painting 1
- ARTP 3161  Mixed Media: Works on Paper
- ARTP 3131  Abstract Painting

**Photo (ARTT)**
- ARTT 2191  Photographic Media 1
- ARTT 3191  Camera & Light
- ARTT 3190  Digital Photography

**Print Media (ARTR)**
- ARTR 2161  Print Media: Serigraphy, Relief & Mixed Media
- ARTR 2162  Print Media: Intaglio Methods
- ARTR 3162  Print Media 3

**Sculpture (ARTZ)**
- ARTZ 2141  Sculpture 1: Why Sculpture
- ARTZ 3142  Sculpture 2: Object vs. Event
- ARTZ 3243  Sculpture 3: Content

**ART HISTORY (9 credits)**
- All 3 courses are required
- ARTH 1211  Art History Survey 1
- ARTH 1212  Art History Survey 2
- ARTH 2110  Contemporary Art History

**SENIOR SEMINAR**
- Students should take their last Elective Studio
- ARTA 4600  Senior Seminar

This Senior level course should be taken during your last one or two semesters of study at UNC Charlotte. Because you assemble your professional portfolio in Senior Seminar, you want to include only your best work. Senior Seminar fulfills one of the two Writing Intensive requirements in General Education, as well as the Oral Communication requirement.

**BACHELOR OF FINE ARTS WITH A STUDIO CONCENTRATION (B.F.A.)**

This degree provides in-depth study in one or more concentration areas. A cumulative GPA of 2.5 is required for admission. A GPA of 2.5 in the major is required for graduation.

Because it requires 80 credits of courses in this department, and because many of the concentration courses are sequential, it is important to begin taking 2-3 studio courses and one art history course during the first semester of study. Do not complete the General Education courses before beginning the courses in the major. This will delay time to graduation. Four year schedules differ for each concentration and are available online or in the departmental office.

Art majors in the BA studio program apply to the BFA degree program by taking and passing a 1 credit course (ARTA 3201). During the class, students assemble another portfolio of work and written documentation, which they later submit to the BFA Review Committees. Students may not take advanced studio courses without having passed this course and gained acceptance into the BFA program.

**CONCENTRATION AREAS**

- ARTC  Ceramics
- ARTF  Cross Disciplinary (pre-approval required)
- ARTM  Digital Media
- ARTF  Fibers
- ARTG  Graphic Design
- ARTL  Illustration
- ARTP  Painting
ARTT Photography
ARTR Print Media
ARTZ Sculpture

REQUIREMENTS FOR B.F.A. IN ART

BASIC FOUNDATION STUDIOS (15 credits)
All 5 courses are required
ARTB 1201 2D Design
ARTB 1203 Drawing I
ARTB 1202 3D Design
ARTB 1205 Figure Drawing
ARTB 1206 Conceptual Practices

INTRODUCTORY STUDIOS (15 credits)
All 5 courses are required
These studios consist of the introductory 2000-level courses in each concentration area. Students must take a total of 5 courses. Two of the courses must be from a two-dimensional area and two must be from a three-dimensional area. The fifth course may be from either area, depending on the student’s discipline. Certain courses are mandatory for each concentration, and each concentration requires different courses. See below for details.

All 2000-level courses have prerequisites of certain Basic Foundation Studios. The 2000-level courses are prerequisites for 3000- and 4000-level courses. Make sure to check the prerequisites and course descriptions for each course.

Specific Introductory Studio Requirements for Each Concentration Area

CERAMICS
1) ARTC 2171 Ceramic Handbuilding and
2) ARTC 2172 Ceramic Wheel and
3) ARTZ 2141 Sculpture I and
4) 1 course from any of these areas: ARTD, ARTG, ARTL, ARTM, ARTP, ARTR, ARTT and
5) 1 more course from a different area: ARTD, ARTG, ARTL, ARTM, ARTP, ARTR, ARTT

CROSS DISCIPLINARY (See Academic Advisor)

DIGITAL MEDIA
1) ARTM 2105 Digital Media and
2) ARTM 2104 Installation Art and
3) 1 course from ARTC or ARTE and
4) 1 more course from any of these areas: ARTD, ARTG, ARTL, ARTM, ARTP, ARTR, ARTT and
5) 1 more course from any of these areas: ARTC, ARTD, ARTE, ARTF, ARTG, ARTL, ARTM, ARTP, ARTR, ARTT

FIBERS
1) ARTF 2151 Fibers and
2) ARTF 2257 Mixed Media Book Arts & Papermaking and
3) ARTR 2161 Print Media: Serigraphy, Relief, Mixed Media and
4) 1 more course from any of these areas: ARTD, ARTG, ARTL, ARTM, ARTP, ARTR, ARTT and
5) 1 more course from any of these areas: ARTD, ARTE, ARTG, ARTL, ARTM, ARTP, ARTR, ARTT

GRAPHIC DESIGN
1) ARTG 2180 Graphic Design Methods and
2) ARTG 2181 Graphic Design I and
3) ARTM 2105 Digital Media and
4) 1 course from any of these areas: ARTC, ARTE, ARTZ and
5) 1 more course from a different area: ARTC, ARTE, ARTZ

ILLUSTRATION
1) ARTL 2186 Illustration I and
2) ARTD 2139 Drawing II and
3) 1 course from any of these areas: ARTC, ARTE or ARTZ and
4) 1 more course from any of these areas: ARTC, ARTE, ARTZ and
5) 1 more course from any of these areas: ARTC, ARTE, ARTZ

PAINTING
1) ARTP 2131 Painting I and
2) ARTD 2139 Drawing II and
3) ARTR 2161 Print Media: Serigraphy, Relief, Mixed Media and
4) 1 course from any of these areas: ARTC, ARTE, ARTZ and
5) 1 more course from any of these areas: ARTC, ARTE, ARTZ

PHOTOGRAPHY
1) ARTT 2191 Photo Media I and
2) ARTM 2105 Digital Media and
3) 1 other course from any of these areas: ARTC, ARTE, ARTZ and
4) 1 other course from any of these areas: ARTC, ARTE, ARTZ and
5) 1 more course from any of these areas: ARTC, ARTD, ARTE, ARTG, ARTL, ARTM, ARTP, ARTR, ARTT, ARTZ

PRINT MEDIA
1) ARTR 2161 Print Media: Serigraphy, Relief, Mixed Media and
2) ARTR 2162 Print Media: Intaglio Methods and
3) ARTM 2105 Digital Media and
4) 1 course from any of these areas: ARTC, ARTE, ARTZ and
5) 1 more course from any of these areas: ARTC, ARTE, ARTZ

SCULPTURE
1) ARTZ 2141 Sculpture I: Why Sculpture and
2) ARTZ 2140 Installation I and
3) ARTM 2105 Digital Media and
4) 1 course from any of these areas: ARTD, ARTG, ARTL, ARTM, ARTP, ARTR, ARTT and
5) 1 more course from any of these areas: ARTC, ARTD, ARTE, ARTG, ARTL, ARTM, ARTP, ARTR, ARTT
ANY ART ELECTIVE (3 credits)
Students should take any one kind of course in this department (except ARTE 2121). Students may want to take an additional Introductory Studio. If an Art History course is selected, students will automatically earn a Minor in Art History, but they will need to submit a Change of Major/Minor form to the Office of the Registrar in order to reflect this on the student’s official record.

ADVANCED STUDIOS (6 credits)
Two studio courses are required at the 3000- or 4000-level. These courses have prerequisites at the 2000-level (or above). In addition to regular studio courses from any concentration area, you may choose a studio internship or independent study. Art History and Art Education courses do not count towards these requirements.

CONCENTRATION STUDIOS (21 credits)
Students must complete 7 advanced courses in their chosen concentration. They are specified below. Many of these courses are sequential and require BFA status as one of the prerequisites. Students will need to register for the BFA Portfolio Review course (ARTA 3201) simultaneously with the first 3000 level course in your concentration. Students should take the BFA Senior Exhibit course (ARTA 4601) and Senior Seminar simultaneously with the last Projects course in their concentration.

Requirements for Each Concentration Area

CERAMICS
1) ARTP 3131 Abstract Painting or ARTP 3161 Mixed Media or ARTZ 3142 Sculpture 2 or ARTF 3353 Fibers 3
2) ARTC 3171 Ceramic Sculpture or ARTC 3172 Ceramics Wheel 2
3) ARTC 3273 Ceramics 3
4) ARTC 3274 Ceramics 4
5) ARTC 4175 Ceramics 5
6) ARTC 4971 Ceramics Projects 1
7) ARTC 4972 Ceramics Projects 2

DIGITAL MEDIA
1) ARTZ 3104 Installation Art 2 or an extra-departmental course (see Coordinator of Digital Media)
2) ARTM 3101 Digital Art 2
3) ARTM 3103 Animation & Interactivity
4) ARTM 3105 Video Art
5) ARTM 3205 Interactive Art & Design
6) ARTM 4901 Digital Projects 1
7) ARTM 4902 Digital Projects 2

FIBERS
1) ARTR 3162 Print Media 3
2) ARTF 3352 Fibers 2: Surface Design 1
3) ARTF 3353 Fibers 3: Constructed Textiles 1
4) ARTF 3354 Fibers 4: Surface Design 2
5) ARTF 3355 Fibers 5: Constructed Textiles 2
6) ARTF 4951 Fibers Projects 1
7) ARTF 4952 Fibers Projects 2

GRAPHIC DESIGN
1) ARTM 3103 Animation & Interactivity
2) ARTM 3205 Interactive Art & Design
3) ARTG 3183 Graphic Design 2
4) ARTG 3184 Typography
5) ARTG 4180 Communications Design
6) ARTG 4181 Print Production
7) ARTG 4982 Graphic Design Projects

ILLUSTRATION
1) ARTD 3134 Figure & Anatomy
2) ARTL 3086 Topics in Illustration or ARTP 3161 Mixed Media
3) ARTL 3186 Illustration: Media/Method
4) ARTL 3187 Children’s Book Illustration
5) ARTL 3188 The Figure in Illustration
6) ARTL 3286 Illustration Sequence/Story
7) ARTL 4981 Illustration Projects

PAINTING
1) ARTH 3114 Art History Methods or ARTH 3100 Field Study in Visual Arts or ARTA 3801 Visual Arts Workshop or ARTR 3162 Print Media 3 or ARTD 3134 Figure & Anatomy or ARTT 3190 Digital Photography or ARTF 3352 Constructed Textiles 1
2) ARTP 3131 Abstract Painting
3) ARTP 3132 Figure in Painting
4) ARTP 3161 Mixed Media
5) ARTP 4931 Painting Projects 1
6) ARTP 4932 Painting Projects 2
7) ARTP 4933 Painting Projects 3

PHOTOGRAPHY
1) ARTM 3105 Video Art or ARTM 3205 Interactive Art & Design or ARTM 3103 Animation & Interactivity
2) ARTT 3190 Digital Photography
3) ARTP 3191 Camera & Light
4) ARTT 3391 Black & White Printing
5) ARTT 4291 Advanced Photo Media
6) ARTT 4991 Photography Projects 1
7) ARTT 4992 Photography Projects 2

PRINT MEDIA
1) Take 1: ARTM 3105 Video Art or ARTT 3190 Digital Photography or ARTP 3131 Abstract Painting or ARTF 3352 Fibers 2: Surface Design 1 or ARTF 3353 Fibers 3: Constructed Textiles 1
2) Take another 1: ARTM 3105 Video Art or ARTT 3190 Digital Photography or ARTP 3131 Abstract Painting or ARTF 3352 Fibers 2: Surface Design 1 or ARTF 3353 Fibers 3: Constructed Textiles 1
3) ARTR 3162 Print Media 3
4) ARTR 3263 Print Media 4
5) ARTR 4961 Print Media Projects 1
6) ARTR 4962 Print Media Projects 2
7) ARTR 4963 Print Media Projects 3

SCULPTURE
1) ARTZ 3104 Installation Art 2
2) ARTZ 3142 Sculpture 2
3) ARTZ 3243 Sculpture 3
4) ARTZ 3344 Sculpture 4
5) ARTZ 4941 Sculpture Projects 1
6) ARTZ 4942 Sculpture Projects 2
7) ARTZ 4943 Sculpture Projects 3

SENIOR SEMINAR (3 credits)
1 course required
Students must have Senior status and be in the last one or two semesters in the degree program in order to register for ARTA 4600. It should be taken with the last studio Projects course in the student’s concentration.

ART HISTORY (15 credits)
All 5 courses are required
ARTH 1211 Art History Survey 1
ARTH 1212 Art History Survey 2
ARTH 2110 Contemporary Art History
ARTH xxxx Any Art History course (ARTH 3393 for photography concentration)
ARTH xxxx Any Art History course

B.F.A. PORTFOLIO REVIEW (1 credit)
1 course required
Students should register for ARTA 3201 during the semester they take the first 3000-level course in their concentration. Students will prepare a portfolio of images and a written statement related to their concentration. Students will not be able to continue with advanced courses unless they pass this course.

B.F.A. SENIOR EXHIBIT (1 credit)
1 course required
Students should register for ARTA 4601 at the same time that they take the last Projects course in their concentration. All Seniors in the B.F.A. degree program must present a public exhibition of their work.

BACHELOR OF ARTS IN ART HISTORY

The B.A. in Art History is a 36 semester hour program. Students declare a Major in Art History by indicating this on the application to UNC Charlotte, or by filling out a Change of Major/Minor form to record Art History major status. There is no portfolio submission for this degree. A cumulative GPA of 2.5 is required for admission to this major. A GPA of 2.5 in the major is required for graduation. Matriculated and transfer students who do not meet requirements for admission to the program because of special circumstances may petition the Art History Faculty for acceptance into the program. Students seeking to apply course work taken at other institutions to the Art History major must provide copies of the official course description and a syllabus for each course requested for consideration.

REQUIREMENTS FOR B.A. IN ART HISTORY

CORE COURSES (12 credits)
4 required courses in Art History are required
ARTH 1211 Art History Survey I (Prehistoric to 1300 C.E.)
ARTH 1212 Art History Survey II (1300 to 1940)
ARTH 2110 Contemporary Art (1940-Present)
ARTH 3114 Art History Methods
--or--
ARTH 3115 Honors Art History Methods

Note: ARTH 1211 and 1212 are normally taken in the Freshman year; ARTH 2110 is normally taken in the Sophomore year or as soon as possible after declaring the major. ARTH 3114 or ARTH 3115 (taught simultaneously) may be taken when the other three core courses have been completed.

ELECTIVE COURSEWORK (18 hours)
- No more than 6 hours are at the 2000-level
- At least 3 hours are in Non-Western Art History
- At least 3 hours are in Ancient Art History (Prehistoric to 500 CE)
- At least 3 hours are in Medieval, Renaissance or Baroque Art History (500-1700 CE)
- At least 3 hours are in Recent Art History (1700 CE-Present)
- At Least 9 hours are at the 3000-level

2000-Level Elective Art History Courses
ARTH 2001 Topics in Art History
ARTH 2113 Arts of Africa, the Pacific & the Americas
ARTH 2140 Medieval Art
ARTH 2190 Art of the United States

3000-Level Elective Art History Courses in Non-Western Art
ARTH 3317 Maya Art
ARTH 3318 Mexico (Aztec) Art
ARTH 3319 Andean Art

3000-Level Elective Art History Courses in Ancient Art
ARTH 3320 Ancient Egypt and Near Eastern Art
ARTH 3322 Ancient Greek Art
ARTH 3323 Ancient Roman Art

3000-Level Elective Art History Courses in Medieval, Renaissance, or Baroque Art
ARTH 3349 Gothic Art
ARTH 3350 Northern Renaissance Art
ARTH 3351 Italian Renaissance Art
ARTH 3360 Northern Baroque Art

3000-Level Elective Art History Courses in Recent Art
ARTH 3100 Field Study in Visual Art
ARTH 3381 Modernism
ARTH 3393 History of Photography
ARTH 3394 Women and Art
Senior Seminar (3 credits)

One required course
Students majoring in Art History must complete one of the following courses:
ARTH 4601 Problems in Pre-Columbian Art History
ARTH 4603 Problems in Ancient Art History
ARTH 4605 Problems in Renaissance Art History
ARTH 4609 Problems in Recent Art History

RELATED WORK (3 credits)
Students majoring in Art History must complete one of the following courses:
AFRS 2105 Black Images in the Media
AFRS 2203 African-American Culture I
AFRS 2206 African Literature, Music and Art
AMST 3090 Topics in American Film
AMST 3100 Introduction to American Studies
ANTH 2050 Topics in Archaeology
ANTH 2122 Beliefs, Symbols and Rituals
ANTH 2151 Introduction to Archaeology
ARCH 4211 Architectural History I: Prehistory-1750
ARCH 4212 Architectural History II: 1750-Present
ENGL 2106 Film Criticism
GEOG 2100 Maps and Graphs
GERM 3160 Survey of German Film
HIST 2130 Introduction to Historic Preservation
HIST 2135 Introduction to Museums and Historic Sites
HIST 3010 History and Culture Through Film, Non-Western
HIST 3281 American Cities
LTAM 3360 Studies in Hispanic Film
PHIL 3225 Aesthetics
POSL 3104 Mass Media
RELS 3101 Greek Myths and Religions
RELS 3163 The Religious Art and Architecture of India
RELS 3212 Films and Identity
RELS 4127 Material Christianity
RUSS 3203 Russian Civilizations and Culture
SOCY 2112 Popular Culture
WMST 2110 Women and the Media
WMST 3150 Body Image

*Any other course must be preapproved by the Coordinator of Art History and the Department Chair

MINOR IN ART EDUCATION:
K-12 ART TEACHER LICENSURE

The Department of Art and Art History offers a program of Art and professional Education courses to prepare students for K-12 Teacher Licensure in North Carolina. Students accomplish this by completing 39 credits for the Minor in Art Education. Studio courses in the minor will also complete some requirements in the major. All students interested in K-12 teaching should contact the Coordinator of Art Education as soon as possible after acceptance to UNC Charlotte.

Students seeking an undergraduate degree with simultaneous licensure must be an Art major in the B.A. or B.F.A. degree programs. Licensure is not granted with the B.A. in Art History degree.

Students must apply separately for the Art Teacher Education Program, administered jointly by the Department of Art and Art History and the College of Education. Forms for the degree requirements and all other licensure requirements are available in the department office or online at art.uncc.edu.

STUDIO ART COURSES (9 credits)
a) ARTC 2171 Ceramics Handbuilding or ARTZ 2141 Sculpture I or ARTF 2151 Fibers
b) ARTM 2105 Digital Media or ARTR 2161 Print Media: Serigraphy, Relief, and Mixed Media
c) ARTP 2131 Painting I

ART EDUCATION COURSES (21 credits)
ARTE 2100 Introduction to Art Education (3)
ARTE 4121 Elementary Art Methods (3)
ARTE 4122 Secondary Art Methods (3)
ARTE 4467 Student Teaching in Visual Art (12)

PROFESSIONAL EDUCATION COURSES (9 credits)
EDUC 4290 Modifying Instruction for Learners with Diverse Needs (3)
EIST 4100 Computer Applications in Education (3)
SPED 2100 Introduction to Students with Special Needs (3)

PREREQUISITES FOR ADMISSION TO THE ART EDUCATION PROGRAM
• Admission to Art major
• ARTE 2100 with an earned grade of ‘B’ or above
• SPED 2100 Introduction to Students with Special Needs
• Passing scores of 522 or above for the total of the three scores on the individual sections of the Praxis 1 exams (reading, writing, math) or approved substitute scores from the SAT or ACT as shown in the table below
• Overall 2.5 GPA in at least 45 earned hours
• GPA of 2.75 in all Art and Education courses
• Recommendation from the Coordinator of Art Education
• Recommendation of the Education Advisor in the Office of Teacher Education Advising and Licensure

<table>
<thead>
<tr>
<th>TEST</th>
<th>SCORE</th>
<th>EXEMPTION ALLOWED</th>
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<tbody>
<tr>
<td>SAT</td>
<td>Total score = 1100</td>
<td>All Praxis 1 tests</td>
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<tr>
<td>SAT</td>
<td>Verbal score = 550</td>
<td>Praxis 1 tests in reading &amp; writing</td>
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<tr>
<td>SAT</td>
<td>Math score = 550</td>
<td>Praxis 1 test in mathematics</td>
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<tr>
<td>ACT</td>
<td>Total score = 24</td>
<td>All Praxis 1 tests</td>
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<tr>
<td>ACT</td>
<td>English score = 24</td>
<td>Praxis 1 tests in reading &amp; writing</td>
</tr>
<tr>
<td>ACT</td>
<td>Math score = 24</td>
<td>Praxis 1 tests in</td>
</tr>
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Students must be formally admitted to the Teacher Education Program before continuing with the following Education and Art Education courses:

ARTE 4121  Elementary Art Methods
ARTE 4122  Secondary Art Methods
ARTE 4467  Student Teaching in Visual Arts
EDUC 4290  Modifying Instruction for Learners with Diverse Needs in Elementary School
EIST 4100  Computer Applications in Education

PREREQUISITES FOR ADMISSION TO STUDENT TEACHING
Required of all candidates by the College of Education and Art Education program:

• Prior admission to Art Education program
• Overall GPA of at least 2.5
• A GPA of 2.75 and grades of C or above in the professional Education and Art courses
• Completion of all other coursework
• Recommendation from the Coordinator of Art Education
• Submission of application packet to Office of Field Experiences (OFE)

120 hours are needed to graduate. If a student is short of credits after completing all of his/her major, minor, and General Education requirements, he/she may add elective credits to make up the deficit.

MINORS IN STUDIO ART AND ART HISTORY

The Minor in Studio Art is currently suspended. Students with any major (except Art History) may earn an 18 credit hour minor in Art History. A GPA of 2.0 is required for admission. Students must earn a C or above in all courses applied toward the Minor in Art History. For details, see the Academic Advisor.

Students pursuing a Minor in Art History must seek permission from instructors to register for any course with an “Art major” prerequisite. Permission is granted at the discretion of the instructor and is not guaranteed.

REQUIREMENTS FOR THE MINOR IN ART HISTORY

• ARTH 1211  Art History Survey 1
• ARTH 1212  Art History Survey 2
• Any four more Art History courses

At least 12 of the credits towards the Minor in Art History must be taken at UNC Charlotte.

Department of Dance
dance.uncc.edu

Chair:  P. Sofras
Professors:  S. Huskey, P. Sofras
Associate Professors:  E.E. Balcos, K. Hubbard, D. Neil
Assistant Professors:  G. Alterowitz, D. Dragon, K. Jones

The Department of Dance awards Bachelor of Arts degrees in Dance and Dance Education. A minor in Dance is available, and North Carolina K-12 teacher licensure can also be earned. In conjunction with the College of Education, the department also offers graduate licensure in dance education.

In partnership with the professional dance company, North Carolina Dance Theatre, the department offers a Professional Training Certificate in Dance for advanced ballet training. Dance Majors may audition for this unique two-year certificate program.

MISSION STATEMENT
The Department of Dance provides innovation and leadership in the discipline through careful practices in performance, choreography, and teacher training that support the diverse perspectives of dance as a global art form.

PURPOSE AND GOALS
The Department of Dance provides students quality education in the art of dance, preparing them to become a part of a knowledgeable public that enjoys, supports, and participates in dance choreography, performance, and teaching. The overarching goal of the Department of Dance is to provide an exemplary broad-based instruction in dance that introduces students to diverse perspectives as they investigate the practice and theory of the art. The program is inclusive in that it serves dance majors, dance minors, public school dance licensure candidates, and elective students. As is consistent with the Mission of UNC Charlotte; the Department of Dance equips students with 21st century skills and training that allow them to pursue dance specific and/or related careers, as they commit to life-long learning and enjoy an enriched quality of life.

Our educational model is to discuss and explore in the classroom, then experiment in laboratory and rehearsal environments and, finally, to present our findings in the public forums of teaching and performance.
Faculty members are committed to the teaching and practice of dance, as they foster academic progress and artistic expression in an environment that respects cultural and artistic diversity. In addition, they contribute to the University, the community and their professions through scholarly/creative research and service.

The curricula include courses in dance technique, style, and choreography. Courses in dance history, anatomy, and writing for dance provide the theoretical foundation of the liberal arts degree. Specialized pedagogy courses with laboratory experiences are included in the dance education degree program which leads to K-12 teacher licensure in North Carolina.

Students complete their majors by taking the specific dance or dance education discipline core and selected elective courses. The electives can be focused in the student’s area of interest: performance, choreography, theory, or pedagogy. Specific course requirements and the attendance policy are listed on each course syllabus.

The department presents a performance season featuring a concert each Fall and Spring semester that includes original works choreographed by faculty and guest artists and/or stagings of master works of choreography. Each Spring, the department also sponsors a student-produced concert showcasing student choreography. Auditions are open to all members of the University community. Productions and classes are held in Robinson Hall which contains two performance spaces and specialized rehearsal, design, and construction laboratories, as well as additional classrooms and Department offices.

A major in Dance or Dance Education provides a liberal arts education. The skills and attributes developed in dance are essential to a professional arts career and they are applicable to all life endeavors. Motivation, concentration, self-confidence, creativity, flexibility, problem-solving, communication skills, and teamwork are enhanced through the study of dance.

Graduates may move directly into the profession as performers, choreographers, or teachers. They may also combine their dance backgrounds with complimentary fields such as kinesiology, psychology and business. More commonly, they seek advanced training in graduate programs or apprenticeships with professional organizations.

**BACHELOR OF ARTS IN DANCE**

A major in Dance leading to the B.A. degree consists of 48 semester hours including:

**20 hours in the Dance Core**
DANC 1209, 1210, 2209, 2210 (Ballet for Majors) (8)
DANC 1217, 1218, 2217, 2218 (Modern Dance for Majors) (8)
DANC 2226 Vintage Jazz Dance (2)
DANC 3210 Ballet for Majors III (2) or DANC 3218 Modern for Majors III (2)

**5 hours in Creative Process**
DANC 1280 Improvisation (2)
DANC 2216 Choreography (3)

**12 hours in Dance Theory**
DANC 2119 Anatomy for Dancers (3)
DANC 3221 Dance History I (3)
DANC 3222 Dance History II (3)
THEA 3250 Lighting Design I (3)

**3 hours in Dance Theory of Creative Practice**
DANC 3230 Choreography II (3) or DANC 4001 Ballet Pedagogy (3)

**4 hours in Performance and Production**
THEA 2401 Production Practicum (1)
DANC 2401 Dance Running Crew (1)
DANC 2402 Performance Practicum (1)
DANC 2402 Performance Practicum (1) or DANC 2401 Production Practicum (1)

**4 hours of Dance Electives**

Note: All of these courses must be completed with no more than one grade of D and a GPA of at least 2.5.

**MINOR IN DANCE**

A minor in Dance requires 22 semester hours including:

DANC 1212 Ballet I (2)
DANC 1214 Modern Dance I (2)
DANC 2401 Performance Practicum (1)
DANC 2401 Performance Practicum (1) (This choice is repeated for a total of 2 credit hours)
DANC Theory course (2 or 3)
Select from:
- LBST 1101 The Arts and Society: Dance (3)
- DANC 2228 Music for Dancers (2)
- DANC 2119 Anatomy for Dancers (3)
- DANC 4110 Writing for Dance (3)
- DANC History course (3)
- DANC 3101 Dance History I OR DANC 3102 Dance History II
- DANC 2226 Vintage Jazz Dance (2)
- DANC Electives (8 or 9)
DANCE EDUCATION (K-12)

The major in Dance Education leads to (K-12) teacher licensure. In addition to completing the coursework for the major in Dance, Dance Education students complete these professional education requirements:

- DANC 2228  Music and Dance
- DANC 4227/5227  Dance Education Methods I
- DANC 4227L/5227L  Elementary Clinical Experience
- DANC 4257/5227  Dance Education Methods
- DANC 4257L/5227L  Secondary Clinical Experience
- DANC 4467  Student Teaching/Seminar: K-12 Fine and Performing Arts
- EDUC 2100  Introduction to Education and Diversity in Schools
- EDUC 4290  Modifying Instructions for Learners with Diverse Needs in the Elementary School
- EIST 4100  Computer Applications in Education
- MDSK 3160  Learning and Development: Birth through Adolescence or MDLG 3130  The Early Adolescent Learner or ELED 3120  The Elementary School Child or SECD 4140  Adolescence and Secondary School
- READ 3255  Integrating Reading and Writing Across Content Areas
- SPED 2100  Introduction to Students with Special Needs

Students seeking dance licensure should plan to declare the dance education major by the end of the Sophomore year. A later decision to seek licensure may result in a delayed graduation date. A GPA of 2.75 is required for admission to student teaching. Licensure applications are the responsibility of the student and the Office of Student Academic Services in the College of Education.

PROFESSIONAL TRAINING CERTIFICATE IN DANCE

In conjunction with Charlotte's professional dance company, North Carolina Dance Theatre (NCDT), the University offers a Professional Training Certificate in Dance for advanced ballet students. The partnership provides the student an association with a professional dance company while earning a college degree. The sixteen credit hours earned in the Certificate are included in the requirements for the baccalaureate degree. Pre-college credit is also available to high school students.

Open by audition to a student in any major, the two-year Professional Training Certificate in Dance provides training with teachers at The North Carolina Dance Theatre School of Dance. Rehearsal and performance opportunities are available in addition to classes in ballet technique, pas de deux, pointe and variations. North Carolina Dance Theatre is an exceptional company whose Artistic Director, Jean-Pierre Bonnefoux and Associate Director, Patricia McBride, include both classical and contemporary works in the repertory.

- DANC 3201-3202  Professional Training Certificate in Dance (8)
- DANC 4201-4202  Professional Training Certificate in Dance (8)
Department of Music

Chair: R. Lumpkin
Anne Reynolds Belk Distinguished Professor of Music: D. Russell
Professor: R. Lumpkin
Associate Professors: W. Campbell, A Deeter, J. Grymes, R. Haldeman, L. Marks, J. Price, D. Savage, F. Spano
Assistant Professors: J. Allemeier, B. Arreola, M. Frisch, M. Hackett, J. Whitaker
Lecturer: R. Dior, J. Yost

The Department of Music provides a comprehensive education that produces artists, scholars, and educators who embody musical excellence and professional integrity. The curriculum stresses faculty-mentored individual study while emphasizing the opportunities of studying music in a research university setting. The city of Charlotte provides a vibrant cultural community that gives students numerous opportunities to experience, and even participate in, performances by resident professional ensembles such as the Charlotte Symphony Orchestra and Opera Carolina, as well as by a number of internationally recognized touring artists. The Department of Music itself hosts over 40 concerts every year, ranging from student concerts to faculty performances and visits by professional ensembles. Located in a state-of-the-art teaching and performance facility, the department offers majors and minors intensive professional programs in all wind, string, and percussion instruments, in addition to world-class studies in piano, voice, opera and musical theatre, choral music, and jazz. For more information, see music.uncc.edu.

A major in music offers students comprehensive training in education, performance, or liberal arts. Most music graduates move directly into the profession as teachers or performers, while others opt for advanced training in graduate programs or internships with professional organizations. A number of our alumni have used their undergraduate training as a foundation for other professions, including medicine and law.

All students who wish to major or minor in music must audition and complete a series of placement examinations prior to acceptance (see the “Admissions” link at music.uncc.edu for details). Each student majoring in music, regardless of degree plan or concentration, is required to take private lessons (Applied Music), perform in an appropriate principal ensemble, and take Recital and Concert Attendance every semester enrolled.* For specific degree requirements, including those for the Sophomore Review and the appropriate culminating experience(s), please review the Department of Music Student Handbook.

*These requirements are not applicable for music education majors during the semester they are enrolled in Student Teaching.

BACHELOR OF MUSIC (B.M.) IN MUSIC EDUCATION

The Bachelor of Music in Music Education degree is designed for students who are planning careers as public school music teachers. The program is divided into two areas of concentration: Choral/General Music (for vocalists who wish to become choral directors or general music educators) and Instrumental/General Music (for instrumentalists who wish to become band directors, orchestra directors, or general music educators). Both concentrations consist of 42 hours of General Education; 46 hours in the Core Music Curriculum, including private lessons, ensembles, music theory, ear training, piano, and music history; and approximately 40 hours of education courses that lead to a K-12 teaching license in the State of North Carolina. Most music courses require grades of C or above to progress to subsequent levels of study; all required music courses must be passed with grades of C or above to graduate. For specific course requirements and policies governing the Music Education program, refer to the Department of Music Student Handbook. The culminating experiences for this degree are a Senior recital and student teaching.

BACHELOR OF MUSIC (B.M.) IN PERFORMANCE

The Bachelor of Music in Performance degree is designed for students who are planning careers as performing musicians. The program is divided into two areas of concentration: Instrumental and Vocal, both of which consist of 42 hours of General Education; 46 hours in the Core Music Curriculum, including private lessons, ensembles, music theory, ear training, piano, and music history; and approximately 40 hours of specialized music courses,
including additional ensembles and courses in conducting, pedagogy, technology, and business. Most music courses require grades of C or above to progress to subsequent levels of study; all required music courses must be passed with grades of C or above to graduate. For specific course requirements and policies governing the Music Performance program, refer to the Department of Music Student Handbook. The culminating experiences for this degree are a Junior recital and a Senior recital.

**BACHELOR OF ARTS (B.A.) IN MUSIC**

The Bachelor of Arts in Music degree differs from a Bachelor of Music degree in that it is designed for students who want both intensive training in music and the opportunity to explore other areas of academic study. The curriculum consists of 34 hours of General Education, not included Foreign Language proficiency; 47 hours in the Core Music Curriculum, including private lessons, ensembles, music theory, ear training, piano and music history; 18 hours of a designated minor or second major; and 21 hours of electives and additional music courses. Most music courses require grades of C or above to progress to subsequent levels of study; all required music courses must be passed with grades of C or above to graduate. For specific course requirements and policies governing the B.A. in Music degree, see Appendix 3a, “Music (B.A.) and Music Performance (B.M.) Curriculum Guide;” for a list of minors and majors and their requirements, visit advisingcenter.uncc.edu. The culminating experience for this degree is an academic Senior project (see Section III.G, “Senior Project Requirements”).

**MINOR IN MUSIC**

The Minor in Music is designed for students who wish to study music while working towards a degree in another field. Music minors participate in ensembles, receive private lessons, and take introductory courses in music theory, ear training, and piano, as well as LBST 1103 (The Arts and Society: Music), which can also be used to satisfy a General Education requirement. The total unit requirement for the Minor in Music is 21 hours, all of which must be passed with grades of C or above to graduate with a Minor in Music. For specific course requirements and policies governing the Minor in Music, refer to the Department of Music Student Handbook.

**CERTIFICATE IN JAZZ**

The Undergraduate Certificate in Jazz is designed for instrumentalists who wish to enhance their undergraduate study with intensive training in jazz. It is available to instrumentalists in any of the three music degree tracks (B.A. in Music, B.M. in Music Education, and B.M. in Music Performance) who wish to supplement their required instruction in classical music with elective training in jazz.

The curriculum consists of 20 credit hours of jazz studies that combine instruction in performance and theory, including lessons, ensembles, improvisation, history, and a course in either arranging or pedagogy.

**ADMISSION**

Students may begin working towards the Undergraduate Certificate in Jazz at any point in their curriculum, but must complete the following requirements before being formally admitted into the Certificate program:

- A Sophomore Review (see the Department of Music Student Handbook for details)
- Both semesters of Jazz Improvisation (MUSC 2235 and MUSC 2236) with grades of B or above
- A juried audition

All jazz courses completed prior to formal admission into the Undergraduate Certificate in Jazz program (including lessons, ensembles, and improvisation classes) will subsequently be applied towards the certificate; however, they must be passed with a grade of B or above.

**COURSE REQUIREMENTS**

The Undergraduate Certificate in Jazz consists of 20 credit hours of coursework that combine training in performance and theory:

- MUPF 1111  Jazz Ensemble (1) (4 semesters)
- MUPF 1111L Jazz Ensemble Sectionals (0) (4 semesters)
- MUPF 1170  Jazz Combo (1) (2 semesters)
- MUPF 22xx  Applied Music: Jazz (1) (4 semesters)
- MUSC 2235  Jazz Improvisation I (2)
- MUSC 2236  Jazz Improvisation II (2)
- MUSC 4138  Jazz Pedagogy and Materials
  OR MUSC 4234  Jazz Arranging (3)
- MUSC 4298  Jazz History (3)

All courses must be passed with a grade of B or above to earn an Undergraduate Certificate in Jazz.
Department of Theatre

Chair: J. Vesce
Professors: B. Auerbach, A. Hartley, M. Pizzato
Associate Professors: D. Fillmore, J. Vesce
Assistant Professors: L. Bumgarner, A. Easterling, B. Murray, R. Witt
Lecturers: M. Howieson, K. Mizell-Ryan, J. Morong, H. O’Hare

MISSION
The Department of Theatre strives to inspire our students to expand their vision of the world and themselves through the study and practice of the craft of theatre, preparing them for leadership as practitioners, educators, and artists.

The mission is accomplished in a two-fold manner. First, we promote creativity, inquisitiveness, critical thinking, communication skills (oral and written), and cultural appreciation through the study of theatre. Second, we teach the specific craft of theatre-making through classroom experience, individual and collaborative study, and actualized stage productions, all emphasizing the particular skills necessary for the generation of high-quality stage performance. Students learn to participate in current critical discourse while engaging with the theory, history and material conditions of performance, and broaden their personal horizons as they encounter a range of ideas and issues – political, social, and aesthetic – through the unique art form which is theatre. The program thus creates a rigorous intellectual environment firmly rooted in the theatrical art form.

From this broad-based grounding in the fundamentals of the medium, students can then opt to specialize in one of the component subfields: history and theory, dramaturgy, playwriting, acting, directing, production, and design. In addition these fundamentals will also prepare students who so wish to specialize in theater education with the goal of obtaining a North Carolina teaching license. Throughout their training, students work both as faculty-mentored individuals and in collaborative groups, so that in addition to making significant contributions to the cultural life of the campus through departmental productions, they emerge ready for theatrical internships, graduate programs or for any profession which places value on independent thinking, confidence, and communication skills.

DEGREE PROGRAMS
The department awards the Bachelor of Arts degree in Theatre and Theatre Education. A minor in Theatre is available, and North Carolina K-12 teacher licensure can also be earned. In conjunction with the College of Education, the department also offers a Master of Arts in Teaching Theatre.

PRODUCTIONS
The department presents a season of mainstage and lab theatre (blackbox) productions as well as a second “shoestring” series of performances and events, classroom projects, student-driven works, and original collaborations. Auditions are open to all members of the University community. Productions and classes are held in Robinson Hall, which contains three performance spaces and specialized rehearsal, design, and construction laboratories, as well as additional classrooms and department offices.

BACHELOR OF ARTS IN THEATRE

A Major in Theatre leading to the B.A. degree consists of 50 semester hours including:

1) 32 hours in the departmental core:

- THEA 1140 The Theatre Experience (3)
- THEA 1201 Theatre Collaboration (3)
- THEA 1202 Introduction to Technical Theatre (3)
- THEA 2140 Play Analysis (3)
- THEA 2141 Dramaturgy I (3 (W)
- THEA 2200 Introduction to Design for the Stage (3)
- THEA 2201 Acting I (3) (O)
- THEA 2401 Production Practicum (1) (two of these)
- THEA 2402 Performance Practicum: Theatre (1)
  OR a third THEA 2401 Production Practicum (1)
- THEA 3130 Ancient and Medieval Theatre (3)
  OR THEA 3131 Renaissance Theatre (3)
- THEA 3132 17th to Early 20th Century Theatre (3) OR THEA 3133 Contemporary Theatre (3)
- THEA 3600 Junior Seminar (1)
- THEA 4600 Senior Project (1)

2) 18 hours of electives (THEA XXXX). Students may choose to follow a prescribed emphasis in Design and Production, Performance or Theatre Studies,
or create their own emphasis track. Of these electives, there must be at least one course in two out of the three areas of emphasis. Additionally, at least two of the courses must be at the 4000-level.

Students enrolled in the major are required to register for THEA 1600 (Majors and Minors Seminar) every semester. All of the above requirements must be completed with no more than one grade of D and a GPA of at least 2.5 in the major.

**BACHELOR OF ARTS IN THEATRE EDUCATION (K-12)**

**ADMISSION**

Students entering the Theatre Education Program will be admitted as Pre-Theatre Education (PTED). Students wishing to major in Theatre Education (TEDU) must be approved for admission to the major by meeting department and statewide teacher education program admission requirements. The criteria for admission include 45 earned credit hours, a GPA of 2.75 or above, a grade of C or above in MDSK 2100, passing scores on the SAT, ACT, or Praxis I tests, and the recommendation of their Theatre Education advisor. Students should apply for admission to the Theatre Education program during their Sophomore year, and they must complete the admissions process in order to enroll in any upper level education or Theatre Education courses at the 3000-level or above. Once students are admitted to the Theatre Education Program their major designation will change from PTED to TEDU.

The major in Theatre Education consists of 87 semester hours and leads to (K-12) teacher licensure. In addition to completing the core coursework for the major in Theatre, Theatre Education majors must take a performance practicum and a total of three production practicums (one each in costumes, scenery and lighting) and complete the following professional education requirements:

- THEA 1160 Creative Drama for the Classroom Teacher (3)
- THEA 1860 Preliminary Experience in Student Teaching (1)
- THEA 2215 Stage Make-up (3)
- THEA 2460 Practicum in Creative Drama: K-8 (3)
- THEA 2670 Stage Management (3)
- THEA 3221 Directing I (3)
- THEA 3230 Scenic Design I (3)
- THEA 4160 Theatre for Youth (3)
- THEA 4165 Methods of Facilitating Learning in Theatre Arts (3) (W)
- THEA 4460 Practicum in Secondary School Play Production: 9-12 (3)
- THEA 4467 Student Teaching/Seminar: K-12 Fine and Performing Arts: Theatre (15) (in lieu of THEA 4600 Senior Project required for the B.A. in Theatre)
- MDSK 2100 Diversity and Inclusion in Secondary Schools (3)

ELED 3120 The Elementary School Child (3)
EIST 4100 Computer Applications in Education (3)
EDUC 4290 Modifying Instruction for Learners with Diverse Needs (3)

Students are required to register for THEA 1600 (Majors and Minors Seminar) every semester, except the semester they are student teaching. Students must complete all the above coursework with a grade of C or above and a GPA of 2.75 in the major.

Students seeking theatre licensure should plan to apply to the Theatre Education major by the end of the Sophomore year. A later decision to seek licensure may result in a delayed graduation date. A GPA of 2.75 is required for admission to student teaching. Licensure applications are the responsibility of the student and the Teacher Education, Advising, and Licensure (TEAL) Office in the College of Education.

**MINOR IN THEATRE**

A minor in Theatre requires 23 semester hours including:

- THEA 1202 Introduction to Technical Theatre (3)
- THEA 2140 Play Analysis (3)
- THEA 2200 Introduction to Design for the Stage (3)
- THEA 2201 Acting I (O) (3)
- THEA 2401 Production Practicum (1)
- Choice of: THEA 2402 Performance Practicum: Theatre (1) OR a second THEA 2401 Production Practicum (1)
- Choice of: THEA 3130, THEA 3131, THEA 3132, OR THEA 3133 (3)
- THEA XXXX (6 hours of theatre electives)

Students enrolled in the minor are required to register for THEA 1600 (Majors and Minors Seminar) every semester. All the above requirements must be completed with no more than one grade of D and a GPA of at least 2.5 in the minor.

*From the performance of Topdog/Underdog*
Belk College of Business

VISION
The vision of the Belk College of Business is to become a leader in 21st Century business research and education.

MISSION
We are committed to creating an inclusive culture that inspires a passion for knowledge and intellectual growth as well as dedication to service. We engage in research that fosters innovative business theory, policy, and practice. In strategic partnership with the Greater Charlotte region, we educate our students to become leaders who are critical thinkers, ethically informed, and globally aware.

SHARED VALUES
In carrying out our mission, the Belk College of Business is committed to the following shared values:

Integrity: We foster and expect the highest level of professionalism from our faculty, staff, and students, achieved through a commitment to the highest ethical standards.

Knowledge and Innovation: We seek to build an atmosphere which encourages free and open inquiry, leading to significant advances in both theoretical and applied knowledge.

Excellence: We seek to continuously improve performance in our educational programs, research output, service, and other activities undertaken to accomplish our mission.

Diversity and Inclusion: We foster and support an environment that appreciates and values differences across individuals and groups, and strive to treat all students, faculty, and staff with dignity and fairness.

Global Citizenship: We seek to infuse all of our activities with a global perspective.

ACCREDITATION
All of the degree programs offered by the Belk College of Business are accredited by AACSB International, the Association to Advance Collegiate Schools of Business. AACSB International is the premier accrediting agency for bachelor’s, master’s, and doctoral degree programs in business administration and accounting.

BUSINESS HONORS PROGRAM
The Business Honors Program (BHP) provides students with access to a range of opportunities designed to stimulate their thinking and broaden their exposure to topics related to business.

ADMISSION
Students majoring in the Belk College of Business must complete an Application for Admission to the Business Honors Program and conduct an interview with the Director of the Business Honors Program and/or the Assistant Director of the Business Honors Program. Admission to the program is based on the student's demonstrated Honors potential (determined by examining GPA, SAT scores, courses completed, academic and other distinctions, and other factors), the personal interview, and availability of space in the program. All admitted students must earn and maintain a minimum 3.5 GPA to be an active member of the program. If the GPA of an admitted student drops below a 3.5 for two continuous semesters, the student will be dismissed from the program.
REQUIRED COURSES
Students in the Business Honors Program must complete a variety of Business Honors courses and at least one University Honors course. Honors courses cannot be repeated. A grade of D or F in any honors course results in automatic dismissal from the program.

SENIOR THESIS
Students are required to complete a Senior thesis and will work closely with a faculty member for the duration of the project.

GRADUATION WITH BUSINESS HONORS
To graduate with "Honors in Business," a student must complete the required honors courses, submit an application for Honors Candidacy at least two semesters prior to graduation, receive a grade of at least A in BUSN 3790, and present a GPA of at least 3.5 overall and 3.5 in all honors courses for which a grade was assigned.

BUSINESS LEARNING COMMUNITY
The Business Learning Community (BLC) is a distinct approach to learning that inspires first generation students to become active in their own educational experiences – to truly become a “cross-cultural community of learners.” Students in the BLC interact closely with their peers, faculty, and staff to create the ultimate college experience: the opportunity to take their learning beyond the classroom and apply it in a practical sense to the business world.

Participants in this one-year program live on campus together, enroll in common courses, and fulfill business-related extracurricular activities. Freshmen reside in Charles F. Lynch Hall which is designed for learning community students.

ADMISSION
Freshmen who are accepted into the Belk College of Business are encouraged to apply for admission to the BLC. Admission to the program is based on the student’s high school GPA, SAT scores, courses completed, other factors, and availability of space in the program. Applications can be submitted online at: lc.uncc.edu.

REQUIRED COURSES
Students in the BLC must complete specialized courses designed for learning community students. Once students are admitted to the Business Learning Community, they are required to complete all sections offered unless they receive permission from the Business Learning Community Coordinator.

FIELD TRIPS, EVENTS, AND OTHER EXTRACURRICULAR ACTIVITIES
Students in the BLC are required to participate in all field trips, events, and other extracurricular activities offered by the Business Learning Community during the academic year.

UNDERGRADUATE PROGRAMS

MAJOR PROGRAMS
The Belk College of Business offers eight undergraduate majors for students at UNC Charlotte. Students must have earned a minimum cumulative GPA of 2.5, and a minimum GPA of 2.5 in the Progression Requirements, in order to be accepted into one of the major programs. These majors include:

- Accounting
- Economics
- Finance
- International Business
- Management
- Management Information Systems
- Marketing
- Operations and Supply Chain Management

UNDERGRADUATE CERTIFICATE PROGRAMS
- Business Entrepreneurship

MINOR PROGRAMS
The Belk College of Business offers three minors for students at UNC Charlotte. Students must have earned a minimum cumulative GPA of 2.5 in order to be accepted into one of these minor programs. Students must take all prerequisites for the courses required in the minor programs. These minors include:

- Economics
- Management Information Systems
- Operations and Supply Chain Management

DEGREE COMPOSITION
All business degrees are composed of: (1) General Education Requirements, (2) Progression Requirements, (3) Core Requirements, (4) Major Requirements, and (5) Electives. To graduate from UNC Charlotte, students must attain a minimum 120 earned credit hours. “Non-Business Elective” and “General Elective” credit hours may be required to address any shortfall needed to meet the 120 earned hours. A Non-Business Elective can be any course offered by the University outside the Belk College of Business. A General Elective can be any course offered by the University that is not already fulfilling a degree requirement.

ACADEMIC ADVISING
The Business Advising Center advises all students in the Belk College of Business. Entering students are designated as Pre-Accounting (PACC), Pre-Business (PBUS), and Pre-Economics (PECO). Once students have attained certain course requirements during the
Junior year, they may officially declare a major program in the Belk College. To declare a major, students will complete a *Curriculum Guide* and *Change of Major* form with their assigned Academic Advisor.

**COURSE LEVEL AND PREREQUISITE RESTRICTIONS**
The Belk College restricts the registration of upper-division business courses (3000-level) to majors only who have attained Junior or Senior standing and satisfied course prerequisites. *Course prerequisites are strongly enforced and cannot be waived.* Pre-Accounting, Pre-Business, and Pre-Economics students may register for 3000-level Core Courses provided that all necessary prerequisites have been met. The Belk College reserves the right to remove students from any courses for which prerequisites (including minimum GPA requirements) have not been successfully met. Students enrolling in MGMT 3280, Business Policy, must have achieved Senior level status and have completed all Core Courses with grades of C or better. Pre-Accounting, Pre-Business, and Pre-Economics students may not enroll in MGMT 3280.

**GRADE REPLACEMENT AND REPEAT POLICIES**
Students are permitted two attempts at any course in the Belk College of Business. This includes all: (1) Progression Requirements, (2) Core Requirements, and (3) Major Requirements. Students who earn less than a grade of C within two attempts in any of these required courses will be ineligible to continue in the major. Students are permitted to invoke the Grade Replacement Policy for business courses, however, the repeated course(s) will still count as an attempt.

**RESIDENCY REQUIREMENTS**
In addition to meeting University residency requirements, all students seeking undergraduate degrees in the Belk College must complete at least 50 percent of the Core and Major Requirements at UNC Charlotte. This will vary depending on the major program requirements.

Furthermore, at least half of the hours required for an undergraduate degree in the Belk College of Business must be taken outside of the Belk College in order to have a well-rounded and balanced university education and experience. These 60 hours are designated as “Non-Business” electives. In addition to the General Education Requirements, the following courses are designated as Non-Business: ECON 2101, ECON 2102, ECON 3125, MATH 1120, and STAT 1220.

**TRANSFER AND SECOND-DEGREE STUDENTS**
The Belk College of Business major programs are designed to allow transfer students from community colleges and other institutions to enter the program and complete their degree requirements at UNC Charlotte. It is very important that students meet with an advisor at their community college or other institution to plan courses that will be accepted into the Belk College of Business. Due to AACSB accreditation standards, equivalency for upper-division business courses may be denied. Transfer equivalencies are granted upon application to UNC Charlotte. *Once a student is admitted into the Belk College, they are prohibited from transferring in additional business coursework (Progression, Core, and Major Courses) from other institutions.*

**CATALOG POLICIES**
The Belk College reserves the right to impose new curriculum changes at any time. Students not admitted to the upper division majors are subject to any changes to major requirements regardless of General Education catalog or matriculation term. Readmitted students are automatically considered under the new business requirements.

**EXPERIENTIAL LEARNING AND SERVICE OPPORTUNITIES**
Students are encouraged to participate in professional work experiences that support academic and career development through cooperative education, 49ership, service, and internship programs. The College collaborates with the University Career Center to expand experiential learning offerings to enable more students to graduate with career related experience. For more information about experiential learning opportunities, please see the University Career Center section of this Catalog.

**COOPERATIVE EDUCATION PROGRAM**
Students majoring in Accounting, Economics, Finance, International Business, Management Information Systems, Management, Marketing, or Operations and Supply Chain Management may obtain practical work experience related to their major by participating in the cooperative education program. To be eligible for cooperative education, students must be Juniors who have an overall GPA of at least 2.5 and have completed the progression courses required by the department. Transfer students must complete at least 12 hours at UNC Charlotte to be eligible for cooperative education. Completion of courses related to the co-op position may be required prior to the co-op work experience. These courses will be established by the Co-op Advisor and must be approved in advance. Students must complete either two full-time alternating semesters of work or three consecutive part-time work semesters while taking a reduced academic load of no more than nine credit hours. Accounting students selected to work in a public accounting firm or for an internal audit position may complete program requirements by working one
semester and either writing a paper or making a formal presentation before faculty and students. Economics students must complete eight additional progression courses as identified by the Department of Economics prior to making application to the Cooperative Education Program. For more information, contact the Co-op Advisor or the University Career Center.

SCHOLARSHIPS

There are several scholarships available for students in the Belk College of Business. Some of the scholarships are designated to recognize academic excellence in the Junior and Senior years. Further information can be obtained from the Office of Student Financial Aid and the Belk College of Business Advising Center. Several scholarships are also designated for business students interested in studying in a foreign country. Additional information can be obtained from the Global Business Programs office in the Belk College of Business.

PRE-ACCOUNTING, PRE-BUSINESS, AND PRE-ECONOMICS (Business Emphasis)

Students who apply for and are accepted into the Belk College of Business are initially classified as Pre-Accounting (PACC), Pre-Business (PBUS), or Pre-Economics (PECO) majors. Students who complete the Progression Requirements listed below may declare an upper-division major in the following areas: Accounting, Economics, Finance, International Business, Management, Information Systems, Management, Marketing, or Operations and Supply Chain Management.

PROGRESSION REQUIREMENTS

Pre-Accounting, Pre-Business, and Pre-Economics (Business Emphasis) students seeking admission to the upper division majors must have met the following criteria:

1) attained Junior standing (60 hours or more)
2) earned a minimum overall GPA of at least 2.5 for all academic work
3) completed the following Progression Courses: ACCT 2121 and 2122, ECON 2101 and 2102, MATH 1120, STAT 1220, and INFO 2130 with a minimum grade of C
4) earned a minimum GPA of at least 2.5 for these Progression Courses
5) completed an approved Curriculum Guide and Change of Major Form with an Academic Advisor in the Belk College of Business Advising Center

Students may attempt each of the Progression Courses, listed in (3) above, a maximum of two times. Courses repeated under the Grade Replacement Policy are excluded from the GPA computation, but will count as an attempt. Students who do not meet the Progression Requirements are ineligible for continuation in the Belk College of Business.

Suggested Curriculum: Pre-Accounting, Pre-Business, and Pre-Economics (Business Emphasis)

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<th>First Year</th>
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<td>MATH 1120 Calculus</td>
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<td>LBST 2101 Western Culture</td>
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<td>ECON 2101 Principles of Economics-Macro</td>
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<td>ECON 2102 Principles of Economics-Micro</td>
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*Select from LBST 1101, 1102, 1103, 1104 or 1105
* Select from LBST 2211, 2212, 2213, 2214, or 2215
***Non-Business Electives are courses offered outside the Belk College of Business

PRE-ECONOMICS (Liberal Arts Emphasis)

Students who apply for and are accepted into the Belk College of Business are initially classified as Pre-Accounting (PACC), Pre-Business (PBUS), or Pre-Economics (PECO) majors. Students who complete the Progression Requirements listed below may declare an upper-division major in the following

PROGRESSION REQUIREMENTS
Pre-Economics students, with an emphasis in Liberal Arts, seeking admission to the upper division major must have met the following criteria:

1) attained Junior standing (60 hours or more)
2) earned a minimum overall GPA of at least 2.5 for all academic work
3) completed the following Progression Courses: ENGL 1101 and 1102, ECON 2101 and 2102, MATH 1120, STAT 1220, and INFO 2130 with a minimum grade of C
4) earned a minimum GPA of at least 2.5 for these Progression Courses
5) completed an approved Curriculum Guide and Change of Major Form with an Academic Advisor in the Belk College of Business Advising Center

Students may attempt each of the Progression Courses, listed in (3) above, a maximum of two times. Courses repeated under the Grade Replacement Policy are excluded from the GPA computation, but will count as an attempt. Students who do not meet the Progression Requirements are ineligible for continuation in the Belk College of Business.

Suggested Curriculum: Pre-Economics (Liberal Arts Emphasis)

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<td>ECON 2101</td>
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<td>Natural Science</td>
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<td>LBST 2102</td>
<td>Global Understanding</td>
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<td>STAT 1220</td>
<td>Elements of Statistics I</td>
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*Select from LBST 1101, 1102, 1103, 1104 or 1105
**Select from LBST 2211, 2212, 2213, 2214, or 2215
***Non-Business Electives are courses offered outside the Belk College of Business.
Department of Accounting
belkcollege.uncc.edu

Chair: H. Burton
Professor Emeritus: R. Schroeder
Big Five Distinguished Professor of Accounting: C. Wiggins
Professor: L. H. Godfrey
Associate Professors: S. Bhamornsiri, A. Blankley, H. Burton, J. Cathey, N. Elias, R. Guinn, D. S. Kerr, E. Malmgren
Clinical Professor: S. Sevin
Lecturers: P. Mynatt, S. K. Yarbrough

PROGRAM OBJECTIVES
The program provides a learning environment in which students acquire conceptual and technical knowledge in the accounting and business areas as well as other essential capabilities for a successful accounting career. The undergraduate accounting curriculum is designed to enable students to:

a) effectively develop, measure, analyze, validate, and communicate financial and other information
b) understand the concepts and methods of economics, finance, marketing, quantitative methods, management, and information systems
c) develop skills, competencies and learning capacities that are essential for a broad education

PROGRAM OUTCOMES
Graduates should have an excellent foundation for careers in business, accounting and professional accounting. A student who plans to become licensed as a certified public accountant in North Carolina must complete an additional 30 semester hours of academic study beyond the undergraduate accounting education. A student can meet this requirement by completing the Master of Accountancy program (MAcc). For details on the MAcc, please see the UNC Charlotte Graduate Catalog.

ACCREDITATION
The Accounting program is accredited by AACSB International, the Association to Advance Collegiate Schools of Business. AACSB International is the premier accrediting agency for bachelor's, master's and doctoral degree programs in business administration and accounting. AACSB International is also the professional organization for management education.

BACHELOR OF SCIENCE IN ACCOUNTING

To be accepted into the Accounting major and to progress into the upper division of the College, a student must meet the Progression Requirements as previously stated in the PRE-ACCOUNTING, PRE-BUSINESS, and PRE-ECONOMICS section. This major requires a minimum of 120 semester hours. Students must complete the General Education Requirements of the University and the Progression, Core, and Major Requirements of the Belk College of Business.

The following nine Core Courses and six Major Courses are required. Students may attempt each of the Progression, Core, and Major Courses two times.

CORE COURSES
BLAW 3150 Business Law I
COMM 3160 Business Communications
ECON 3125 Managerial Economics
FINN 3120 Financial Management
INFO 3130 Management Information Systems
MGMT 3140 Management and Organizational Behavior
MGMT 3280 Business Policy
MKTG 3110 Marketing Concepts
OPER 3100 Operations Management

ACCOUNTING MAJOR COURSES
ACCT 3311 Intermediate Financial Accounting I
ACCT 3312 Intermediate Financial Accounting II
ACCT 3330 Managerial Cost Accounting
ACCT 3340 Accounting Information Systems
ACCT 3350 Introduction to Auditing
ACCT 4220 Income Tax

To obtain a B.S. in Accounting, a student must meet the University requirements of a GPA of at least 2.0 overall and in the courses for the major. Students must earn a minimum grade of C in all required Progression, Core, and Major Courses. When a student repeats a course, both the old grade and the new grade are included in the major and overall GPA. Courses repeated under the Grade Replacement Policy are excluded from the major and overall GPA computation. However, this repeated course does count as an attempt. Students must also meet the Belk College of Business residency requirements as described in the UNDERGRADUATE PROGRAMS section.

INTERNSHIP
Because the Department of Accounting is committed to experiential learning, it allows for Accounting majors to use one internship for academic credit. Permission of the Department is required before starting the internship. A minimum of ACCT 3312 (Intermediate Financial Accounting II) with a C or better and an overall GPA of at least 2.5 are required. The student may not have a current or prior work history with the internship company.
Department of Business Information Systems and Operations Management

Chair: C. Saydam
Professors: W. D. Cooper, M. Khouja, R. Kumar, S. Robbins, C. Saydam, A. Stylianou
Associate Professors: S. Park, C. Subramaniam
Assistant Professors: X. He, M. Johar, Y. Lu, K. Zhao, J. Zhou

DEGREE PROGRAMS
The Department of Business Information Systems and Operations Management (BISOM) offers majors in two dynamic disciplines: (1) Management Information Systems (MGIS) and (2) Operations and Supply Chain Management (OSCM). In addition, the department offers two minors: one in MGIS and another in OSCM. The focus of these programs is development of information technology and operations managers who can enhance the productivity of the firm in a knowledge-driven economy. Both majors offer students an integrated background in the functional areas of business and focus on enhancing problem-solving and critical-thinking skills using current technology.

A major in MGIS involves the application of information technology and analytical skills to the solution of organizational problems and opportunities for innovation. MGIS graduates are prepared for positions in the design, planning, development, implementation, and management of e-business information systems and systems support.

A major in OSCM focuses on the efficient use of resources to provide quality goods and services. OSCM enables students to pursue such careers in supply chain management, production planning, project management, quality assurance, and operations. Environments in which OSCM graduates are in high demand include health care, government, manufacturing, and service industries.

Who uses Management Information Systems?
All businesses, including for profit and not-for-profit, manufacturing and services, use OSCM. These businesses have to make forecasts, manage day-to-day operations, schedule personnel and equipment, manage quality and inventory, work with suppliers, and undertake projects. While OSCM has always been important in manufacturing, service organizations are discovering the importance of being able to effectively and efficiently manage operations. Financial services and health care industries have been on the leading edge in using OSCM to improve operations. Company expenditures on programs such as Six Sigma, total quality management, and operational risk management are in the billions of dollars.

Skills for Management Information Systems majors include:
- Analytical problem solving
- Business process skills
- Communication skills
- Computer skills
- Organizational skills

Who uses Operations and Supply Chain Management?
All businesses, including for profit and not-for-profit, manufacturing and services, use OSCM. These businesses have to make forecasts, manage day-to-day operations, schedule personnel and equipment, manage quality and inventory, work with suppliers, and undertake projects. While OSCM has always been important in manufacturing, service organizations are discovering the importance of being able to effectively and efficiently manage operations. Financial services and health care industries have been on the leading edge in using OSCM to improve operations. Company expenditures on programs such as Six Sigma, total quality management, and operational risk management are in the billions of dollars.

Skills for Operations and Supply Chain Management majors include:
- Analytical problem solving
- Attention to detail
- Communication skills
- Computer skills
- Organizational skills

MAJOR IN MANAGEMENT INFORMATION SYSTEMS

The primary objective of the Management Information Systems (MGIS) major is to prepare students for careers in the information systems function of organizations. The curriculum is designed to provide both technological and managerial knowledge relevant to the development and use of computer-based information systems.

To be accepted into the Management Information Systems major and to progress into the upper division of the College, a student must meet the Progression Requirements as previously stated in the PRE-ACCOUNTING, PRE-BUSINESS, and PRE-ECONOMICS section. The B.S.B.A. in Management Information Systems requires a minimum of 120 semester hours. Students must complete the General Education Requirements of the University and the Progression, Core, and Major Requirements of the Belk College of Business.

The following nine Core Courses, five MGIS Major Courses, and one MGIS Major Elective are required. Students may attempt each of the Progression, Core, and Major Courses two times.

CORE COURSES
BLAW 3150 Business Law I
COMM 3160 Business Communications
ECON 3125 Managerial Economics  
FINN 3120 Financial Management  
INFO 3130 Management Information Systems  
MGMT 3140 Management and Organizational Behavior  
MGMT 3280 Business Policy  
MKTG 3110 Marketing Concepts  
OPER 3100 Operations Management

MGIS MAJOR COURSES
INFO 3229 Business Data Communications and Information Security  
INFO 3231 Business Applications Development  
INFO 3233 Data and Information Management  
INFO 3234 Business Information Systems Analysis and Design  
INFO 3240 eBusiness Systems

MGIS MAJOR ELECTIVES
(Select one of the following courses)
ACCT 3340 Accounting Information Systems  
INFO 3000 Topics in Management Information Systems  
INFO 3211 Technical Support  
INFO 3232 International Information Systems Management  
INFO 3235 Advanced Business Information Systems Development  
INFO 3236 Business Analytics  
INFO 3238 Current Issues in the Management of Information Systems  
INFO 3241 Information Audit, Control, and Risk Management  
INFO 3400 Management Information Systems Internship  
ITCS 3112 Design and Implementation of Object-Oriented Systems  
ITCS 3155 Software Engineering  
ITCS 3160 Database Design and Implementation  
OPER 3203 Decision Modeling and Analysis  
OPER 3204 Management of Service and Project Operations  
OPER 3206 Quality Assurance and Management

To obtain a B.S.B.A. in Management Information Systems, a student must meet the University requirements of a GPA of at least 2.0 overall and in the courses for the major. Students must earn a minimum grade of C in all required Progression, Core, and Major Courses. When a student repeats a course, both the old grade and the new grade are included in the major and overall GPA. Courses repeated under the Grade Replacement Policy are excluded from the major GPA and overall computation. However, this repeated course does count as an attempt. Students must also meet the Belk College of Business residency requirements as described in the UNDERGRADUATE PROGRAMS section.

MINOR IN MANAGEMENT INFORMATION SYSTEMS
The minor in Management Information Systems is designed to provide students who have an interest in business information systems with a broad foundation for integrating information technology techniques and concepts into their major field of study in business. The demand for business graduates who are knowledgeable about designing, planning, developing, managing, and evaluating of information systems continues to increase as the economy moves from a manufacturing to an information base. The demand for MGIS professionals has increased dramatically during the past ten years and the trend is expected to continue. However, there is also an increase in the demand for management information systems professionals who have an in-depth understanding of the application domain and who can apply MGIS concepts in contexts which are more specific to their major. Thus, professionals with a primary interest and expertise in marketing, health care, banking, finance, accounting, and management are being sought by business application-area specialists.

The focus of the minor in MGIS is to impart a framework for understanding MGIS and for utilizing its tools to the student’s major. The minor will offer graduates a competitive advantage in terms of the types of positions for which they qualify. Graduates of the program will be able to act as technical liaisons between MGIS professionals and their “home” departments, as sales specialists for specialized software/applications systems, and as technical representatives.

The minor in MGIS is directed not only at UNC Charlotte students majoring in business but also those majoring in other Colleges. The benefits of a minor in MGIS include increased marketability in information-dependent firms in the public and private sector and the ability to leverage one’s major discipline with state-of-the-art computing knowledge. A key benefit of taking MGIS courses is that students learn to effectively use technology in business settings.

To be accepted into the minor in MGIS and to progress into the upper division of the College, a student must present a minimum 2.5 GPA overall and Junior standing. A minor in Management Information Systems requires a minimum 15 semester hours (five courses) for students who have taken the business prerequisites listed below. Students may attempt each of these 11 courses two times.

PREREQUISITES
ACCT 2121 Principles of Accounting I  
ACCT 2122 Principles of Accounting II
ECON 2101 Principles of Economics Macro  
ECON 2102 Principles of Economics Micro  
MATH 1120 Calculus  
STAT 1220 Elements of Statistics I  

**MGIS MINOR COURSES**  
INFO 2130 Introduction to Business Computing*  
INFO 3130 Management Information Systems  
INFO 3229 Business Data Communications and Information Security  
INFO 3233 Business Database Systems  

**MGIS MINOR ELECTIVES**  
(Select one of the following courses)  
ACCT 3340 Accounting Information Systems  
INFO 3231 Business Application Development  
INFO 3234 Business Information Systems Analysis and Design  
INFO 3236 Business Analytics  
MKTG 3214 Internet Marketing  
OPER 3203 Decision Modeling and Analysis  

*All Computer Science and Software and Information Systems majors will be exempted from INFO 2130. Other students with sufficient background can apply for Credit by Exam for INFO 2130.

To obtain a Minor in Management Information Systems, a student must meet the University requirements of a GPA of at least 2.0 overall and in the courses for the minor. Students must earn a minimum grade of C in all required minor courses. When a student repeats a course, both the old grade and the new grade are included in the minor and overall GPA. Courses repeated under the Grade Replacement Policy are excluded from the minor and overall GPA calculation. However, this repeated course does count as an attempt. Students must also meet the Belk College of Business residency requirements as described in the UNDERGRADUATE PROGRAMS section.

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**MAJOR IN OPERATIONS AND SUPPLY CHAIN MANAGEMENT**

To be accepted into the Operations and Supply Chain Management major and to progress into the upper division of the College, a student must meet the Progression Requirements as previously stated in the PRE-ACCOUNTING, PRE-BUSINESS, and PRE-ECONOMICS section. The B.S.B.A. in Operations and Supply Chain Management requires a minimum of 120 semester hours. Students must complete the General Education Requirements of the University and the Progression, Core, and Major Requirements of the Belk College of Business.

The following nine Core Courses, three Major Courses, and two OSCM Major Electives are required. Students may attempt each of the Progression, Core, and Major Courses two times.

**CORE COURSES**  
BLAW 3150 Business Law I  
COMM 3160 Business Communications  
ECON 3125 Managerial Economics  
FINN 3120 Financial Management  
INFO 3130 Management Information Systems  
MGMT 3140 Management and Organizational Behavior  
MGMT 3280 Business Policy  
MKTG 3110 Marketing Concepts  
OPER 3100 Operations Management  

**OSCM MAJOR COURSES**  
OPER 3203 Decision Modeling and Analysis  
OPER 3204 Management of Service and Project Operations  
OPER 3208 Supply Chain Management  

**OSCM MAJOR ELECTIVES**  
(Select two of the following courses)  
ENGR 3670 Total Quality Systems  
ETIN 3133 Quality Control  
INFO 3233 Database and Information Management  
INFO 3236 Business Analytics  
OPER 3000 Topics in Operations Management  
OPER 3201 Advanced Operations Management  
OPER 3206 Quality Assurance and Management  
OPER 3400 Operations and Supply Chain Management Internship  
OPER 3800 Directed Study  

To obtain a B.S.B.A. in Operations and Supply Chain Management, a student must meet the University requirements of a GPA of at least 2.0 overall and in the courses for the major. Students must earn a minimum grade of C in all required Progression, Core, and Major Courses. When a student repeats a course, both the old grade and the new grade are included in the major and overall GPA. Courses repeated under the Grade Replacement Policy are excluded from the major and overall GPA calculation. However, this repeated course does count as an attempt. Students must also meet the Belk College of Business residency requirements as described in the UNDERGRADUATE PROGRAMS section.

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**MINOR IN OPERATIONS AND SUPPLY CHAIN MANAGEMENT**

The minor in Operations and Supply Chain Management (OSCM) is designed to provide business and non-business students who have an interest in supply chain management, manufacturing, and service operations with a broad foundation of OSCM concepts and analytical methodology to be integrated into their major field of study.

The demand for graduates who are knowledgeable about designing, planning, evaluating, and managing supply chains, production, and service systems continues to increase. There is also an increase in the demand of OSCM professionals who can define strategic and operational problems, collect relevant data, and apply advanced analytical techniques to improve the performance of firms. OSCM courses deal with supply chains, service systems, and manufacturing organizations. These areas examine the production function of an organization at a
strategic level, as well as the plant and shop floor level. Areas included in the OSCM program include operations strategy, process analysis, product design, quality management, logistics management, procurement, supply chain management, project management, and waiting line management as well as analytical techniques such as optimization and simulation.

The minor offers graduates a competitive advantage in terms of the types of positions for which they qualify. The minor in OSCM is directed not only at UNC Charlotte students majoring in business but also those majoring in other Colleges. The benefits of a minor in OSCM include increased marketability in the public and private sector and the ability to leverage one’s major discipline with a solid understanding of one business area, increased analytical thinking, problem solving ability, and an understanding of internal and external environments of service and business organizations.

To be accepted into the OSCM Minor and to progress into the upper division of the College, a student must present a minimum 2.5 GPA overall and Junior standing. A minor in Operations and Supply Chain Management requires a minimum 15 semester hours (five courses) for students who have taken the business prerequisites listed below. **Students may attempt each of these 12 courses two times.**

**PREREQUISITES**
- ACCT 2121 Principles of Accounting I
- ACCT 2122 Principles of Accounting II
- ECON 2101 Principles of Economics Macro
- ECON 2102 Principles of Economics Micro
- INFO 2130 Introduction to Business Computing*
- MATH 1120 Calculus
- STAT 1220 Elements of Statistics I

**OSCM MINOR COURSES**
- MGMT 3140 Management and Organizational Behavior
- OPER 3100 Operations Management
- OPER 3208 Supply Chain Management

**OSCM MINOR ELECTIVES**
*(Select two of the following courses)*
- INFO 3233 Data and Information Management
- OPER 3201 Advanced Operations Management
- OPER 3203 Decision Modeling and Analysis
- OPER 3206 Quality Assurance and Management

*All Computer Science and Software and Information Systems majors will be exempted from INFO 2130.

Other students with sufficient background can apply for Credit by Exam for INFO 2130.

To obtain a Minor in Operations and Supply Chain Management, a student must meet the University requirements of a GPA of at least 2.0 overall and in the courses for the minor. Students must earn a minimum grade of C in all required minor courses. When a student repeats a course, both the old grade and the new grade are included in the minor and overall GPA. Courses repeated under the Grade Replacement Policy are excluded from the minor and overall GPA computation. However, this repeated course does count as an attempt. Students must also meet the Belk College of Business residency requirements as described in the UNDERGRADUATE PROGRAMS section.
Department of Economics

Chair: J. Troyer
Professor Emeriti: R. Neel, W. Wubben, R. Zuber
Associate Professors: H-C. Lin, J. Troyer, H-K. Tseng, I. Tucker
Associate Professor Emeriti: E. Rogers
Assistant Professors: E. Sewell, D. Shapiro, A. Zillante
Lecturer: C. Stivender
Clinical Professor: C. Swartz

The study of Economics offers students a problem-solving discipline to foster their intellectual and career development. It provides students with a balanced and broad educational background and prepares them to choose from a wide range of career alternatives.

The Economics program explores the economic decisions of individuals, businesses, governments, and other institutions. It examines the nature of economic activity, why it takes place, and how it affects everyone’s lives. The program includes elective courses that enable students to tailor their educational program to meet personal needs and interests. The study of economics also helps students develop a way of thinking that is logical and rigorous. It provides decision-making tools that they can apply to personal as well as business decisions and use to address the many economic decisions they will face in the future.

DEGREE PROGRAMS
The Department of Economics offers two programs leading to the Bachelor of Science degree. Students who plan to pursue careers in business-related fields such as banking, finance, and international commerce, or who plan to enter an MBA program, are encouraged to elect the Major in Economics with a Business Emphasis program. Students planning to pursue a career in education or the social sciences, enter graduate school in economics, or attend law school are encouraged to pursue the Major in Economics with a Liberal Arts Emphasis.

PREREQUISITE COURSES
All majors in Economics must complete COMM 3160 (Business Communications) prior to registering for any 4000-level Economics course. Students transferring into the Economics program as a Senior must complete COMM 3160 their first semester in the program.

It is recommended that students who plan graduate work in economics complete MATH 1241, ECON 4100, and, as available, ECON 4112 and 4117. Also, they should consider additional work in mathematics but should consult with an Academic Advisor concerning specific courses.

MAJOR IN ECONOMICS with a BUSINESS EMPHASIS

To be accepted into the Economics major with the Business Emphasis and to progress into the upper division of the College, a student must meet the Progression Requirements as previously stated in the PRE-ACCOUNTING, PRE-BUSINESS, and PRE-ECONOMICS section. This major requires a minimum of 120 semester hours. Students must complete the General Education Requirements of the University and the Progression, Core, and Major Requirements of the Belk College of Business.

The following six Core Courses, two Business Core Courses, one Major Course, and four Major Electives are required. Students may attempt each of these 13 courses two times.

CORE COURSES
ECON 3112 Econometrics
ECON 3122 Intermediate Microeconomics
ECON 3123 Intermediate Macroeconomics
ECON 3125 Managerial Economics
FINN 3120 Financial Management
COMM 3160 Business Communications

(Select two of the following Business Core Courses)
BLAW 3150 Business Law I
INFO 3130 Management Information Systems
MGMT 3140 Management and Organizational Behavior
MKTG 3110 Marketing Concepts
OPER 3100 Operations Management

MAJOR COURSES
ECON 4180 Industrial Organization and Public Policy

MAJOR ELECTIVES
Four (4) Economics Electives from the 3000- or 4000-level

To obtain a B.S. in Economics with the Business Emphasis, a student must meet the University requirements of a GPA of at least 2.0 overall and in the courses for the major. Students must earn a minimum grade of C in all Progression, Core, and Major Courses. When a student repeats a course, both the old grade and the new grade are included in
the major and overall GPA. Courses repeated under the Grade Replacement Policy are excluded from the major and overall GPA computation. However, this repeated course does count as an attempt. Students must also meet the Belk College of Business residency requirements as described in the UNDERGRADUATE PROGRAMS section.

MAJOR IN ECONOMICS with a LIBERAL ARTS EMPHASIS

To be accepted into the Economics major with the Liberal Arts Emphasis and to progress into the upper division of the College, a student must meet the Progression Requirements as previously stated in the PRE-ECONOMICS - LIBERAL ARTS section. This major requires a minimum of 120 semester hours. Students must complete the General Education Requirements of the University and the Progression, Core, and Major Requirements of the College of Business.

The following Core Courses and Major Courses and Electives are required. Students may attempt each of the 9 business and economics courses two times.

**CORE COURSES**
- ECON 3112 Econometrics
- ECON 3122 Intermediate Microeconomics
- ECON 3123 Intermediate Macroeconomics
- COMM 3160 Business Communications

**MAJOR ELECTIVES**
Five (5) Economics Electives from the 3000- or 4000-level
Completion of a Minor offered outside the Belk College of Business*

*Students must select a minor in one of the following disciplines: Actuarial Mathematics, Africana Studies, American Studies, Anthropology, Criminal Justice, Earth Science, Geography, Gerontology, Health Sciences, History, International Studies, Mathematics, Philosophy, Political Science, Psychology, Social Work, Sociology, Urban Studies, or Women’s and Gender Studies. Students may choose a minor not listed above with the approval of their Academic Advisor.

To obtain a B.S. in Economics with the Liberal Arts Emphasis, a student must meet the University requirements of a GPA of at least 2.0 overall and in the courses for the major. Students must earn a minimum grade of C in all Progression, Core, and Major Courses. When a student repeats a course, both the old grade and the new grade are included in the major and overall GPA. Courses repeated under the Grade Replacement Policy are excluded from the major and overall GPA computation. However, this repeated course does count as an attempt. Students must also meet the Belk College of Business residency requirements as described in the UNDERGRADUATE PROGRAMS section.

**MINOR IN ECONOMICS**

To be accepted into the Economics minor and to progress into the upper division of the College, a student must present a minimum 2.5 GPA and Junior standing. A minor in Economics requires 18 semester hours of economics, including the following courses. Students may attempt each of the courses in the minor two times.

**MINOR COURSES**
- ECON 2101 Principles of Economics Macro
- ECON 2102 Principles of Economics Micro
- ECON 3122 Intermediate Microeconomics
  OR ECON 3125 Managerial Economics

**MINOR ELECTIVES**
Three (3) Economics Electives (9 credit hours) from the 3000- or 4000-level

To obtain a minor in Economics, a student must meet the University requirements of a GPA of at least 2.0 overall and in the courses for the minor. Students must earn a minimum grade of C in all required minor courses. When a student repeats a course, both the old grade and the new grade are included in the minor GPA. Courses repeated under the Grade Replacement Policy are excluded from the major GPA computation. However, this repeated course does count as an attempt. Students must also meet the Belk College of Business residency requirements as described in the UNDERGRADUATE PROGRAMS section.
Department of  
Finance  
belkcollege.uncc.edu

Chair: D. King  
Distinguished Scholar of Risk Management and  
Insurance, and Associate Professor: W. Tian  
Rush S. Dickson Distinguished Scholar of Finance,  
and Professor: D. King  
The John Crosland Sr. Endowed Professorship in Real  
Estate and Development, and Director of the  
Center for Real Estate: S. Ott  
The Torrence E. Hemby Sr. Distinguished Professor  
in Banking: C. Sealey  
Professors: L. Blenman, R. Buttmer, L. Trosch  
Associate Professor and Director of the Ph.D.  
Program: S. Clark  
Clinical Associate Professor and Director of the  
Mathematical Finance Program: J. Russell  
Associate Professors: F. Neale, D. A. Plath  
Assistant Professors: I-H. Chiang, K. Hughen  
Clinical Professor and Associate Director of the  
Center for Real Estate: D. Read  
Lecturer: T. Marshall

The Department of Finance prepares students for  
financial leadership within organizations and  
provides them with an understanding of the legal  
environment in which these organizations operate. In  
the Department’s various programs, students acquire  
knowledge that enables them to understand:

- the concepts, processes, and institutions  
volved in planning for, acquiring and allocating  
capital with respect to modern business  
organizations
- the economic and legal environment of  
organizations, and the myriad social and political  
influences on business
- the concepts and methods of economics,  
accounting, mathematics, management,  
information systems, and business law

DEGREE PROGRAMS
The Department of Finance offers three  
concentrations leading to the Bachelor of Science in  
Business Administration degree. Students who plan  
to pursue careers in business-related fields such as  
banking, finance, and international commerce, or  
who plan to enter an MBA program, are encouraged  
to elect the Finance concentration. Students  
planning to pursue a career in risk management and  
insurance are encouraged to pursue the program with  
the Risk Management and Insurance concentration.

MAJOR IN FINANCE  
with a FINANCE CONCENTRATION

To be accepted into Finance major with a Finance  
Concentration and to progress into the upper division  
of the College, a student must meet the Progression  
Requirements as previously stated in the PRE-  
ACCOUNTING, PRE-BUSINESS, and PRE-  
ACCOUNTING sections. This major requires a  
minimum of 120 semester hours. Students must  
complete the General Education Requirements of the  
University and the Progression, Core, and Major  
Requirements of the Belk College of Business.

The following Core, Major, and Major Elective  
Courses are required for a B.S.B.A. degree in Finance  
with a Finance Concentration.  

- **MAJOR COURSES**
  - FINN 3222  Investments
  - FINN 3226  Financial Theory and Practice

- **MAJOR FINANCE ELECTIVES**  
  (Select two to three of the following courses)
  - BLAW 3250  Business Law II
  - FINN 3221  Financial Institutions and Markets
  - FINN 3223  International Financial Management
  - FINN 3224  Applied Business Finance
  - FINN 3225  Commercial Bank Management
  - FINN 3261  Real Estate Finance
  - FINN 3271  Principles of Risk Management and  
    Insurance
  - FINN 3272  Life Insurance and Professional  
    Financial Planning
  - FINN 4159  Student Managed Investment Fund II

  (Select one of the following courses if you only  
  selected two from the list above)
  - ACCT 3311  Intermediate Financial Accounting I
  - ECON 3112  Econometrics
  - ECON 3115  Money and Banking
  - FINN 3800  Directed Study (Chair approval required)
  - OPER 3204  Management of Service and Project  
    Operations

To obtain a B.S.B.A. in Finance with a Finance  
Concentration, a student must meet the University  
requirements of a GPA of at least 2.0 overall and in  
the courses for the major. Students must earn a  
minimum grade of C in all required Progression,  
Core, and Major Courses. When a student repeats  
a course, both the old grade and the new grade are  
included in the major and overall GPA. Courses  
repeated under the Grade Replacement Policy are  
excluded from the major and overall GPA  
computation. However, this repeated course does  
count as an attempt. Students must also meet the  
Belk College of Business residency requirements as  
described in the UNDERGRADUATE PROGRAMS  
section.
MAJOR IN FINANCE with a RISK MANAGEMENT AND INSURANCE CONCENTRATION

To be accepted into the Finance major with a Risk Management and Insurance Concentration and to progress into the upper division of the College, a student must meet the Progression Requirements as previously stated in the PRE-ACCOUNTING, PRE-BUSINESS, and PRE-ECONOMICS section. This major requires a minimum of 120 semester hours. Student must complete the General Education Requirements of the University and the Progression, Core, and Major Requirements of the Belk College of Business.

The following Core, Major, and Major Elective Courses are required for a B.S.B.A. degree in Finance with a Risk Management and Insurance Concentration. Students may attempt each of the Progression, Core, and Major Courses two times.

CORE COURSES
BLAW 3150 Business Law I
COMM 3160 Business Communications
ECON 3125 Managerial Economics
FINN 3120 Financial Management
INFO 3130 Management Information Systems
MGMT 3140 Management and Organizational Behavior
MGMT 3280 Business Policy
MKTG 3110 Marketing Concepts
OPER 3100 Operations Management

MAJOR COURSES
FINN 3271 Principles of Risk Management and Insurance
FINN 3272 Life Insurance and Professional Financial Planning
FINN 3273 Property and Casualty
FINN 3275 Advanced Risk Management

MAJOR RISK MANAGEMENT ELECTIVES
(Select one of the following courses)
FINN 3222 Investments
FINN 3276 Employee Benefits
FINN 3277 Legal Aspects of Insurance
FINN 3800 Directed Study (Department Chair approval required)
MGMT 3277 Entrepreneurship
MKTG 3213 Professional Selling and Sales Management

To obtain a B.S.B.A. in Finance with a Risk Management and Insurance Concentration, a student must meet the University requirements of a GPA of at least 2.0 overall and in the courses for the major. Students must earn a minimum grade of C in all required Progression, Core, and Major Courses. When a student repeats a course, both the old grade and the new grade are included in the major and overall GPA. Courses repeated under the Grade Replacement Policy are excluded from the major and overall GPA computation. However, this repeated course does count as an attempt. Students must also meet the Belk College of Business residency requirements as described in the UNDERGRADUATE PROGRAMS section.

MAJOR IN FINANCE with a joint FINANCE/ACCOUNTING CONCENTRATION

To be accepted into the Finance major with a joint Finance/Accounting Concentration and to progress into the upper division of the College, a student must meet the Progression Requirements as previously stated in the PRE-ACCOUNTING, PRE-BUSINESS, and PRE-ECONOMICS section. This major requires a minimum of 120 semester hours. Students must complete the General Education Requirements of the University and the Progression, Core, and Major Requirements of the Belk College of Business.

The following Core, Major, and Major Elective Courses are required for a B.S.B.A. degree in Finance with a joint Finance/Accounting Concentration. Students may attempt each of the Progression, Core, and Major Courses two times.

CORE COURSES
BLAW 3150 Business Law I
COMM 3160 Business Communications
ECON 3125 Managerial Economics
FINN 3120 Financial Management
FINN 3120 Financial Management
INFO 3130 Management Information Systems
MGMT 3140 Management and Organizational Behavior
MGMT 3280 Business Policy
MKTG 3110 Marketing Concepts
OPER 3100 Operations Management

MAJOR COURSES
FINN 3222 Investments
FINN 3226 Financial Theory and Practice
ACCT 3311 Intermediate Financial Accounting I
ACCT 3312 Intermediate Financial Accounting II

MAJOR FINANCE/ACCOUNTING ELECTIVES
(Select two of the following courses)
ACCT 3330 Managerial Cost Accounting
ACCT 3350 Introduction to Auditing
ACCT 3380 Fraud Examination
ACCT 4220 Income Tax
BLAW 3250 Business Law II
ECON 3112 Econometrics
FINN 3221 Financial Institutions and Markets
FINN 3223 International Financial Management
FINN 3224 Applied Business Finance
FINN 3225 Commercial Bank Management
FINN 3800 Directed Study (Department Chair approval required)
To obtain a B.S.B.A. in Finance with a joint Finance/Accounting Concentration, a student must meet the University requirements of a GPA of at least 2.0 overall and in the courses for the major. Students must earn a minimum grade of C in all required Progression, Core, and Major Courses. When a student repeats a course, both the old grade and the new grade are included in the major and overall GPA. Courses repeated under the Grade Replacement Policy are excluded from the major and overall GPA computation. However, this repeated course does count as an attempt. Students must also meet the Belk College of Business residency requirements as described in the UNDERGRADUATE PROGRAMS section.

Global Business

Interim Assistant Dean: R. Conboy
Program Director: C. Fox

The primary objective of the International Business major is to provide an understanding of the importance of a global perspective on the part of business managers. The major provides an integrated framework for the study of the market environment in which international business firms operate and the impact of those environments upon managerial decision making. Possible careers may result in a variety of business and government sectors—either domestically or abroad.

MAJOR IN INTERNATIONAL BUSINESS

To be accepted into the International Business major and to progress into the upper division of the College, a student must meet the Progression Requirements as previously stated in the PRE-ACCOUNTING, PRE-BUSINESS, and PRE-ECONOMICS section. This major requires a minimum of 120 semester hours. Students must complete the General Education Requirements of the University and the Progression, Core, and Major Requirements of the Belk College of Business.

The following Core, Major, and Major Elective Courses are required. Students may attempt each of the Progression, Core, and Major Courses two times. International Business majors are also required to study abroad.

**CORE COURSES**
- BLAW 3150 Business Law I
- COMM 3160 Business Communications
- ECON 3125 Managerial Economics
- FINN 3120 Financial Management
- INFO 3130 Management Information Systems
- MGMT 3140 Management and Organizational Behavior
- MGMT 3280 Business Policy
- MKTG 3110 Marketing Concepts
- OPER 3100 Operations Management

**MAJOR COURSES**
- ECON 3171 International Business Economics
FINN 3223 International Financial Management  
MGMT 3274 International Business Processes and Problems  
MGMT 3275 International Management  
MKTG 3215 Global Marketing Management  

**MAJOR ELECTIVES**  
*(Select one of the following courses*)  
AFRS 3265 African Economic Development  
ANTH 4120 Intercultural Communications  
GEOG 3105 Geography of the Global Economy  
IBUS 3400 International Business Internship**  
POLS 3151 International Political Economy  
POLS 3152 International Organizations  
POLS 3153 European Union  
POLS 3155 Latin American Political Economy  
POLS 3165 East Asia in World Affairs  
SPAN 3029 Cultural Dimension of Doing Business in Spanish-Speaking Countries  

*Other courses may be approved by the student's Academic Advisor.  

**The internship may be satisfied by working at least 150 hours at a company or other organization involved in international business. The work program and the company/association must be pre-approved by the Director of the Global Business Program. At least 80% of the student's work must be international in nature. While the internship experience is not required to be performed outside the U.S., it is strongly encouraged.  

**LANGUAGE REQUIREMENT**  
Students must attain competency in a second language. This can be fulfilled two ways:  

1.) Complete at least six semesters of course work in a foreign language. Students must take at least four language courses above the elementary level, including two courses at the advanced level (3000-level or above). It is recommended that 2201, 2210 (or 2202 if 2210 is not offered), 3201, and 3202—or their course equivalents—be taken.  

2.) Demonstrate proficiency in a foreign language at the 3202-level through a test administered by the Department of Languages and Culture Studies. Students are strongly encouraged to enhance their language skills by earning either a Certificate in Business Language (CBL) or a minor in their language of study. Those who do will have this extra effort recognized by the designation of “Language Intensive Option in Spanish” (or French, German, Japanese, etc.) on their final transcript.  

**STUDY ABROAD (3 hours)**  
This requirement may be satisfied by participating in an approved Study Abroad program outside of the U.S. and Canada during the Fall, Spring, or Summer semester for a minimum period of three weeks, while completing at least three credit hours of coursework.  

To obtain a B.S.B.A. in International Business, a student must meet the University requirements of a GPA of at least 2.0 overall and in the courses for the major. Students must earn a minimum grade of C in all Progression, Core, and Major Courses. When a student repeats a course, both the old grade and the new grade are included in the major and overall GPA. Courses repeated under the Grade Replacement Policy are excluded from the major GPA and overall computation. However, this repeated course does count as an attempt. Students must also meet the Belk College of Business residency requirements as described in the UNDERGRADUATE PROGRAMS section.
Department of Management  
belkcollege.uncc.edu

Chair:  D. Woehr
Surfmann Distinguished Professor of Business  
Ethics:  D. Arnold

Professors:  P. Davis, G. Kohut, D. Woehr, K. Zellars
Associate Professors:  J. Beggs, R. Conboy, I. E. Jernigan
Assistant Professors:  T. Beck, J. Gooty, J. Nebus
Lecturers:  C. Kane, T. Sgritta

DEGREE PROGRAMS

A program of study in the Department of Management leads to a Bachelor of Science in Business Administration (B.S.B.A.) degree with a major in Management. This major is designed to teach students to plan, organize, lead, and control business activities in both the public and private sectors. Students develop skills in decision making, leadership, motivation, problem solving, and teamwork.

Courses in this major include the following topics: management and organizational behavior, managerial ethics, decision-making techniques, managing human resources and developing communication skills that make for effective leadership. The objectives of the major are to provide each student with conceptual tools and develop managerial skills that support leadership in a variety of organizations.

UNC Charlotte also offers a Certificate in Business Entrepreneurship for undergraduate students from any major who are interested in learning the basic principles of entrepreneurship.

MAJOR IN MANAGEMENT

To be accepted into the Management major and to progress into the upper division of the College, a student must meet the Progression Requirements as previously stated in the PRE-ACCOUNTING, PRE-BUSINESS, and PRE-ECONOMICS section. This major requires a minimum of 120 semester hours. Students must complete the General Education Requirements of the University and the Progression, Core, and Major Requirements of the Belk College of Business.

The following Core, Major, and Major Elective Courses are required. Students may attempt each of the Progression, Core, and Major Courses two times.

CORE COURSES

BLAW 3150  Business Law I
COMM 3160  Business Communications
ECON 3125  Managerial Economics
FINN 3120  Financial Management
INFO 3130  Management Information Systems
MGMT 3140  Management and Organizational Behavior

MGMT 3280  Business Policy
MGMT 3241  Human Resource Management
MKTG 3110  Marketing Concepts
OPER 3100  Operations Management

MAJOR COURSES

MGMT 3287  Managerial Leadership

MAJOR ELECTIVES

(Select four of the following courses)

MGMT 3000  Topics in Management
MGMT 3170  Ethics and Global Capitalism
MGMT 3243  Employment Law
MGMT 3260  Managerial Communication
MGMT 3274  International Business Processes and Problems
MGMT 3275  International Management
MGMT 3277  Entrepreneurship
MGMT 3282  Managerial Ethics
MGMT 3800  Directed Study (Department Chair approval required)

To obtain a B.S.B.A. in Management, a student must meet the University requirements of a GPA of at least 2.0 overall and in the courses for the major. Students must earn a minimum grade of C in all required Progression, Core, and Major Courses. When a student repeats a course, both the old grade and the new grade are included in the major and overall GPA. Courses repeated under the Grade Replacement Policy are excluded from the major and overall GPA computation. However, this repeated course does count as an attempt. Students must also meet the Belk College of Business residency requirements as described in the UNDERGRADUATE PROGRAMS section.

CERTIFICATE IN BUSINESS ENTREPRENEURSHIP

Students will learn how to integrate business concepts, tools, and techniques with their primary field of study, leading to greater marketability post-graduation.

Key topics include:

- Initiation, development, and management of entrepreneurial firms
- Creating, designing, and evaluating new venture ideas
- Financial, legal, and technological concepts for start-up businesses
- Managerial communication, organizational growth, and professional resources for entrepreneurs

To be accepted into the Certificate in Business Entrepreneurship program, a student must have earned a minimum 2.0 GPA. The program consists of five courses, one of which can be a semester-long internship. Students may attempt each of these courses two times.

REQUIRED COURSES

ENTR 2101  Introduction to Entrepreneurship
To obtain a Certificate in Business Entrepreneurship, a student must meet the University requirements of a GPA of at least 2.0 overall and in the courses for the certificate. Students must earn a minimum grade of C in all required certificate courses. When a student repeats a course, both the old grade and the new grade are included in the certificate program GPA. Courses repeated under the Grade Replacement Policy are excluded from the major and overall GPA computation. However, this repeated course does count as an attempt. Students must also meet the Belk College of Business residency requirements as described in the UNDERGRADUATE PROGRAMS section.

Department of Marketing

Chair: S. Erevelles
Professors: C. Amato, C. Bodkin, S. Erevelles, L. Swayne
Associate Professors: J. Oakley
Assistant Professors: J. Hansen, R. Roundtree
Clinical Professor: K. Toomb

A program of study in the Department of Marketing leads to a Bachelor of Science in Business Administration (B.S.B.A.) degree with a major in Marketing. This major offers a curriculum suitable for students who are (1) planning to operate their own businesses and want to know how to utilize marketing, (2) preparing for positions in small to large organizations where specialized skills in marketing are required, and (3) seeking a strong background at the undergraduate level prior to undertaking graduate work.

The study of marketing provides students with an opportunity to prepare for careers in marketing management, product management, sales, advertising and promotions management, marketing research, retailing, and international marketing.

MAJOR IN MARKETING

To be accepted into the Marketing major and to progress into the upper division of the College, a student must meet the Progression Requirements as previously stated in the PRE-ACCOUNTING, PRE-BUSINESS, and PRE-ECONOMICS section. This major requires a minimum of 120 semester hours. Students must complete the General Education Requirements of the University and the Progression, Core, and Major Requirements of the Belk College of Business.

The following Core, Major, and Major Elective Courses are required. Students may attempt each of the Progression, Core, and Major Courses two times.

CORE COURSES
BLAW 3150 Business Law I
COMM 3160 Business Communications
ECON 3125 Managerial Economics
FINN 3120 Financial Management
INFO 3130 Management Information Systems
MGMT 3140 Management and Organizational
Behavior
MGMT 3280  Business Policy
MKTG 3110  Marketing Concepts
OPER 3100  Operations Management

MAJOR COURSES
MKTG 3219  Marketing Strategy

MAJOR ELECTIVES
(Select five of the following courses)
MKTG 3000  Topics in Marketing
MKTG 3210  Marketing Research and Analysis
MKTG 3211  Advertising and Promotions Management
MKTG 3212  Retailing Management
MKTG 3213  Professional Selling and Sales Management
MKTG 3214  Internet Marketing
MKTG 3215  Global Marketing
MKTG 3216  Consumer Behavior
MKTG 3220  Sports Marketing
MKTG 3400  Marketing Internship
MKTG 3800  Directed Study (Department Chair approval required)

To obtain a B.S.B.A. in Marketing, a student must meet the University requirements of a GPA of at least 2.0 overall and in the courses for the major. Students must earn a minimum grade of C in all Progression, Core, and Major Courses. When a student repeats a course, both the old grade and the new grade are included in the major and overall GPA. Courses repeated under the Grade Replacement Policy are excluded from the major and overall GPA computation. However, this repeated course does count as an attempt. Students must also meet the Belk College of Business residency requirements as described in the UNDERGRADUATE PROGRAMS section.

INTERNSHIP
Because the Department of Marketing is committed to experiential learning, it provides for Marketing majors to use one internship for academic credit. A proposal must be submitted and approved by the Department of Marketing Internship Coordinator prior to starting the internship. A minimum of MKTG 3110 (Marketing Concepts) with a C or better, an overall GPA of at least 2.5, and completion of at least two Marketing Electives are required. The student may not have a current or prior work history with the internship company.
The University of North Carolina at Charlotte’s College of Computing and Informatics (CCI) is part of a dynamic and exciting, educational, and research institution that combines the knowledge and expertise of multidisciplinary faculty, industry professionals, and students. The CCI was formed in 2000 as the College of Information Technology, with the mission of educating information specialists, conducting leading-edge research, and partnering with area businesses of great importance to the Charlotte community and the University. It was renamed the College of Computing and Informatics in 2006 in an effort to reflect the College’s commitment to maintain relevancy with the ever-changing world of information technology that impacts all of our lives on a daily basis.

With educational programs rooted in a strong foundation of research, the CCI combines the talents of on- and off-campus partners in achieving its mission. Academic programs include Bachelor’s, Master’s, and Ph.D. degree programs in computer science, software and information systems, and information technology. Committed to the concept of life-long learning, the College also offers undergraduate and graduate certificate programs.

A key component of all CCI academic programs is the team interaction between students, faculty, and community partners. Through their involvement in real-world projects, students apply what they learn, thus, giving them practical experience as they help businesses solve computing and informatics challenges.

The three primary missions of the CCI are:

- to educate and prepare the computing and informatics professionals of tomorrow
- to conduct leading-edge research in enterprise information systems
- to partner with area industry to develop computing and informatics solutions

ACADEMIC DEPARTMENTS

**BIOINFORMATICS AND GENOMICS**
The Department of Bioinformatics and Genomics offers a minor and courses in introductory bioinformatics and in biological databases.

**COMPUTER SCIENCE**
The Computer Science Department offers a wide variety of programs to match the diverse requirements of employers. The computer science major may pursue either a Bachelor of Science or a Bachelor of Arts degree.

The Bachelor of Science program offers the student two very different concentrations: computer science or computer engineering. In the computer science option, a student will study a broad core subject in computer science, then select a focus area for an in-depth study in Computing Systems, Game Design & Development, Graphics and Visualization, Intelligent Systems, or Networking & Distributed Computing. This program prepares students to continue their education in master’s or doctoral programs, or to enter the business world as a computer scientist.
The computer engineering option is more hardware-oriented. It prepares the graduate to enter the computer industry as a computer hardware design engineer.

The Bachelor of Arts program requires a more compact set of a computer science core. In addition to a primary CS focus area as in the B.S. program, it also requires 21-24 semester hours of a second focus area in a non-computer science discipline, possibly forming a minor in that discipline area. Graduates from the B.A. program are expected to have knowledge and skill in computer science plus a complementary discipline, such as business, cognitive science, biology, or any other discipline to which computing applies. The emphasis in this program is less theoretical/mathematical, and more on the applied side of computing.

SOFTWARE AND INFORMATION SYSTEMS
The Department of Software and Information Systems is primarily focused on the study of technologies and methodologies for information system architecture, design, implementation, integration, and management with particular emphasis on system security. An illustrative list of questions/issues of interests includes:

- Analysis and design methodologies of component-based software systems
- Integration and interoperation of information systems
- Theories and methodologies of software development
- Information system security architecture and protocols
- Design of efficient heterogeneous computer networks
- Architectures for distributed systems
- Collaborative system technology and design
- Human/computer interaction
- Design of information systems based on ubiquitous/pervasive computing
- Software engineering
- Quality, testing, and simulation of software designs
- Social, ethical, and policy issues related to IT
- Information system architectures for electronic enterprise
- Technologies for information system privacy

The Department of Software and Information Systems emphasizes the development of information systems and the interactions between people and those systems. The Bachelor of Arts program offers concentrations in the areas of Web Development, Software Engineering, Information Technology, and Financial Services Informatics. This degree program is designed to best prepare students to match the diverse requirements of employers.

EXPERIENTIAL LEARNING AND SERVICE OPPORTUNITIES

Students are encouraged to participate in professional work experiences in support of their academic and career development through the cooperative education, 49ership, internship, and service programs offered to them. The College works with the University Career Center to expand experiential learning offerings to enable more students to graduate with career-related experience. For more information about experiential learning opportunities, please see the University Career Center section in this Catalog.

COOPERATIVE EDUCATION PROGRAM

By participating in the Cooperative Education program, students in Computer Science and in Software & Information Systems may pursue their education along with alternating semesters of full-time work experiences so that they may be better prepared to enter their chosen professional career. Interested students should contact the University Career Center for more information.
Department of Bioinformatics and Genomics

Bioinformatics.uncc.edu

Chair: L. Mays
Professors: L. Mays, S. Sell
Associate Professors: C. Brouwer, C. Gibas, D. Livesay, A. Loraine, J. Weller
Adjunct Faculty: M. Benbow

Research within the Department of Bioinformatics and Genomics encompasses both Bioinformatics and Computational Biology, as defined by the National Institutes of Health (NIH). Our mission is to promote the development, use, and commercialization of novel computational approaches to help solve important biological problems, and to provide training in the science and technology that underlies them.

Currently, the department offers an undergraduate minor, as well as graduate programs and degrees. See the UNC Charlotte Graduate Catalog for details.

MINOR IN BIOINFORMATICS AND GENOMICS

Designed to introduce students to the collection, informatics analysis and interpretation of data derived from genomic and biological macromolecular investigations, the Minor in Bioinformatics and Genomics provides students with a foundation of understanding and the computing skill necessary to communicate in the increasingly data-centric life sciences. In addition to gaining first-hand experience with current technologies for high-throughput data generation, students will receive training in up-to-date methods for data handling and interpretation while developing an understanding of critical issues in bioinformatics research design, statistical data analysis, and the application of genomics domain knowledge.

PROGRAM REQUIREMENTS

The Minor in Bioinformatics and Genomics requires 19 credit hours consisting of the following required courses:

BINF 1101 Introduction to Bioinformatics and Genomics (3)
BINF 2101 Genomic Methods (3)
BINF 2101L Genomic Methods Lab (2)
BINF 2111 Introduction to Bioinformatics Computing (4)
BINF 2121 Statistics for Bioinformatics (3)
BINF 3101 Sequence Analysis (3)
BINF 4600 Bioinformatics Seminar (1)

Department of Computer Science

cs.uncc.edu

Chair: W. Ribarsky
Associate Chair: K. Chen
Assistant Chair and Director of Freshman Programs: J. Frazier
Director of MS Program: B. Wilkinson
Director of Information Technology PhD Program: J. Xiao

Bank of America Endowed Chair: W. Ribarsky

Professors Emeriti: M. Allen, G. Epstein, G. Revesz, J. Schell


Associate Professor Emeritus: H. Razavi

Assistant Professors: T. Barnes, J. Payton, R. Souvenir, Y. Wang, D. Wilson, W. Wu, M. Youngblood

Senior Lecturers: D. Cassidy, J. Frazier

Lecturers: C. Goodrum, R. Ilson, L. Lehmann, S. Scott

Adjunct Professors: L. Hodges, P. Jastreboff
Adjunct Assistant Professors: A. Dardzinska, A. Wieczorkowska

Computer Science is the cornerstone of modern information technology. It has revolutionized how we learn, communicate, entertain, conduct business, perform research, and practice medicine. This information revolution is just beginning and is providing computer scientists with nearly limitless opportunities to make satisfying and enriching contributions to society. We can think of the work of computer scientists as falling into three categories:

1.) They design and implement software. Computer scientists take on challenging programming jobs. They also supervise other programmers, keeping them aware of new approaches.

2.) They devise new ways to use computers. Progress in the CS areas of networking, database, and human-computer-interface enabled the development of the World Wide Web. Now, researchers are working to make robots to be practical aides that demonstrate intelligence, are
using databases to create new knowledge, and are using computers to help decipher the secrets of our DNA.

3.) They develop effective ways to solve computing problems. For example, computer scientists develop the best possible ways to store information in databases, send data over networks, and display complex images. Their theoretical background allows them to determine the best performance possible, and their study of algorithms helps them develop new approaches that provide better performance. Computer science spans the range from theory to programming. While other disciplines can produce graduates better prepared for specific jobs, computer science offers a comprehensive foundation that permits graduates to adapt to new technologies and new ideas.

The Department of Computer Science offers programs leading to four degrees: Bachelor of Arts, Bachelor of Science, Master of Science, and Ph.D. in Information Technology. (See the UNC Charlotte Graduate Catalog for information on the M.S. and Ph.D. degrees). Students are prepared for their profession through a comprehensive program of courses and research opportunities in Departmental state-of-the-art computing labs.

BACHELOR OF ARTS: COMPUTER SCIENCE

The Computer Science Concentration consists of 39-42 hours in computer science, 3-9 additional hours of ITCS/ITIS at 3000 or above, and 12 hours in mathematics and statistics. Courses included are: ITCS 1212, 1212L, 1213, 1213L, 2175, 2214, 2215, 3146, 3155, 3160, 3688; 12 hours in one of the CS focus areas listed below; 3-6 hours of ITCS 4155, 4232, 4650, 4651, 4990, or 4991 for capstone experience; MATH 1120, 2164 STAT 1220, 2223; or MATH 1241, 1242, 2164, STAT 2122. PHIL 1105, ITIS 2211, and ENGL 2116 are also required.

A component of 21-24 semester hours of approved non-computer science courses forming an integrated program of secondary focus must be included. A three-hour bridge course is included in the 21-24 hours. This course bridges between CS and the secondary focus discipline, which can be an ITCS course or a course in the other discipline. The secondary focus in business consists of ACCT 2121, 2122, ECON 2101, 2102, INFO 3231, 3234, 3236/3240 plus ITCS/INFO 2231 as a required bridge course. The secondary focus in cognitive science consists of PSYC 3115, 3116, PHIL 3245, ITIS 3130; and any two from ITIS 3131, ENGL 4161, 4167, 4263, PHIL 3235, 3265, PSYC 3122, 3313, 4316 with ITCS 3216 as a required bridge course. In general, a secondary focus consists of 9 hours at the 3000-level or above, plus an additional 12 hours of approved non-ITCS courses, forming an integrated program in a complementary (or applied) area to computer science, possibly forming a minor in that discipline area.

BACHELOR OF ARTS: COMPUTER SCIENCE, FINANCIAL SERVICES INFORMATICS CONCENTRATION

The Financial Services Informatics Concentration consists of 27 hours in financial services courses that include ACCT 2121, ACCT 2122, ECON 2101, ECON 2102, FINN 3120, FINN 3221, FINN 3226, ITCS/ITIS 1301, and ITCS/ITIS 3301; 36 hours of courses in informatics. These include ITCS 1212, ITCS 1212L, ITCS 1213, ITCS 1213L, ITCS/ITIS 2301, ITCS 3155, ITCS 3160, and ITCS 3688; ITIS 1210, ITIS 2300, ITIS 3130, ITIS 3200, ITIS 3300, and ITIS 4220. There is a 6 hour component in Financial Services Informatics Industry Foundations Capstone I and II. There are nine hours of mathematics and statistics courses, including MATH 1120, STAT 1220, and STAT 2223. A 6 hour block is dedicated to PHIL 1105 and ITIS 2211. Finally, there is a requirement for 6 hours of COMM 2105 and ENGL 2116.

BACHELOR OF SCIENCE: COMPUTER SCIENCE

The Computer Science Concentration consists of 45-48 hours of computer science, 6-9 additional hours of ITCS/ITIS at 3000 or above, and 12 hours in mathematics and statistics.

Courses included are: ITCS 1212, 1212L, 1213, 1213L, 2175, 2214, 2215, 3146, 3155, 3160, 3181, 3181L, 3688, 4102, 12 hours in one of the CS focus areas listed below; 3-6 hours of ITCS 4155, 4232, 4650, 4651, 4990, or 4991 for capstone experience; MATH 1120, 2164 STAT 1220, 2223; or MATH 1241, 1242, 2164, STAT 2122. PHIL 1105, ITIS 2211, and ENGL 2116 are also required.

A component of 15 semester hours of approved non-computer science courses forming an integrated program of outside concentration must be included. The business outside concentration consists of a prescribed set of courses from the College of Business and one 3000-level course from a restricted set of choices. The mathematics outside concentration consists of 9 semester hours of approved mathematics courses at the 3000 level or above (6 hours of additional electives must be selected in this case). In general, an outside concentration consists of 6 hours at the 3000-level or above, plus an additional 9 hours of approved non-ITCS courses, forming an integrated program of secondary strength.

FOCUS AREAS

Computing Systems
- ITCS 3110 Compiler Construction
- ITCS 3112 Design and Implementation of Object-Oriented Systems
- ITCS 3143 Operating Systems
MINOR IN COMPUTER SCIENCE

Requirements for the minor in Computer Science include completion of 24 hours of computer science: ITCS 1212, 1212L, 1213, 1213L, 2175, 2214, 2215, 3146, 3160, and 3688.

CERTIFICATE IN GAME DESIGN AND DEVELOPMENT (GDD)

The Game Design and Development certificate provides undergraduate students with the opportunity to reach a demonstrated level of competence in game design and development. Course-work towards the certificate in GDD can be used for credit towards the Bachelor’s degree in Computer Science. However, its primary purpose is to provide a well-defined target for students who want to advance their knowledge of modern game design and development techniques and work with a variety of professionals, from artists to writers, to being the vision for an interactive game or media product to life. The certificate may be pursued concurrently with any of the undergraduate degree programs at UNC Charlotte.

The certificate will be awarded upon completion of five to six undergraduate level courses (15-18 credits) in the area of game design and development. Up to a maximum of six transfer credits may be applied to the certificate. Course substitutions may be made at the discretion of the GDD Certificate Coordinators. The Certificate requires all courses taken for the certificate to be passed at the C level or above, and a GPA in all certificate courses of 2.5 or above.

To obtain the certificate, a student needs to:

1) Take the following four compulsory courses:
   - ITCS 4230 Intro to Game Design & Development
   - ITCS 4231 Advanced Game Design & Development
   - ITCS 4232 Game Design & Development Studio
   - ITCS 4120 Intro to Computer Graphics

2) Take one two-course sequence from:
   - Artificial Intelligence (18 credits total)
     - ITCS 3153 Intro to Artificial Intelligence
     - ITCS 4236 A.I. for Computer Games
   - Computation (18 credits total)
     - ITCS 4237 Audio Processing for Entertainment Computing
     - A computation-related course approved by the Certificate Coordinators
   - Graphics (15 credits total)
     - ITCS 4120 Introduction to Computer Graphics
     - ITCS 4235 Game Engine Construction
   - Networking (18 credits total)
     - ITCS 3166 Introduction to Computer Networks
     - A game-networking related course approved by the Certificate Coordinators
   - Other (15-18 credits total)
     - A sequence of two related courses (generally from ITCS/ITIS at the 3000 level or above) approved by the GDD Certificate Coordinators.

ADMISSION REQUIREMENTS

To be admitted into the Undergraduate Certificate in Game Design and Development, students must meet the general University requirements for admission into Undergraduate Certificate Programs. These University-level requirements include:

1) An undergraduate degree or admission to an undergraduate degree program at UNC Charlotte.
2) An application submitted to the Registrar if
applicant already holds an undergraduate degree, or to the department offering the program if applicant does not hold an undergraduate degree.

3) Official transcripts for previous degree(s) and course work
4) A Declaration of Program form (Change of Major/Minor form) listing the certificate program.

In addition, the program expects a current working knowledge of two higher-level languages, including at least one procedural language; and a familiarity with computer applications. The following minimal background in mathematics is also required: two semesters of calculus and one semester of discrete structures. Individuals who have worked at a high professional level in the computer industry may be able to substitute work experience for specific subject area admission requirements.

Students who anticipate applying Certificate courses toward an undergraduate degree program should seek advice from that program prior to enrolling. Admission to an undergraduate degree program does not ensure admission into a discipline-related certificate program.

Suggested Curriculum: B.A. in Computer Science

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**Total Credit Hours = 120**

*A mathematics option consisting of MATH 1241, 1242, and 2164, and STAT 2122 may be selected as an alternate to the math courses listed.*
### Suggested Curriculum: B.A. in Computer Science, Financial Services Informatics Concentration

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Total Credit Hours = 120

### Suggested Curriculum: B.S. in Computer Science

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#### Spring Semester

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**Total Credit Hours = 120**

### EARLY-ENTRY PROGRAM:

**Master of Science in Computer Science**

Exceptional undergraduate students at UNC Charlotte may be accepted into the Master of Science in Computer Science and begin work toward a graduate degree before completion of the baccalaureate degree. The criteria for admission are the following:

1) A student may be accepted into the Early-Entry Program at any time after completion of 75 semester hours of undergraduate work applicable to the appropriate degree although it is expected that close to 90 hours will have been earned by the time the first graduate course is taken.

2) The application process and all required documentation (e.g., test scores, transcripts, letters of recommendation) are the same for early entry students as for other applicants to the program. Admission must be recommended by the Department of Computer Science and approved by the Graduate School. The admission status will be “provisional” pending the award of the undergraduate degree.

3) To be accepted into this program an undergraduate student must have at least a 3.2 overall GPA and a minimum 3.3 GPA in the department of Computer Science.

4) If an Early-Entry student has not met the normal graduate admission requirements of a 2.75 overall undergraduate GPA and a 3.0 junior senior GPA at the end of his/her baccalaureate degree, she/he will be dismissed from the graduate program.

5) Students accepted into an Early-Entry Program will be subject to the same policies that pertain to other matriculated graduate students. Generally, it will be assumed that early entry students will finish their baccalaureate degrees before they complete 15 hours of graduate work.

6) This Early-Entry Program is also accelerated in which up to 12 hours earned at the graduate level may be substituted for required undergraduate hours. In other words, up to 12 hours of graduate work may be "double counted" toward both the baccalaureate and graduate degrees.

### Approved Course Substitutions for Early/Accelerated Entry into Computer Science MS program

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<thead>
<tr>
<th>Required CSCI U/G</th>
<th>Graduate substitutions</th>
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<tbody>
<tr>
<td>ITCS 3160 Database Design &amp; Implementation</td>
<td>ITIS 5160 Applied Database, (applies for graduate credit only if entering the MSIT program), or ITCS 6160 Database Systems, (applies for graduate credit only if entering the MS Computer Science program)</td>
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<tr>
<td>ITCS 4102 Programming Languages</td>
<td>ITCS 5102 Survey of Programming Languages</td>
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<tr>
<td>ITCS 3143 Operating Systems</td>
<td>ITCS 6144 Operating Systems Design</td>
</tr>
<tr>
<td>ITCS 3155 Software Engineering</td>
<td>ITCS 6112 S/W Systems Design &amp; Implementation</td>
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<td>ITCS 3181 Logic &amp; Computer Systems + ITCS 3181L Computer Systems Lab &amp; Recitation OR ITCS 3182 Computer Organization &amp;</td>
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<tr>
<td>ITCS 5141 Computer Org &amp; Architecture</td>
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Department of Software and Information Systems

Chair: B. Chu
Assistant Chair and Director of Undergraduate Programs: B. Long
Professors: E. Al-Shaer, B. Chu, M. Hadzikadic, W. Tolone, Y. Zheng
Associate Professors: A. Raja, H. Lipford, Y. Wang, D. Wilson, X. Wu
Assistant Professors: C. Latulipe, M. Shehab, W. Wang
Lecturers: B. Long, A. Kombol
Adjunct Professors: P. Foley, T. Inskeep, T. Kitrick, F. Williams
Adjunct Lecturers: Callahan, He, J. Jancula

The Bachelor of Arts in Software and Information Systems is designed for students interested in pursuing a career in Web Development, Software Engineering, or Information Technology. This degree will also well prepare students to pursue graduate studies in related areas. The focus of this program includes:

- Network-based Application Development
- Software Engineering (design, integration, testing, and assurance)
- e-Business Technologies
- Information Security and Privacy
- Human – Computer Interaction
- IT Infrastructure Design
- Ubiquitous Computing
- Financial Services Informatics

The Department of Software and Information Systems offers both undergraduate and graduate programs. The undergraduate program leads either to the Bachelor of Arts in Software and Information Systems or to a minor in Software and Information Systems. The graduate program leads to a Master of Science in Information Technology (see the UNC Charlotte Graduate Catalog for information on the M.S. degree). Graduate certificate programs in Information Security and Privacy and Information Technology Management are also available. To assist with their studies, students have access to advanced computer labs and software where they can practice and experiment in controlled environments. In addition, the Department maintains a high degree of interaction with working industry professionals who provide real-world expertise and experience.
**BACHELOR OF ARTS: SOFTWARE AND INFORMATION SYSTEMS**

Under this program, the requirements for the B.A degree may be fulfilled by completing the traditional program or any of four concentrations. The traditional program emphasizes advanced programming and mathematics skills. It is intended for students who have a general interest in information technology and who want to maintain maximum flexibility in course selection and job opportunity. The Web Development concentration emphasizes software development using Internet and World-Wide Web technologies that are increasingly the default model for business-customer interaction. The Software Engineering concentration integrates mathematics and computer science to achieve classical engineering approaches to software system problem solving. The Information Technology concentration emphasizes usability, security, and reliability of IT infrastructures, writing and communications skills. These four concentrations prepare students for a wide variety of jobs or graduate studies. The Financial Services Informatics concentration is designed to meet the needs of the financial services sector with a unique combination of finance and information technology courses, industry internships, and sponsored capstone projects.

A common feature of this degree program is that students in all concentrations must complete a course in critical thinking, PHIL 1105, and a course in ethics that addresses issues of information technology. A special section of LBST 2211, Ethical Issues in Personal, Professional, and Public Life, will be designated as Ethical Issues: Technology (EI:T). Students in all concentrations must complete a course in critical thinking, PHIL 1105, and a course in ethics that addresses issues of information technology. A special section of LBST 2211, Ethical Issues in Personal, Professional, and Public Life, will be designated as Ethical Issues: Technology (EI:T).

**SOFTWARE AND INFORMATION SYSTEMS CONCENTRATION**

This concentration requires 120 credit hours total, including 51 hours of major courses, 12 hours of English and communications courses, 12 hours in mathematics and statistics, 10 hours of sciences, 6 hours of critical thinking and ethics, and 11-14 hours of General Education courses and free electives. Required major courses include: ITIS 2110, 2214, 2215, 3160, and 3688; PHIL 1105 and ITIS 2211; 3 hours of approved ITIS or ITCS courses numbered 3000 or above. Required English and communications courses include ENGL 1101 and ENGL 1102 (or ENGL 1103), ENGL 2116, and COMM 2105. The mathematics and statistics requirements can be fulfilled by completing one of two course sequences:

- MATH 1120, 2164; and STAT 1220, 2223
- MATH 1241, 1242, 2164; and STAT 2122

In addition, each student must complete at least 15 semester hours in a concentration of courses that form a coherent body of study related to developing applications of information systems. At least six of the 15 hours must be upper division courses. These courses must be completed in a major outside the College of Computing and Informatics and require approval of the student’s academic advisor.

**WEB DEVELOPMENT CONCENTRATION**

This concentration requires 120 credit hours total, including 54 hours of major courses, 12 hours of English and communications courses, 12 hours in mathematics and statistics, 10 hours of sciences, 6 hours of critical thinking and ethics, and 11-14 hours of General Education courses and free electives. Required major courses include: ITIS 1210, 2110/2100L, 2300, 3105, 3110/3110L, 3130, 3150, 3200, 3300, 4166, 4170, 4221; ITCS 1212/1212L, 1213/1213L, 2214, 3160, and 3688; PHIL 1105 and ITIS 2211; 3 hours of approved ITIS or ITCS courses numbered 3000 or above. Required English and communications courses include ENGL 1101 and ENGL 1102 (or ENGL 1103), ENGL 2116, and COMM 2105. The mathematics and statistics requirements can be fulfilled by completing one of two course sequences:

- MATH 1120, 2164; and STAT 1220, 2223
- MATH 1241, 1242, 2164; and STAT 2122

In addition, each student must complete at least 15 semester hours in a concentration of courses that form a coherent body of study related to developing applications of information systems. At least six of the 15 hours must be upper division courses. These courses must be completed in a major outside the College of Computing and Informatics and require approval of the student’s academic advisor.

**SOFTWARE ENGINEERING CONCENTRATION**

This concentration requires 120 credit hours total, including 54 hours of major courses, 12 hours of English and communications courses, 12 hours in mathematics and statistics, 10 hours of sciences, 6 hours of critical thinking and ethics, and 11-14 hours of General Education courses and free electives. Required major courses include: ITIS 1210, 2110/2100L, 2300, 3105, 3150, 3200, 3300, 4166, 4170, 4221; ITCS 1212/1212L, 1213/1213L, 2214, 3160, and 3688; PHIL 1105 and ITIS 2211; 3 hours of approved ITIS or ITCS courses numbered 3000 or above. Required English and communications courses include ENGL 1101 and ENGL 1102 (or ENGL 1103), ENGL 2116, and COMM 2105. The mathematics and statistics requirements can be fulfilled by completing one of two course sequences:

- MATH 1120, 2164; and STAT 1220, 2223
- MATH 1241, 1242, 2164; and STAT 2122
In addition, each student must complete at least 15 semester hours in a concentration of courses that form a coherent body of study related to developing applications of information systems. At least six of the 15 hours must be upper division courses. These courses must be completed in a major outside the College of Computing and Informatics and require approval of the student’s academic advisor.

**INFORMATION TECHNOLOGY CONCENTRATION**

This concentration requires 120 credit hours total including 45 hours of major courses, 21 hours of English and communications courses, 6 hours of critical thinking and ethics, and 11-14 hours of General Education courses and free electives. Required major courses include: ITIS 1210, 2110/2110L, 2300, 3110/3110L, 3130, 3200, 3300, 3320; ITCS 1212/1212L, 1213/1213L, 3160, and 3688; INFO 3211; PHIL 1105 and ITIS 2211; and 6 hours of approved ITIS or ITCS courses numbered 3000 or above. The required mathematics and statistics courses are MATH 1100 (or MATH 1103) and STAT 1220. Required English and communications courses include ENGL 1101 and ENGL 1102 (or ENGL 1103), ENGL 2116, COMM 2100, COMM 2105, a choice of ENGL 4181 or ENGL 4183, and a choice of ENGL 4182 or COMM 3141.

In addition, each student, in consultation with his or her academic advisor, must complete at least 21 semester hours by either:

1) Completing the requirements for a minor chosen by the student even if doing so requires more than 21 hours (if the minor can be completed in less than 21 hours, the remaining hours become free electives) OR

2) Completing a series of courses in a major that does not offer a minor. These courses must form a coherent body of study related to developing applications of information systems. The courses selected must include a minimum of 9 hours of upper division courses.

In completing this requirement, students must comply with all prerequisites and other applicable academic regulations for courses offered by any department, even if doing so requires exceeding the 120-hour minimum necessary for graduation.

**FINANCIAL SERVICES INFORMATICS CONCENTRATION**

This concentration requires 120 credit hours total including 36 hours of informatics courses, 27 hours in financial services courses, 6 hours of financial services capstone courses, 9 hours of mathematics and statistics, 10 hours of sciences, 6 hours of critical thinking and ethics, and 23-26 hours of General Education courses and free electives. The required Informatics core consists of ITCS 1212/1212L, ITCS 1213/1213L, ITIS/ITCS 2301, ITCS 3155, ITCS 3160, and ITIS 3688; ITIS 1210, ITIS 2300, ITIS 3130, ITIS 3200, ITIS 3300, and ITIS 4220. The required Financial Services core consists of ACCT 2121, ACCT 2122, ECON 2101, ECON 2102, FINN 3210, FINN 3221, FINN 3226, ITIS/ITCS 1301, and ITIS/ITCS 3301. A 6-hour, two-semester capstone sequence of courses is required. There are nine hours of mathematics and statistics courses, including MATH 1120, STAT 1220, and STAT 2223. Six hours of courses, PHIL 1105 and LBST 2211 (Ethics designated sections), are dedicated to critical thinking and technology ethics. Finally, there is a requirement for 6 hours of COMM 2105 and ENGL 2116. The remaining courses complete the General Education course required of all students.

**Suggested Curriculum: B.A. in Software and Information Systems**

**(Software and Information Systems Concentration)**

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*Total Credit Hours = 120

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* A mathematics option consisting of MATH 1241, 1242, 2164, and STAT 2122 may be selected as an alternate to the math courses listed.

**Also fulfills the General Education Requirement for an LBST 22XX course in ethics and cultural critique.
**Fourth Year**

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**Total Credit Hours = 120**

*A mathematics option consisting of MATH 1241, 1242, 2164, and STAT 2122 may be selected as an alternate to the math courses listed.

**Also fulfills the General Education Requirement for an LBST 22XX course in ethics and cultural critique.

Suggested Curriculum:
B.A. in Software and Information Systems
(Information Technology Concentration)

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**Total Credit Hours = 120**

*A mathematics option consisting of MATH 1241, 1242, 2164, and STAT 2122 may be selected as an alternate to the math courses listed.

**Also fulfills the General Education Requirement for an LBST 22XX course in ethics and cultural critique.

Suggested Curriculum:
B.A. in Software and Information Systems
(Information Technology Concentration)
### Second Year

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### Third Year

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### Fourth Year

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**Total Credit Hours = 120**

*MATH 1103 may be substituted for MATH 1100.

**Also fulfills the General Education Requirement for an LBST 22XX course in ethics and cultural critique.

### Suggested Curriculum:

**B.A. in Software and Information Systems**

(Financial Services Information Concentration)

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*Total Credit Hours = 120*
Students Should Select Three of the Following Courses (9 credit hours)
- ITIS 2110/2110L IT Infrastructure I: Design and Practice (3)
- ITCS 1213/1213L Introduction to Computer Science II (3)
- ITIS 3110/3110L IT Infrastructure II: Design and Practice* (3)
- ITIS 3130 Human-Computer Interaction (3)
- ITIS 3150 Rapid Prototyping and Interface Design (3)
- ITIS 3200 Introduction to Information Security and Privacy* (3)
- ITCS 3160 Data Base Design and Implementation*
- ITIS 3300 Software Requirements and Project Management* (3)
- ITCS 3688 Computers and their Impact on Society** (3)

*These courses have their own prerequisite requirements (which are also in this list). The student must complete all prerequisites.
**This course meets the General Education Requirements for written and oral communications.

MINOR IN SOFTWARE AND INFORMATION SYSTEMS

This program is designed to provide students with the Information Technology knowledge necessary for today’s information-based society. Students will not only gain hands-on knowledge of how to use the Internet to develop effective and easy-to-use applications but also will understand critical issues in designing information systems such as requirements development, integration, security and privacy, legal and policy considerations, and project management.

PROGRAM REQUIREMENTS
The minor requires 18 credit hours. Students may include no more than three (3) ITCS courses in the SIS minor. Students must take at least two upper division courses. Students must receive a grade of C or higher in a course in order for that course to count toward the SIS minor.

Required Courses (9 credit hours)
- ITIS1210 Introduction to Web-Based Information Systems (3)
- ITCS 1212/1212L Introduction to Computer Science (3)
- ITIS 2300 Introduction to Web-Based Application Development (3)
MISSION
The mission of the College of Education at UNC Charlotte is to prepare highly effective and ethical professionals who have a positive impact on children, youth, families, community, and schools and who are successful in urban and other diverse settings. This mission is accomplished through teaching, research, and community engagement that lead to improved practice and by working in partnership with schools, communities, and university colleagues.

PROGRAM RESPONSIBILITIES
The College of Education has these undergraduate program responsibilities:

- To develop, deliver, and evaluate high quality undergraduate programs that prepare teachers and other professional personnel for schools and related agencies.
- To operate programs that meet the standards of external governing, licensing, and accrediting agencies.
- To address the culturally diverse educational needs of its particular region.
- To initiate and support activities that enrich the global perspectives of its faculty and students.
- To respond effectively to the problems and needs of children, their families, and professionals in schools and related agencies.

PROGRAM VALUES
The College of Education holds these program values:

- We are a community of scholars who are committed individually and collectively to creating learning opportunities and environments where we enhance the capacity of our students to have a positive impact on children, youth, communities, families and schools. We are committed to meeting the developmental and educational needs of our students and to maximize the growth, development, and learning of each individual.

- In our programs of study, we are committed to high quality programs that are standards-based, to the ongoing assessment of candidates and programs for the purpose of continuous improvement, to collaboration and outreach, and to the highest standards of professional practice and scholarship. We are committed to international understanding and involvement.

- In fulfilling our professional roles, we are committed to the generation, dissemination, and application of knowledge. We, therefore, expect that faculty will be teacher-scholars and that they will maintain a balanced commitment to teaching, research, and service. We have a strong commitment to academic excellence and exceptional quality in all that we do.

- In our dealings with each other, our students, and our professional colleagues in schools and
communities, we are committed to valuing diversity and to speaking out against oppression. We are committed to thoughtfulness, reflection, flexibility, and the exploration of new ideas. We are committed to openness, honesty, forthrightness, and the highest standards of integrity and ethical behavior. We strive to be collegial, collaborative, human, and respectful of others, even when we are not in total agreement with their views or with their work, and we are committed to being sensitive to and supportive of others, including students, staff, faculty, and our professional colleagues in the community.

CONCEPTUAL FRAMEWORK FOR TEACHER EDUCATION PROGRAMS

RISING TO THE CHALLENGE: PREPARING EXCELLENT PROFESSIONALS

Excellent professionals possess a comprehensive knowledge base that is comprised of conceptual knowledge, pedagogical knowledge, and reflective knowledge. Conceptual knowledge relates to the individual’s broad knowledge base as well as a more specialized knowledge base in the content field and knowledge of how human beings learn and develop. Pedagogical knowledge entails the understanding of methods of effective teaching: knowledge of how to teach subject matter and knowledge of how to teach the subject matter to specific learners, attention to individual differences, and how to create environments that support learning. Reflective knowledge enables cogent evaluation of teaching practice, including self-appraisal. Excellent professionals understand how to blend these types of knowledge in actuating teaching and learning in positive ways. Excellent professionals make connections between the knowledge base and the uses of this knowledge. Four particular uses of knowledge are emphasized within professional education programs at UNC Charlotte:

1.) To provide effective instruction in order to have a positive impact on P-12 student learning
2.) To respond to the needs of P-12 learners and to provide developmentally appropriate, age appropriate, individually appropriate, and culturally responsive instruction
3.) To collaborate with families, communities, and colleagues to benefit children, youth, and young adults
4.) To provide effective leadership for the improvement of professional practices at a variety of levels for the benefit of children, youth, and young adults.

The UNC Charlotte community charged with the preparation of teachers, including the College of Education, the College of Arts + Architecture, and the College of Liberal Arts and Sciences and their respective departments, contribute to the knowledge base through course instruction and other worthy experiences. In summary, UNC Charlotte develops excellent professionals who are knowledgeable, effective, reflective, responsive to equity and diversity, collaborative, and who are leaders in their profession.

UNDERGRADUATE PROGRAMS

MAJOR PROGRAMS

- Child and Family Development: (Birth-Kindergarten)
- Elementary Education (grades K-6)
- Middle Grades Education (grades 6-9)
- Special Education: General Curriculum (grades K-12)
- Special Education: Adapted Curriculum (grades K-12)

MINOR PROGRAMS

- Child and Family Development
- Foreign Language Education
- Secondary Education
- Teaching English as a Second Language

In collaboration with appropriate departments in the College of Liberal Arts and Sciences, the College of Education offers the Minor in Secondary Education that can lead to licensure to teach in the following areas of Secondary Education (grades 9-12):

- Comprehensive Science
- Comprehensive Social Studies
- English
- Mathematics

In collaboration with the corresponding departments in the College of Arts + Architecture, the College of Education offers professional education coursework that can lead to licensure to teach in the following areas of K-12 Education:

- Art
- Dance
- Music
- Theatre

In collaboration with the Department of Languages and Culture Studies in the College of Liberal Arts and Sciences, the College of Education offers a minor in Foreign Language Education and licensure (grades K-12) in the following areas:

- French
- German
- Spanish
All professional education programs in the College of Education are approved by the North Carolina State Board of Education, and they have continuing accreditation from the National Council for Accreditation of Teacher Education (NCATE).

### TEACHER EDUCATION POLICIES AND PROCEDURES

**ADMISSION TO A TEACHER EDUCATION PROGRAM**

Students should apply for admission to a specific teacher education program during their Sophomore year, and they must complete the admissions process in order to enroll in any professional education courses at the 3000 level or above.

Minimum requirements for admission to all teacher education programs at UNC Charlotte include:

1. An overall GPA of at least 2.5 in a minimum of 45 semester hours in University courses (or approved program-specific requirements, such as 30 semester hours in University courses for the Special Education and Special Education/Elementary Education dual majors)
2. A grade of C or above in both EDUC 2100 and SPED 2100 (or approved program-specific requirements such as MDSK 2100 for the Minor in Secondary Education)
3. Passing scores on the Praxis I: Academic Skills Assessments in Reading, Writing, and Mathematics; or an acceptable substitute score on the SAT or ACT
4. Approval of the Chair (or his or her designee) of the Department that offers the program

Some teacher education programs have additional requirements for admission (e.g., references, an interview, additional tests, discipline-specific coursework). Information about these additional requirements and about procedures for applying for admission to a teacher education program can be obtained in the Office of Teacher Education Advising and Licensure (TEAL) in the College of Education. Students in Art, Music, Dance, or Theatre especially should check for specific admission requirements in their major department.

**RETENTION IN A TEACHER EDUCATION PROGRAM**

There are two minimum requirements for retention in a teacher education program:

1. A grade of C or above (a) in all professional education courses and (b) in all courses in the student's area of teaching specialization
2. GPA of 2.5 or above (a) overall, (b) in all professional education courses, and (c) in the student's area of teaching specialization

Some teacher education programs have additional or higher requirements for retention. Information about these additional requirements can be obtained in the program’s home department. Note: Requirements for admission to student teaching are higher than requirements for retention in the program.

**ADMISSION TO A YEAR-LONG INTERNSHIP AND STUDENT TEACHING**

Most teacher education programs incorporate student teaching in a year-long internship that spans a student’s Senior year. The year-long internship consists of one semester of intensive clinical work in the classroom while completing coursework on campus. This clinical semester is followed by a full semester of student teaching, usually completed in the same classroom.

Students must apply and be formally admitted to a year-long internship two semesters prior to the start of student teaching, which is typically in the second semester of the Junior year. In addition, during the first semester of their year-long internship, students are screened for eligibility for student teaching. The minimum requirements for admission to student teaching are higher than the requirements for retention, as shown below:

1. Senior status
2. Completion of all other course work in a student's program of study
3. An overall GPA of 2.50 or above in the student’s total program of study
4. Grades of C or above in all professional education courses and a GPA of 2.75 or above in those courses
5. Grades of C or above in all courses in the student's area of teaching specialization and a GPA of 2.75 or above in those courses
6. Prior admission to a teacher education program
7. A recommendation from the student's faculty advisor(s) certifying readiness to student teach

Some teacher education programs have additional requirements for admission to the year-long internship and student teaching. Information about those requirements can be obtained from the program’s home department.

Information about procedures and deadlines for applying for year-long internships and student teaching in all programs can be obtained in the Office of Field Experiences in COED 139 or online at education.uncc.edu/ofe.
Department of Counseling
education.uncc.edu/counseling

Chair: H. L. Harris
Faculty: L. Abrams, V. Balog, P. Ceballos, J. Culbreth, S. Furr, P. Lassiter, K. Ng, P. Post, C. Rapisarda, L. Veach, E. Wierzalis

Please see the UNC Charlotte Graduate Catalog for graduate programs and degrees related to the Department of Counseling.

Department of Educational Leadership
education.uncc.edu/eart

Chair: D. Hancock

Please see the UNC Charlotte Graduate Catalog for graduate programs and degrees related to the Department of Educational Leadership.

Department of Middle, Secondary, and K-12 Education
education.uncc.edu/mdsk

Chair: W. DiBiase
Professors: J. Jones, T. Perez
Associate Professors: W. DiBiase, T. Heafner, C. Hutchinson, L. Kolano
Lecturers: M. Brigman, T. Ellis

BACHELOR OF ARTS: MIDDLE GRADES EDUCATION

The B.A. program in Middle Grades Education qualifies graduates for an entry-level (“A”) license to teach two of the following four content areas in grades 6-9: English language arts, mathematics, science, or social studies.

PROGRAM OBJECTIVES
Graduates of the program are prepared to: implement a middle grades philosophy to its fullest intent; design curriculum that is integrated, competency- and technology-based, and relevant to students’ future academic and career expectations; transform their knowledge of two disciplines so they are accessible to middle grades students; use teaching methods appropriate to the unique developmental needs of early adolescents; make informed decisions about curricular issues and instructional practices in middle grades education; demonstrate pervasive caring and innovative leadership in their work with students and colleagues; and function as lifelong learners.

DEGREE REQUIREMENTS

The major in Middle Grades Education leading to the B.A. degree requires 120-128 semester hours as follows:

GENERAL EDUCATION (hours vary)
Course options are listed on the program’s Academic Planning Worksheet. Course selections must be initially approved by the student’s Pre-Education advisor in the Office of Teacher Education Advising and Licensure (TEAL) and finally approved by the student’s major advisor after admission to the Teacher Education Program in Middle Grades Education.

ACADEMIC CONCENTRATIONS (41-48 hours)
Academic Concentrations are required in two of the following four subject areas relevant to a middle grades classroom:
- English Language Arts
- Mathematics
- Science
- Social Studies

The required and elective courses in each Academic Concentration are listed on the program’s Academic Planning Worksheet. Course selections must be initially approved by the student’s Pre-Education advisor in the Office of Teacher Education Advising and Licensure (TEAL) and finally approved by the student’s major advisor after admission to the Teacher Education Program in Middle Grades Education.

PROFESSIONAL EDUCATION (48 hours)
EDUC 2100 An Introduction to Education and Diversity in Schools (3)*
SPED 2100  Introduction to Students with Special Needs (3)*

Admission to Teacher Education and advisor’s approval are required in order to register for any of the following courses. See Academic Planning Worksheet in department for course sequence.

EDUC 4291  Modifying Instruction for Learners with Diverse Needs in Middle/Secondary Schools (3)
MDLG 3130  The Early Adolescent Learner (4)
MDLG 3131  The Philosophy and Curriculum of Middle Grades Education (4)
MDSK 3151  Instructional Design and Technology Integration (3)
MDSK 4150  Assessment, Reflection, and Management Practices (3)
READ 3255  Integrating Reading and Writing Across Content Areas (3) (W)

Two of the following courses according to the selected areas of concentration:

ENGL 4254  Teaching English/Communication Skills to Middle and Secondary School Learners (3)
MAED 3232  Teaching Mathematics to Middle School Learners (3) and/or
MDSK 4251  Teaching Science to Middle and Secondary School Learners (3)
MDSK 4253  Teaching Social Studies to Middle and Secondary School Learners (3)

and

MDLG 4440  Student Teaching/Seminar: 6-9 Middle Grades (12)**

*Corequisite courses EDUC 2100 and SPED 2100 should be taken during a student’s Sophomore year; both must be completed with a grade of C or above to qualify for admission to the Teacher Education Program in Middle Grades Education.

**Enrollment in MDLG 4440 requires admission to student teaching through the College’s Office of Field Experiences.

Students are required to complete a year-long internship beginning the semester prior to student teaching and ending upon the successful completing of student teaching.

ACADEMIC ADVISING

Freshmen and Sophomores who intend to major in Middle Grades Education are classified as Pre-Education students in Middle Grades Education. They are assigned an advisor in the College’s Office of Teacher Education Advising and Licensure (TEAL), who helps them select appropriate General Education and Academic Concentration courses and who helps them meet the requirements for admission to teacher education. Upon admission to the Teacher Education Program in Middle Grades Education, which typically occurs at the end of the Sophomore year, students are assigned a major advisor in Middle Grades Education, who helps them plan the remainder of their program of studies. Assignment of the student’s major advisor is the responsibility of the Chair of the Department of Middle, Secondary, and K-12 Education (MDSK).

MINOR IN K-12 FOREIGN LANGUAGE EDUCATION

A minor in K-12 Foreign Language Education requires 36 hours, including two 3-hour foreign language methodology courses and 12 hours for the student teaching internship. Students wishing to minor in K-12 Foreign Language Education must be approved for admission to the minor by meeting statewide teacher education program admission requirements. Advising and admission to the minor are administered through the Office of Teacher Education and Licensure (TEAL) in the College of Education. The criteria for admission include 45 earned credit hours, a GPA of 2.5 or above, a major in a foreign language for which there is teacher licensure (French, German and Spanish), a grade of C or above in either MDSK 2100 or EDUC 2100 and SPED 2100, passing scores on the SAT, ACT, or Praxis I tests, and the recommendation of their major advisor. After admission to the minor, advising is offered through the Department of Middle, Secondary, and K-12 Education in collaboration with advising in the student's major department. The minor is designed to be coordinated with Junior and Senior level coursework in the major, with the final semester being full-time student teaching. Admission to student teaching is dependent upon a minimum score of advanced-low on the Oral Proficiency Interview (OPI). Successful completion of the minor will lead to a recommendation for the initial teaching license in the K-12 subject area associated with the student’s major (French, German or Spanish).

MINOR IN SECONDARY EDUCATION

The programmatic purpose of the Minor in Secondary Education is to prepare excellent and reflective teacher candidates in the fields of English, Mathematics, Science (Comprehensive Science, Biology, Chemistry, Earth Science, and Physics), and Social Studies (Comprehensive Social Studies, History, and Geography) to successfully utilize 21st Century knowledge, skills, and dispositions for addressing the demands of an ever-changing global and ethnically diverse society, community, and classroom while implementing effective, research-based content pedagogy to meet the individual cognitive and emotional needs of all students, and
systematic and reflective analysis of connections between practice and student learning.

A minor in Secondary Education requires 33 hours, including a 3-hour introductory course and 15 hours for the student teaching semester. Students wishing to minor in Secondary Education must be approved for admission to the minor by meeting statewide teacher education program admission requirements. Advising and admission to the minor are administered through the Office of Teacher Education and Licensure (TEAL) in the College of Education. The criteria for admission include 45 earned credit hours, a GPA of 2.5 or above, a major in a subject area for which there is teacher licensure (English, math, biology, chemistry, earth sciences, physics, history, and geography), a grade of C or above in MDSK 2100, passing scores on the SAT, ACT, or Praxis I tests, and the recommendation of their major advisor. After admission to the minor, advising is offered through the Department of Middle, Secondary, and K-12 Education in collaboration with advising in the student’s major department. The minor is designed to be coordinated with Junior and Senior level coursework in the major, with the final semester as the student teaching semester, which combines a frontloaded pedagogy course (MDSK 4150) and full-time student teaching. Successful completion of the minor will lead to a recommendation for the initial teaching license in the high school subject area associated with the student’s major.

The undergraduate Minor in Secondary Education qualifies graduates for an entry-level (Standard Professional I) license to teach in one of the following subject areas in grades 9-12: English, History, Comprehensive Social Studies, Mathematics, Biology, Chemistry, Earth Sciences, Physics, or Comprehensive Science. Students major in an appropriate Arts and Sciences discipline and minor in secondary education through completion of a three-semester sequence of courses, which includes a year-long internship incorporating the student teaching semester. The Comprehensive Social Studies license builds on a major in History or Geography; the Comprehensive Science license builds on a major in one of the Sciences listed above.

PROGRAM OBJECTIVES
Graduates of the Minor in Secondary Education are prepared to meet the state and national standards for new teachers in the following areas: content and content pedagogical knowledge; authentic applications of instructional design; effective integration of advanced and emerging technologies; respectful learning environments for a diverse student population; facilitation of learning for all students through collaboration and use of multiple instructional strategies; student motivation and management; purposeful and reflective practice; systematic formative and summative assessment; and leadership in schools, community, and profession.

DEGREE REQUIREMENTS

The undergraduate Minor in Secondary Education requires a major in the College of Liberal Arts and Sciences in a discipline relevant to the curriculum in grades 9-12 and a maximum of 128 hours as follows:

GENERAL EDUCATION (32-38 hours)
These course requirements vary with a student’s academic major in Arts and Sciences and are defined by faculty in each major.

CORE & RELATED COURSES IN AN APPROPRIATE ARTS AND SCIENCES MAJOR (30-78 hours)
Academic majors relevant to secondary education include English, Geography, History, Mathematics, Biology, Chemistry, Earth Sciences, and Physics. The requirements for each major are defined by faculty in that major.

SECONDARY EDUCATION (33 hours)
MDSK 2100 (Diversity and Inclusion in Middle/Secondary Schools) should be taken prior to a student’s final three semesters and must be completed with a grade of C or above for the student to qualify for admission to the Teacher Education Program in the selected field of secondary education. Other admission requirements include an overall GPA of at least 2.5 and passing scores on the Praxis I examinations (or acceptable SAT or ACT scores). Students should consult an advisor in the Office of Teacher Education Advising and Licensure as soon as they begin considering teacher education in order to graduate on time.

Admission to Teacher Education and Middle, Secondary, K-12 Education Department (MDSK) advisor’s approval are required in order to register for any of the following courses:

SEMESTER 1
SECD 4140 Adolescence and Secondary Schools (3)
MDSK 3151 Instructional Design and Technology Integration (3)

Students are required to complete a year-long internship beginning the semester prior to the student teaching semester and ending upon the successful completion of the student teaching semester.

SEMESTER 2
(First Semester of Year-Long Internship)
EDUC 4291 Modifying Instruction for Learners with Diverse Needs in Middle/Secondary Schools (3)
READ 3255 Integrating Reading and Writing Across
Content Areas (W) (3)

One of the following content specific methods courses:

- MDSK 4251 Teaching Science to Middle and Secondary School Learners (3)
- MAED 3252 Teaching Mathematics to Secondary School Learners (3)
- MDSK 4253 Teaching Social Studies to Middle and Secondary School Learners (3)
- ENGL 4254 Teaching English/Communication Skills to Middle and Secondary School Learners (3)

SEMESTER 3
(Second Semester of Year-Long Internship)

Enrollment in MDSK 4150 and any one of these four student teaching courses requires admission to student teaching through the College’s Office of Field Experiences, a GPA of 2.75 in the major, licensure area, and in professional education courses with no grades lower than a C, and a 2.5 cumulative GPA.

- MDSK 4150 Assessment, Reflection, and Management Practices for Teachers of Middle and Secondary Learners (3)
- SECD 4451 Student Teaching/Seminar: 9-12 Secondary English (12) (O)
- SECD 4452 Student Teaching Seminar: 9-12 Secondary Mathematics (12) (O)
- SECD 4453 Student Teaching/Seminar: 9-12 Secondary Science (12) (O)
- SECD 4454 Student Teaching/Seminar: 9-12 Secondary Social Studies (12) (O)

ELECTIVE COURSES

These courses must be approved by the student’s advisor.

MINOR IN TEACHING ENGLISH AS A SECOND LANGUAGE

A minor in Teaching English as a Second Language (TESL) requires the completion of 18 hours of specialized coursework. This program is designed for students already seeking an initial license in another content area who wish to gain expertise in the education of English Language Learners in the K-12 public school setting. Students interested in pursuing TESL must be approved for admission to the minor by meeting statewide teacher education program admission requirements. Advising and admission to the minor are administered through the Office of Teacher Education and Licensure (TEAL) in the College of Education.

The criteria for admission include 45 earned credit hours, a GPA of 2.5 or above, a major in a subject area for which there is teacher licensure (Elementary Education, Special Education, Secondary or Middle Grades Education, Foreign Language Education, etc.), a grade of C or above in MDSK 2100 or equivalent, passing scores on the SAT, ACT, or Praxis I tests, and the recommendation of their major advisor. After admission to the minor, advising is offered through the Department of Middle, Secondary, and K-12 Education in collaboration with advising in the student's major department. The minor is designed to be coordinated with Junior and Senior level coursework in the major, with the final semester that includes an advanced seminar/practicum in TESL. Successful completion of the minor will lead to a recommendation for North Carolina add-on K-12 licensure in ESL.

LICENSURE IN K-12 EDUCATION IN FOREIGN LANGUAGES AND IN THE FINE AND PERFORMING ARTS

The Department of Middle, Secondary, and K-12 Education (MDSK) in the College of Education assists Departments in the College of Liberal Arts and Sciences to serve students interested in K-12 licensure for teaching French, German, Spanish, Art, Dance, Music, or Theatre. With the assistance of their major advisor, students apply to the Teacher Education Program through the Office of Teacher Education Advising and Licensure (TEAL) in the College of Education and through their department at the end of their Sophomore year. Interested students are also encouraged to visit the TEAL Office at any time before applying to teacher education.

ACADEMIC ADVISING

With the assistance of their major advisor in Arts and Sciences, students intending to seek a teaching license in an area of secondary education (grades 9-12) apply to the Teacher Education Program through the Office of Teacher Education Advising and Licensure (TEAL) in the College of Education. Interested students are encouraged to visit the Teacher Education Advising and Licensure (TEAL) at any time before applying to teacher education. Upon admission to the Teacher Education Program, which typically occurs at the end of the Sophomore year or beginning of the Junior year, students are assigned a secondary education advisor in the Advising Center of the Department of Middle, Secondary, and K-12 Education. This advisor has particular responsibility for guidance about professional education coursework. Assignment of the student’s Minor in Secondary Education advisor is the responsibility of the Chair of the Department of Middle, Secondary, and K-12 Education (MDSK).
Department of Reading and Elementary Education

Chair: J. Hinson
Professors: H. Jaus, R. Rickelman, K. Wood
Associate Professors: R. Audette, A. Good, M. Green, S. Hancock, M. Mraz, J. Piel, T. Rock, B. Taylor, M. Yon
Clinical Assistant Professors: L. Baucom, M. Chapman, J. Frazier, S. Fuller, M. Hathcock, C. Luce, J. Vintinner
Lecturers: C. Glover, C. Hopper

BACHELOR OF ARTS: ELEMENTARY EDUCATION

Coordinator: Sherell Fuller

The B.A. program in Elementary Education qualifies graduates for an entry-level (“A”) license to teach grades K-6.

PROGRAM OBJECTIVES
Graduates of the program are prepared to meet the 10 INTASC standards for new teachers in Content Pedagogy, Student Development, Diverse Learners, Multiple Instructional Strategies, Motivation and Management, Communication and Technology, Planning, Assessment, Reflective Practice, School and Community Involvement.

DEGREE REQUIREMENTS

The major in Elementary Education leading to the B.A. degree requires at least 120 semester hours as follows:

GENERAL EDUCATION (35-48 hours)
Course options are listed on the program’s Academic Planning Worksheet. Course selections must be initially approved by the student’s Pre-Education advisor in the Teacher Education Advising and Licensure (TEAL) Office and finally approved by the student’s major advisor after admission to the Teacher Education Program in Elementary Education. General Education requirements may also be met through the “Articulation Agreement” with North Carolina Community Colleges.

ACADEMIC CONCENTRATION
Students must complete a concentration of 18 semester hours in an area of study to obtain North Carolina licensure in K-6 grades. The academic concentration includes both required courses and optional course selections in order to complete the concentration. An approved minor will also meet this requirement.

The required and elective courses in each Academic Concentration are listed on the program’s Academic Planning Worksheet. Course selections must be initially approved by the student’s Pre-Education advisor in the Teacher Education Advising and Licensure Office and finally approved by the student’s major advisor after admission to the Teacher Education Program in Elementary Education. With advisor approval, a full second major or a bona fide minor in an Arts and Sciences discipline may be substituted for the academic concentration.

RELATED LICENSURE COURSES (3 hours)
Three hours of a creative arts activity course, with a different area of emphasis from the LBST Arts and Society course (e.g., ARTB 1206, ARTE 2121, MUSC 2191, THEA 1100, THEA 1160, and others approved by the advisor.

PROFESSIONAL EDUCATION COURSES (57 hours)
EDUC 2100 An Introduction to Education and Diversity in Schools (3)*
SPED 2100 Introduction to Students with Special Needs (3)*

SEMESTER 1
ELED 3111 Instructional Design and the Use of Technology with Elementary School Learner (2)
ELED 3120 The Elementary School Child (3)
READ 3224 Teaching Reading to Primary Level Learners (3)
EXER 3228 Integrating Physical Activity and Movement in Elementary Schools (2)
EXER 3229 Teaching Health and Safety to Elementary School Learners (2)
MAED 3222 Teaching Mathematics in the Elementary School, K-2 (3)

SEMESTER 2 (METHODS SEMESTER)
ELED 3221 Teaching Science to Elementary School Learners (3)**
ELED 3223 Teaching Social Studies to Elementary School Learners (3)**
ELED 3226 Teaching Language Arts to Elementary School Learners (3)**
MAED 3224 Teaching Mathematics in the Elementary School, 3-6 (3)**
READ 3226 Teaching Reading to Intermediate Grade Learners (3)**
SEMESTER 3 (YEAR-LONG INTERNSHIP)
ELED 4111 Instructional Design and the Use of Technology with Elementary School Learners (1)***
ELED 4121 Measuring and Evaluating Learning in the Elementary School Curriculum (3)***
ELED 4122 Research and Analysis of Teaching Elementary School Learners (3)***
ELED 4220 Integrating Curriculum for Elementary School Learners (3)***
EDUC 4290 Modifying Instruction for Learners with Diverse Needs (3)***
EDUC 4292 Multicultural Education: Modifying Instruction for Urban Learners (3)***

SEMESTER 4 (STUDENT TEACHING)
ELED 4420 Student Teaching/Seminar: K-6 Elementary Education (15)****

*Corequisite courses EDUC 2100 and SPED 2100 may be taken during a student’s Freshman or Sophomore year; both must be completed with a grade of C or above to qualify for admission to the Teacher Education Program.

**All Methods Courses must be taken during Semester 2
**All 4000-level courses must be taken in the last semester of coursework (Yearlong Internship).
***Enrollment in ELED 4420 requires admission to student teaching through the College’s Office of Field Experiences.

ELECTIVES
The number of free electives will vary depending upon how General Education and related licensure requirements are fulfilled. Students must complete at least 120 hours to meet the University graduation requirement.

ADDITIONAL REQUIREMENTS
The successful completion of a degree in Elementary Education includes meeting the North Carolina Department of Public Instruction’s licensure requirements for K-6 certification. Consequently, additional requirements must be completed during the student’s program and are listed below. Since state licensure requirements often change, additional work may be required to complete the program with a teaching license.

DISPOSITIONS
Dispositions are consistent patterns of behavior or habits that may impact teaching effectiveness. At the time of entry to the program, all elementary education majors are asked to sign a dispositions statement that fully identifies and describes behavior patterns that are appropriate and inappropriate in professional conduct. Elementary education students are expected to demonstrate professional dispositions in all of their university activities (courses, clinicals, etc.).

PLANNING SHEET
All elementary education students are tracked through their program with a Program Planning Sheet. The original planning sheet is kept in the student’s folder and lists all courses taken, transfer hours, General Education and concentration requirements met, and courses remaining in the program. Note that the university requires that the minimum number of credits in a degree program is 120 credit hours.

CLINICALS
All courses in the professional program include a clinical requirement where students complete specific activities or designated hours in an elementary school. Clinicals are designed to expose students to diverse school demographics, locations, and programs.

YEAR-LONG INTERNSHIP
Teacher education candidates participate in the yearlong internship during their final year of the program. During the first semester, students spend one day per week in an assigned classroom while completing coursework on campus. During the second semester of the internship, students complete full-time student teaching in the same classroom. Applications for this year-long internship are due two semesters before student teaching.

TECHNOLOGY REQUIREMENTS
Students admitted to the College of Education in Fall 2010 or later are required to complete the licensure portfolio (consisting of six (6) Evidences in TaskStream. Student begin this licensure portfolio while completing their coursework and finish the licensure portfolio during the student teaching semester. Candidates WILL NOT be allowed to proceed with the student teaching experience if the Evidences are not completed before the student teaching semester.

ACADEMIC ADVISING
Freshmen and Sophomores who intend to major in Elementary Education are classified as Pre-Education students in Elementary Education. They are assigned an advisor in the College’s Office of Teacher Education Advising and Licensure (TEAL), who helps them select appropriate General Education and Academic Concentration courses, and also helps them meet the requirements for admission to teacher education. Upon admission to the Teacher Education Program in Elementary Education, which typically occurs at the end of the Sophomore year, students will be advised in the Elementary Education Advising Center.
Note: Elementary education courses are available on a very limited basis in the summer.

Department of Special Education and Child Development
education.uncc.edu/spcd

Chair: L. Sherry
Professors Emeritus: B. Rowland, R. White
The Lake and Edward J. Snyder, Jr. Distinguished Professor of Special Education: D. Browder
Professors: M.L. Calhoun, V. Correa, F. Spooner, D. Test
Assistant Professors: J. Beattie, S. Lara-Cinisomo, C. O’Brien, P. Shue
Clinical Assistant Professors: J. Baxter, B. Romanoff, S. Wakeman
Lecturers: J. Brown, D. Deason, S. Rebich

BACHELOR OF ARTS: CHILD AND FAMILY DEVELOPMENT

The Child and Family Development program leading to the B.A. degree prepares graduates to work in educational and related settings that serve infants, toddlers, preschoolers, kindergartners with and without disabilities, and their families. The program prepares graduates for an entry-level (Professional Standard I) license in birth-kindergarten (B-K) education. Admission to and retention in the Child and Family Development major requires a GPA of at least 2.5.

PROGRAM OBJECTIVES
The goal of the CHFD program is to assure the development of competent professionals who support the potential of every family and child (prenatally through early childhood). Using a developmental framework, graduates are prepared to apply their understanding of the various stages of growth and development of young children in the context of evolving cultural, community, and societal systems. Graduates will have significant coursework and clinical experiences in a variety of settings in order to learn and apply evidence-based knowledge and practices in effectively utilizing screening and assessment procedures for young children with disabilities or who are at-risk for disabilities as well as designing, adapting, implementing, and evaluating individually appropriate learning environments for
young children from birth through kindergarten. In addition, graduates will be able to collaborate effectively with families and professionals to provide support for children who are culturally, linguistically, and ability diverse. Graduates of the program are prepared to meet the North Carolina Professional Teaching Standards and the ten Interstate New Teachers Assessment and Support Consortium (INTASC) Standards for new teachers in Content Pedagogy, Student Development, Diverse Learners, Multiple Instructional Strategies, Motivation and Management, Communication and Technology, Planning, Assessment, Reflective Practice, and School and Community Involvement.

**B-K LICENSURE:**
**CHILD AND FAMILY DEVELOPMENT**

### DEGREE REQUIREMENTS

This major requires 120 semester hours as follows:

**GENERAL EDUCATION (31-35 hours)**

Course options are listed on the program’s Academic Planning Worksheet. Course selections must be approved by the student’s major advisor.

**PRE-ACADEMIC CORE (9 hours)**

EDUC 2100 Introduction to Education and Diversity in Schools (3)*
SPED 2100 Introduction to Students with Special Needs (3)*
EIST 4100 Computer Applications in Education (3)

*Corequisite courses EDUC 2100 and SPED 2100 should be taken during a student’s Sophomore year; both must be completed with a grade of C or above to qualify for admission to the Teacher Education Program.

**CHILD AND FAMILY DEVELOPMENT (60 hours)**

CHFD 2111 Child Study: Interpreting Children’s Behavior (3)
CHFD 2113 Development: Prenatal to 36 Months (3)
CHFD 2412 The Practice of Observation, Documentation, and Analysis of Young Children’s Behavior (3)

Admission to Teacher Education and advisor’s approval are required in order to register for any of the following courses:

- CHFD 3112 Supporting Diverse Young Learners – Birth through Eight (3)
- CHFD 3113 Families as the Core of Partnerships (3)
- CHFD 3114 Responsive Approaches for Infants and Toddlers (3)
- CHFD 3115 An Ecological Approach to Learning and Development – Early Childhood to Pre-Adolescence (3) (W)
- CHFD 3116 Approaches to Integrated Curriculum for Young Children (3–8) (3)
- CHFD 3118 Family Support (3)
- CHFD 3412 Internship 1: The Family and the Community (Birth to 3 Years) (3–6)
- CHFD 3416 Internship 2: Child and Family Development (3)

CHFD 4410 Student Teaching/Seminar: B-K Child and Family Development (15)**
SPED 4111 Issues in Early Intervention for Young Children with Disabilities (3)
SPED 4112 Authentic Approaches to the Assessment of Young Children with Disabilities: Birth through Kindergarten (3)
SPED 4210 Developmental Interventions for Young Children with Disabilities: Birth through Kindergarten (3)

**RELATED COURSES (12 hours)**

SOCY 2132 Sociology of Marriage & the Family (3)
SOCY – One approved SOCY course at the 4000 level related to the Family Theme (3)
PSYC – Two approved PSYC courses at or above the 3000 level that relate to cognitive, social, and/or personality development (6)
Elective Courses (4-8 hours) - These courses must be approved by the student’s advisor in Child and Family Development.

### ACADEMIC ADVISING

Students who intend to major in Child and Family Development and to earn B-K licensure are classified as Child and Family Development majors. They are assigned a major advisor within the Child and Family Development Program, who helps them select appropriate coursework for their major. To be admitted to the Teacher Education Program in the Birth to Kindergarten program, students must have completed an application, attained a C or above in EDUC 2100 and SPED 2100, attained a total score of 522 on the PRAXIS 1, and attained an overall GPA of at least 2.5 in at least 45 semester hours of coursework. Applications are available from and are to be returned to the College’s Teacher Education, Advising, and Licensure (TEAL) Office for admission to the Teacher Education Program (typically at the end of the Sophomore year). Course selections for each subsequent semester must be approved by the student’s advisor in Child and Family Development. Assignment of the student’s major/minor advisor is the responsibility of the Coordinator of the Child and Family Development program in the Department of Special Education and Child Development (SPCD).

### MINOR IN CHILD AND FAMILY DEVELOPMENT

Students who have a GPA of 2.5 or above may elect a minor in Child and Family Development. A minor requires 18 semester hours: CHFD 2111, CHFD 2113, CHFD 3115, and nine semester hours of child and family development electives, approved by the advisor.
BACHELOR OF ARTS: SPECIAL EDUCATION

The B.A. program in Special Education includes a choice of one of two licensure areas: the (1) Special Education: General Curriculum license or the (2) Special Education: Adapted Curriculum license. The Special Education: General Curriculum license qualifies graduates for an entry-level Standard Professional I license to teach children with special needs in grades K-12 with mild disabilities who will take the North Carolina standard end of year accountability test with or without accommodations and/or modifications. The Special Education: Adapted Curriculum license qualifies graduates for an entry-level Standard Professional I license to teach children with special needs in grades K-12 with severe disabilities who will take an alternative assessment for the North Carolina standard end of year accountability test.

PROGRAM OBJECTIVES
Graduates of the program are prepared to: provide individually planned, systematically implemented, and carefully evaluated instruction for students with special needs; provide educational services to students with special needs in general classrooms, resource classrooms, and other educational settings; and help students with special needs achieve the greatest possible personal self-sufficiency and success in present and future environments. Graduates of the program are prepared to meet the North Carolina Professional Teaching Standards and the ten Interstate New Teachers Assessment and Support Consortium (INTASC) Standards for new teachers in Content Pedagogy, Student Development, Diverse Learners, Multiple Instructional Strategies, Motivation and Management, Communication and Technology, Planning, Assessment, Reflective Practice, and School and Community Involvement.

PROFESSIONAL EDUCATION (60 hours)
EDUC 2100 Introduction to Education and Diversity in Schools (3)*
SPED 2100 Introduction to Students with Special Needs (3)*

*Courses EDUC 2100 and SPED 2100 should be taken during a student’s Sophomore year; both must be completed with a grade of C or above to qualify for admission to the Teacher Education Program in Special Education.

Admission to Teacher Education and advisor’s approval are required in order to register for any of the following courses.

COURSES REQUIRED BY BOTH LICENSURE AREAS
CHFD 3115 An Ecological Approach to Learning and Development - Early Childhood to Pre-Adolescence (3) OR
PSYC 2120 Child Psychology (3) OR
PSYC 2121 Adolescent Psychology (3) OR
MDSK 3160 Learning and Development: Birth through Adolescence (3)

SPED 3100 Introduction to General Curriculum for Students with Special Needs (3)
SPED 3173 Special Education Assessment (3) (W)
SPED 3175 Instructional Planning in Special Education (3)
SPED 4170 Special Education Consultation and Collaboration (3) (W)
SPED 4270 Classroom Management (3)
SPED 4272 Teaching Mathematics to Learners with Special Needs (3)
SPED 4275 Teaching Reading to Elementary Learners with Special Needs (3)
SPED 4277 Teaching Written Expression to Learners with Special Needs (3)
SPED 4279 Content-Area Instruction for Students with Special Needs (3)
SPED 4316 Transition Planning and Service Delivery (3)
TESL 4204 Inclusive Classrooms for Immigrant Students (3)

COURSES SPECIFIC TO GENERAL CURRICULUM LICENSE
SPED 4276 Teaching Reading to Middle and Secondary Learners with Special Needs (3)
SPED 4475 Student Teaching/Seminar: Special Education K-12: General Curriculum (15) (O)**

COURSES SPECIFIC TO ADAPTED CURRICULUM LICENSE
SPED 4271 Systematic Instruction in the Adapted Curriculum (3)
SPED 4274 General Curriculum Access and Adaptations (3)
SPED 4280 Multiple Disabilities (3)
SPED 4476 Student Teaching/Seminar: Special Education K-12: Adapted Curriculum (15) (O)**

**Enrollment in SPED 4475 or SPED 4476 requires admission to student teaching through the College’s Office of Field Experiences.
ELECTIVES (19-29 hours)
Students may select approved electives to fulfill this degree requirement.

ACADEMIC ADVISING

Freshmen and Sophomores who intend to major in Special Education are classified as Pre-Education students in Special Education. These students are assigned an advisor in the College's Office of Teacher Education, Advising, and Licensure (TEAL), who help students select appropriate General Education and elective courses, and who will help them meet the requirements for admission to teacher education. To be admitted to the Teacher Education Program in Special Education, students must have completed an application by November 1st, attained a C or above in EDUC 2100 and SPED 2100, passed all three parts of the Praxis I test, and attained an overall GPA of at least 2.5 in at least 30 semester hours of coursework.

Applications for admission to the Teacher Education Program in Special Education are available from and are to be returned to TEAL by the end of the first semester of the Sophomore year. Students are then assigned a major advisor in special education who assists planning the remainder of the program of study, including selection of one of the two licensure areas. Course selections for each subsequent semester must be approved by the student's advisor in special education. Assignment of the student's major advisor is the responsibility of the Special Education Undergraduate Coordinator in the Department of Special Education and Child Development (SPCD).

BACHELOR OF ARTS:
SPECIAL EDUCATION – GENERAL CURRICULUM AND ELEMENTARY EDUCATION K-6 DUAL PROGRAM**

In addition to the traditional Special Education General and Adaptive K-12 Program options, the Department of Special Education and Child Development in collaboration with the Department of Reading and Elementary Education also offers a BA in Special Education - General Curriculum and Elementary Education K-6 Dual Program. The Special Education - General Curriculum and Elementary Education K-6 Dual Program qualifies graduates for an entry-level Standard Professional I license in Special Education General Curriculum K-6 and Elementary Education K-6. Graduates from the dual program will be licensed to teach children with high incidence disabilities in grades K-6 who will take the North Carolina standard end of year accountability test with or without modifications. Additionally, the dual program also qualifies graduates for an entry level position to teach Elementary school learners in grades K-6.

PROGRAM OBJECTIVES

Graduates of the Special Education - General Curriculum and Elementary Education K-6 Dual Program are prepared to: provide individually planned, systematically implemented, and carefully evaluated instruction for students with disabilities; provide educational services to students with disabilities in general classrooms, resource classrooms, and other educational settings; and help students with disabilities achieve the greatest possible personal self-sufficiency and success in present and future environments. Graduates of the program are prepared to meet the North Carolina Professional Teaching Standards and the ten Interstate New Teachers Assessment and Support Consortium (INTASC) Standards for new teachers in Content Pedagogy, Student Development, Diverse Learners, Multiple Instructional Strategies, Motivation and Management, Communication and Technology, Planning, Assessment, Reflective Practice, and School and Community Involvement.

DEGREE REQUIREMENTS

Special Education - General Curriculum and Elementary Education K-6 Dual Program leading to the B.A. degree requires 126 semester hours as follows:

GENERAL EDUCATION (35 hours)
Course options are listed on the program’s Academic Planning Worksheet. Course selections must be initially approved by the student’s Pre-Education advisor in the Office of Teacher Education, Advising, and Licensure (TEAL) and finally approved by the student’s major advisor after admission to the Teacher Education Program in the Special Education - General Curriculum and Elementary Education K-6 Dual Program. General Education requirements may also be met through the “Articulation Agreement” with North Carolina Community Colleges.

RELATED LICENSURE COURSES (3 hours)
Students select one of the following Creative Arts courses:

ARTB 1206  Concept Practices (3)
ARTE 2121 Developmental Art (3)
MUSC 2191 Incorporating Music Into the Elementary Classroom (3)
THEA 1100 Exploration of Voice and Movement (3)
THEA 1160 Creative Drama for the Classroom Teacher (3)
PROFESSIONAL EDUCATION (88 hours)
EDUC 2100 Introduction to Education and Diversity in Schools (3)*
SPED 2100 Introduction to Students with Special Needs (3)*

*Corequisite (6 hours) courses EDUC 2100 and SPED 2100 should be taken prior to a student’s Sophomore year; both must be completed with a grade of C or above to qualify for admission to the Teacher Education Program in the Special Education - General Curriculum and Elementary Education K-6 Dual Program.

ADDITIONAL REQUIREMENT
SPEL 4000 Topics in Special Education: Dual Seminar (1)**

**This one credit seminar is an important and required introduction to the dual program, and it must be completed during the Fall semester of the student’s Sophomore year.

Admission to Teacher Education and advisor’s approval are required in order to register for any of the following courses.

COURSES REQUIRED FOR LICENSURE IN SPECIAL EDUCATION – GENERAL CURRICULUM AND ELEMENTARY EDUCATION K-6 DUAL PROGRAM
ELED 3110 Instructional Design and the Use of Technology with Elementary School Learners (2)
ELED 3120 The Elementary School Child (3)
ELED 3221 Teaching Science to Elementary School Learners (3)
ELED 3223 Teaching Social Studies to Elementary School Learners (3)
ELED 3226 Teaching Language Arts to Elementary School Learners (3)
ELED 4121 Measuring and Evaluating Learning in the Elementary School Curriculum (3)
ELED 4122 Research and Analysis of Teaching Elementary School Learners (3)
ELED 4220 Integrating Curriculum for Elementary School Learners (3)
EXER 3228 Elementary Physical Activity (2)
EXER 3229 Elementary Health Education (2)
MAED 3222 Teaching Mathematics to Elementary School Learners, Grades K-2 (3)
MAED 3224 Teaching Mathematics to Elementary School Learners Grades 3-6 (3)
READ 3224 Teaching Reading to Primary Level Learners (3)
READ 3226 Teaching Reading to Intermediate Grade Learners (3) (W)
SPED 3100 Introduction to General Curriculum for Students with Special Needs (3)
SPED 3173 Special Education Assessment (3) (W)
SPED 3175 Instructional Planning in Special Education (3)
SPED 4270 Classroom Management (3)
SPED 4272 Teaching Mathematics to Learners with Special Needs (3)
SPED 4275 Teaching Reading to Elementary Learners with Special Needs (3)
SPED 4277 Teaching Written Expression to Learners with Special Needs (3)
SPEL 4171 Special Education: Consultation and Collaboration in Elementary Schools (3) (W)

SPEL 4477 Student Teaching Seminar: Special Education – General Curriculum and Elementary Education K-6; Dual Program (15) (O)
TESL 4204 Inclusive Classrooms for Immigrant Students (3)

ACADEMIC ADVISING

Freshmen and Sophomores who intend to apply for the Special Education - General Curriculum and Elementary Education K-6 Dual Program are classified as Pre-Education students in the dual program. They are assigned an advisor in the College’s Office of Teacher Education, Advising, and Licensure (TEAL) who helps them select appropriate General Education courses and who helps them meet the requirements for admission to teacher education. To be admitted to the Teacher Education Program in the Special Education - General Curriculum and Elementary Education K-6 Dual Program students must have submitted an application to TEAL anytime after completion of their Freshman year, attained a C or above in EDUC 2100 and SPED 2100, passed all three parts of the Praxis I test, and attained an overall GPA of at least 2.5 in at least 30 semester hours of coursework. In addition, all applicants must submit a professional goals statement detailing their interest in obtaining dual licensure. Applications are available from and are to be returned to TEAL for admission to the Special Education - General Curriculum and Elementary Education K-6 Dual Program.

The Special Education - General Curriculum and Elementary Education K-6 Dual Program will accept 30 students per academic year. Once 30 applicants have been accepted into the dual program, the application process will be closed. Students can not apply to the dual program once they have already taken courses in another education program. Applications will be reviewed first by TEAL to determine that minimal acceptance requirements have been met. A second review of applications will occur by the Project Director of the dual program. During the duration of the program students will be advised by the Project Director of the Special Education - General Curriculum and Elementary Education K-6 Dual Program and/or the UG Special Education Advisor. Students accepted into the Special Education - General Curriculum and Elementary Education K-6 Dual Program will be required to attend advising sessions each semester during their completion of the program.
Support Offices and Resources

CENTER FOR ADOLESCENT LITERACIES

The Center for Adolescent Literacies (CAL) at UNC Charlotte focuses on developing instruction to make literacy and learning relevant and effective for adolescents and those who work with them. The Center also conducts and supports research and service in support of its primary mission.

CENTER FOR EDUCATIONAL MEASUREMENT AND EVALUATION

The Center for Educational Measurement and Evaluation (CEME) is a vibrant and scholarly organization whereby practitioners, policy makers, and our faculty and students can engage in mutually beneficial projects that will lead to evidence-based practice and improved educational outcomes for children and families in our region. The goal is to connect the expertise of the faculty of the College of Education to schools and related agencies in order to assist educational policy makers and administrators make informed decisions about educational policy.

CENTER FOR SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS EDUCATION

The Center for Science, Technology, Engineering, and Mathematics Education in COED 222 sponsors a wide variety of programs and projects that involve pre-service and in-service teachers and are designed to enhance the quality of instruction in science, technology, engineering, and mathematics, for both pre-college and university students.

MULTICULTURAL PLAY THERAPY CENTER

The mission of the Multicultural Play Therapy Center is to provide educational and supervision experiences for professional therapists in this region to support the emotional growth of children from diverse cultures through the process of play therapy. Play therapy training enables professionals to develop a therapeutic relationship with children aged 2½ - 10 using materials and communication skills that match the developmental needs of the child.

OFFICE OF EDUCATIONAL OUTREACH

The Office of Educational Outreach (OEO) serves to foster collaborative relationships between the university, surrounding schools, public agencies, and the community. Based within the College of Education in Room 162, OEO functions to develop, support, formalize, monitor, and publicize the service activities and projects of UNC Charlotte faculty in the greater Charlotte-Mecklenburg region. OEO, in partnership with other departments and colleges, facilitates numerous conferences, institutes, professional development activities, and symposia to promote community involvement and education.

OFFICE OF FIELD EXPERIENCES (OFE)

Located in COED 139, this office provides support services for school-based clinical experiences that students complete for courses and during year-long internships and student teaching. Field experiences - observing, interacting with, and teaching children and youth -- are a critical part of all undergraduate teacher education programs at UNC Charlotte. Early clinical experiences are required in specific courses and described in course syllabi. These field experiences continue throughout a student’s program, progressing from observation and analysis to planning and implementing instruction to assessing learning outcomes with PK-12 students. They culminate in a 15-week, full-time student teaching experience after completion of all other course work.

OFFICE OF TEACHER EDUCATION ADVISING AND LICENSURE (TEAL)

Located in COED 119, this office serves all students involved in teacher education programs. The staff, including a director and four full-time academic advisors, is responsible for:

- Promotion of Teacher Education programs and recruitment of students prior to their admission to UNC Charlotte
- Collaboration with Pre-Education students and advisors at community colleges in North Carolina
- Orientation and academic advisement of pre-education students prior to their admission to a specific Teacher Education Program (which typically occurs during their Sophomore year)
- Collaboration with departments within the College of Arts + Architecture and the College of Liberal Arts and Sciences concerning admission to Teacher Education Programs when those departments have teacher education tracks or degrees
- Academic support services for both students and their faculty advisors as students admitted to a teacher education program progress through their programs, complete student teaching, and apply for licensure
- Management of all applications for teacher licensure
• Follow-up contacts with graduates for purposes of both program and product evaluation.

In collaboration with academic departments involved in teacher education, the Office of Teacher Education Advising and Licensure is the College of Education’s central source of information about academic program requirements; criteria and procedures for admission to a specific teacher education program; student advising before admission to teacher education; schedules and applications for taking Praxis I and Praxis II examinations; requirements and procedures for obtaining licensure in North Carolina (or in other states that have reciprocity agreements with North Carolina), including the state’s licensure requirements for demonstration of advanced technology competencies; and final audits to ensure completion of all program and licensure requirements.

SPECIAL FACILITIES AND RESOURCES

Examples that support the work of both faculty and students in undergraduate teacher education programs include:

• The College of Education Building includes classrooms for reading and language arts; science and mathematics; and social studies.

• On the ground floor of the College of Education Building are two computer classrooms and two open computer labs.

• The College of Education Building includes a student lounge and undergraduate and graduate student study rooms.

• The Teacher Education Learning Community is a one-year program in Charles F. Lynch Hall for students who wish to become teachers. Community members participate in social activities, community service, professional development activities, and have the opportunity to take some General Education courses as a cohort group.

• The College of Education has partnerships with Professional Development Schools in the region, public schools that work closely with the College to provide excellent clinical experience opportunities.

• The Atkins Library supports teacher education programs through a large children’s literature collection on the 3rd floor, curriculum and instructional materials on the 2nd floor (library.uncc.edu/cimc); hotlinks from Jasmine, the online catalog, to curricular support materials such as Primary Search in EBSCO host which provides full text for over 50 children’s magazines (library.uncc.edu/electronic).

• Media Services in Atkins Library, maintains an extensive collection of audiovisual equipment and provides graphic and television production services to support instruction.

THE NC TEACHING FELLOWS PROGRAM

Please see the Honors College section of this Catalog for details.

THE HONORS IN EDUCATION PROGRAM

Please visit education.uncc.edu/honors or the Honors College section of this Catalog for details.

UNDERGRADUATE STUDENT ORGANIZATIONS

Examples of organizations that are especially relevant to undergraduate students in teacher education programs include:

Student National Education Association
The Student National Education Association (SNEA), affiliated with the North Carolina Association of Educators (NCAE) and the National Education Association (NEA)

Student Council for Exceptional Children
The Student Council for Exceptional Children (SCEC), affiliated with the Council for Exceptional Children (CEC)

College Middle Level Association
The College Middle Level Association promotes excellent teaching in the middle grades and support for middle grades teacher candidates.

Omicron Pi Chapter of Kappa Delta Pi
The Omicron Pi Chapter of Kappa Delta Pi, an international honor society for students in education

More information about these organizations for undergraduate students in teacher education is available online at studentorgs.uncc.edu, as well as in the Office of Teacher Education Advising and Licensure (TEAL) in COED 119.

UNDERGRADUATE STUDENT AWARDS

Examples of awards that recognize the achievements of undergraduate students in teacher education programs include:

Phi Kappa Phi Scholar Award
The Phi Kappa Phi Scholar Award, presented annually to a Junior majoring in a program in the College of Education who demonstrates outstanding leadership in an academic discipline and in research or independent study
Military Order of the Purple Heart Award
The Military Order of the Purple Heart Award, presented annually by the American Association of Colleges for Education to a Junior majoring in programs in the College of Education who has shown scholarly achievement, teaching ability, and concern for the educational rights of children with disabilities

North Carolina Alpha Chapter of Alpha Delta Kappa Memorial Scholarship
The North Carolina Alpha Chapter of Alpha Delta Kappa Memorial Scholarship, awarded annually to a student who has been admitted to a teacher education program and demonstrated both outstanding academic performance and a commitment to teaching

Alma and Sharon Goudes Educational Scholarship
The Alma and Sharon Goudes Educational Scholarship, presented annually to highly capable men and women who have demonstrated their intention to teach English and/or mathematics in middle or secondary schools

Bertha and Irvin Fishman Award
The Bertha and Irvin Fishman Award, presented annually to an individual with a strong academic record who plans to teach at the middle school level

Ronald J. Anderson Memorial Scholarship
The Ronald J. Anderson Memorial Scholarship, presented annually to an individual with strong academic achievement who has overcome significant physical disability

More information about these awards for undergraduate students in teacher education is available online at education.uncc.edu/coe/financialaid, as well as in the Office of Teacher Education Advising and Licensure (TEAL) in COED 119.
The William States Lee College of Engineering's vision is that:

The College is the engineering college of first choice for students, faculty, staff, and industry partners, discovering, integrating, applying and disseminating knowledge.

The College provides quality educational experiences and discovers and disseminates knowledge that serves the citizens and industries of the Carolinas, and the national and the international communities.

The Lee College offers baccalaureate degree programs in Engineering, Engineering Technology, and Construction Management. On the graduate level, the College offers programs leading to master’s degrees in Engineering Construction Management, Fire Safety, and Engineering Management; the Ph.D. in Electrical Engineering and in Mechanical Engineering; an interdisciplinary Ph.D. in Infrastructure and Environmental Systems; and, in cooperation with North Carolina State University, a program leading to the Ph.D. degree in Civil Engineering (see the Graduate Catalog).

The College is composed of the Departments of Civil and Environmental Engineering, Electrical and Computer Engineering, Mechanical Engineering and Engineering Science, and Engineering Technology.

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DEGREE PROGRAMS

ENGINEERING PROGRAMS
The baccalaureate programs in engineering offer a professional engineering education that can be used as the foundation for several different career objectives: careers as professional engineers in industry, business, or consulting; graduate study to prepare for careers in research, development, or teaching; and a more general and more liberal engineering education with the objective of keeping a variety of career avenues open. The civil, computer, electrical, and mechanical engineering programs are accredited by the Engineering Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012; telephone: (410) 347-7700.

Whatever the career objective of the student, a sound engineering educational program ensures their graduates have: (a) an ability to apply knowledge of math, science and engineering; (b) an ability to design and conduct experiments/analyze and interpret data; (c) an ability to design a system, component, or process; (d) an ability to function on multi-disciplinary teams; (e) an ability to identify, formulate, and solve engineering problems; (f) an understanding of professional and ethical responsibility; (g) an ability to communicate effectively; (h) an ability to evaluate the impact of technology in a global / economic / environmental / societal context; (i) an appreciation for lifelong learning; (j) knowledge of contemporary issues; and
(k) an ability to use the techniques, skills, and modern tools for engineering practice. The course of study will involve the humanities, social sciences, physical sciences, mathematics, and engineering sciences and design. The student expecting to accept employment in industry may emphasize the engineering design and engineering science aspects of his or her program, while the student preparing for graduate study might emphasize the mathematics and science aspects. Some engineering graduates ultimately take on executive and management responsibilities in industries and firms that are based upon engineering products and engineering services. Such students may choose to construct an elective option in their program, including economics and business-related courses that strengthen their communication skills and other non-technical skills.

Engineering students are strongly encouraged to pursue the requirements for registration as a Professional Engineer (PE). The first step in the registration process is the successful completion of the Fundamentals of Engineering (FE) Exam. Students are encouraged to take this exam during their senior year. Additional requirements for professional licensure subsequent to graduation include the accumulation of at least four years of progressive engineering experience and successful completion of the Professional Engineer Examination (PE Exam). Students who complete the Cooperative Education Program or who complete their master’s degree only need three years of progressive engineering experience to be eligible to take the PE Exam in North Carolina.

ENGINEERING TECHNOLOGY PROGRAMS

Engineering technology is the profession in which knowledge of mathematics and natural sciences gained by higher education, experience, and practice is devoted primarily to the implementation and extension of existing technology for the benefit of humanity. Engineering technology education focuses primarily on the applied aspects of science and engineering aimed at preparing graduates for practice in that portion of the technological spectrum closest to the product improvement, manufacturing, construction, and engineering operational functions.

Engineering technology programs are characterized by their focus on application and practice and by their approximately equal mix of theory, practice and laboratory experience. The civil, electrical, and mechanical engineering technology programs are accredited by the Technology Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012; telephone: (410) 347-7700.

Graduates of the engineering technology programs are recruited by most major technological companies in the U.S. They are employed across the technological spectrum but are best suited to areas that deal with application, implementation, production, and construction. Technical sales and customer services fields also account for many placements.

Engineering technology students are encouraged to pursue the requirements for registration as a Professional Engineer. The first step in the registration process is the successful completion of the Fundamentals of Engineering (FE) Exam. Graduates are encouraged to take this exam after completing four years of work experience under a Professional Engineer (PE). Additional requirements for professional licensure following graduation include the accumulation of at least eight years of progressive experience and successful completion of the Professional Engineer Exam (PE Exam). Students who complete the Cooperative Education Program or who complete their Master’s degree only need seven years of progressive engineering experience to be eligible to take the PE Exam in North Carolina.

CONSTRUCTION MANAGEMENT PROGRAM

Construction management provides the education necessary for entry into the construction industry in a variety of careers in the residential, commercial, and industrial sectors, as well as infrastructure, and heavy horizontal construction. Related careers in real estate and land development, infrastructure development, code enforcement, and insurance are also career options.

The program is enhanced by a business/management core that includes courses in statistics, computer applications, economics, accounting, engineering economics, business management, business law, finance, and construction law. The Construction Management program shares a common lower division (freshman and sophomore year) curriculum with the Civil Engineering Technology Program. This provides a two-year opportunity to determine which program best fits the desired academic objective.

ACADEMIC PROGRESSION REQUIREMENTS AND DISCONTINUANCE CONDITIONS FOR:

I. BACHELOR’S DEGREE PROGRAMS AND ADVISING IN THE COLLEGE OF ENGINEERING

Students may be admitted to one of the four College of Engineering departments: Civil and Environmental Engineering (CEGR), Electrical and Computer Engineering (EEGR and CPGR), Mechanical Engineering and Engineering Science (MEGR), and Engineering Technology: Civil Engineering Technology (CIET), Construction Management (CMET), Electrical Engineering Technology (ELET), Fire Safety Engineering Technology (FSET), or Mechanical Engineering Technology (MEET). Students may also
be admitted as Systems Engineering (SEGR), engineering undecided (ENGR), or engineering technology undecided (ETGR) majors.

Engineering Undecided (ENGR) and Engineering Technology Undecided (ETGR) are designations for students who qualify for admission to an engineering or engineering technology major but who have not decided which program they desire. Both ENGR and ETGR students must work with their academic advisor to choose and declare a program of study by the completion of their freshman year.

Students are expected to follow the advice and recommendations of their faculty advisors and are expected to know and follow all prerequisite, corequisite, and progression requirements of their program. Persistent attempts to circumvent that advice and guidance shall be grounds for discontinuance.

Students must demonstrate that they are making satisfactory progress toward completion of their major degree. They are in violation of this requirement and subject to discontinuance if they have two consecutive semesters of unsatisfactory progress.

Students in the engineering programs may take a course in their curriculum a maximum of three times, including withdrawing from the course with a grade of W. Failure to achieve a satisfactory grade in a course to progress in the program within the three allowed attempts will result in suspension from the engineering program.

II. FRESHMAN YEAR REQUIREMENTS

All new freshman students are initially advised by a central office within the College of Engineering. Students are eligible for transfer to their major department for further advising once they have achieved the following:

1) completion of all non-elective courses in their freshman year curriculum with grades of C or above
2) a minimum cumulative grade point average (GPA) of 2.0 for all courses taken

III. SOPHOMORE THROUGH SENIOR YEAR REQUIREMENTS

In addition to the University requirements for continued enrollment, students must maintain a major cumulative GPA of 2.0 for all courses in the departmental curriculum taught by the College. Failure to meet this requirement for two consecutive semesters will result in suspension from the College of Engineering.

IV. REQUIREMENTS FOR READMISSION TO THE COLLEGE AFTER DISCONTINUATION

An undergraduate student who has been discontinued for failure to satisfy the College requirement for continuation stated above, but who nonetheless meets the conditions for continued enrollment in the University, will be ineligible for readmission to the College until one of the following occurs:

1) An appeal is accepted through the College of Engineering
2) The student completes an Associate of Science (AS) degree for engineering or an Associate of Applied Science (AAS) degree for engineering technology
3) The student elects to use the Two-Year-Rule

A student who has been suspended by the University must follow University guidelines for appeal. Readmission to the College after discontinuation or suspension is not automatic. An application for readmission must be made by the student and approved by the College/department. Students who are readmitted after discontinuation by the College, suspension by the University, or under the Two-Year Rule must meet requirements for continued enrollment appropriate to their individual situation. These requirements are specified in a “Continuation Agreement” that is mutually agreed upon and signed by the student and his/her appropriate advisor. The consequences of failure to meet the requirements of the agreement may be articulated in the agreement itself. However, if these consequences are not included in the agreement, failure to meet the requirements will automatically result in the student’s discontinuation from the College.

SPECIAL COLLEGE PROGRAMS

MAXIMIZING ACADEMIC AND PROFESSIONAL SUCCESS PROGRAM (MAPS)
The College’s nationally recognized MAPS program assists students in developing the personal, academic, and professional skills needed for success. The program includes peer-led collegiate coaching and career coaching conducted in small group sessions, Suplemental Instruction (SI), tutoring, workshops, and study groups. SI and/or tutoring is available for courses such as calculus, chemistry, and physics, and for sophomore and junior engineering and engineering technology courses. Assessment results indicate that students who regularly participate in MAPS perform well academically and are much more likely to graduate from the College. In addition, the MAPS Program supports the College’s student organizations.

FRESHMAN LEARNING COMMUNITY (FLC)
The FLC is home to more than 200 College of Engineering freshmen who live, study, and interact in a single residence hall. Students benefit from having similar interests and course schedules. In addition,
collegiate coaching and tutoring for a variety of freshman courses are offered on-site. Other events such as engineering site visits, special study nights, and social activities are also available to participants.

STUDENT LEADERSHIP ACADEMY
The Leadership Academy is an optional extracurricular program designed to develop the leadership potential of College of Engineering students through a series of weekend retreats with other students, faculty and industry partners. Top industry executives help facilitate specific activities providing some real-world perspective on being a successful leader in business and in the community.

EXPERIENTIAL LEARNING AND SERVICE LEARNING OPPORTUNITIES
Students are encouraged to participate in professional work experiences in support of their academic and career development through the cooperative education, 49ership, service, and internship programs offered to students in the College. The College works with the University Career Center to expand experiential learning offerings to enable more students to graduate with career related experience. For more information about experiential learning opportunities, please see the University Career Center section of this Catalog.

COOPERATIVE EDUCATION PROGRAM
Students may obtain practical work experience while pursuing their degree by participating in cooperative education whereby a student alternates semesters of full-time academic study with semesters of full-time work experience in industry. Students may also do back-to-back Co-op experiences if their fall or spring Co-op session is combined with a summer session. The work experience is under the direction of the student’s major department and is closely related to his or her field of study.

Students who fulfill all requirements of the Co-op program receive transcript notation, can earn up to three credit hours for a technical elective, and will receive partial credit toward the professional practice requirement for registration as a Professional Engineer in North Carolina.

To be eligible for the Co-op program, a student must have completed at least 30 credit hours at UNC Charlotte including a number of specified courses with a minimum GPA of 2.5. A transfer student is expected to have completed at least 12 hours at UNC Charlotte.

For an undergraduate to be officially designated as a Co-op student, he or she must participate in at least three full-time semesters of work experience (three work sessions and three seminar courses). Consequently, participation in Co-op Education usually means that graduation can be delayed up to one year. However, students who participate in Co-op traditionally are more highly recruited at higher starting salaries than other students.

Students interested in learning more about the advantages and opportunities of participating in this program should contact the College’s Faculty Associate for Student Professional Development or the University Career Center.

DOMESTIC INTERNSHIPS
A number of opportunities for non-credit internships, called 49erships and Service 49erships, exist for students at local and regional employers. Internships for College of Engineering students are almost always paid positions. A minimum of 80 work hours need to be completed in no less than five weeks for one semester to successfully complete the program. Fall and Spring 49erships are part-time. Summer 49erships may be full- or part-time. Full-time students who are in good University standing, have completed 30 credit hours, and have a 2.0 minimum cumulative GPA are eligible.

Internships do not offer academic credit, but students do receive transcript notation. Approval for enrollment must be arranged before the student begins the work experience, and students pay a course registration fee. Students may begin this program during their sophomore year. Transfer students must complete 12 credit hours at UNC Charlotte before making application for the program.

Students interested in learning more about the advantages and opportunities of participating in this program should contact the College’s Faculty Associate for Student Professional Development or the University Career Center.

INTERNATIONAL EXPERIENCES
The College provides opportunities for overseas study, research, and/or an industrial experience. In many cases, students who meet eligibility requirements receive special scholarships and/or grants to help defray the cost of these programs.

FUNDAMENTALS OF ENGINEERING (FE) EXAM REVIEW
The first step in professional licensure is the FE exam, which engineering students take their senior year. To encourage and prepare students to take and successfully pass this national exam, the College offers review opportunities each fall and spring semester. The materials focus on technical subjects and test-taking strategies.

CONTINUING ENGINEERING STUDIES
The College of Engineering sponsors various special educational programs for practicing engineers, technologists, technicians, and others, in addition to
its regular academic degree programs and courses. These include conferences, short courses, seminars, and other continuing education programs designed to aid those practicing in the technical professions and occupations to keep abreast of the latest developments in the rapidly expanding technology. For more information, contact the Office of Continuing Education, Extension, and Summer Programs.

Department of Civil and Environmental Engineering

ce.uncc.edu

Chair: D. Young
Professors Emeritus: D. Bayer, J. Evett, L. E. King
Duke Energy Distinguished Professor: H. Inyang
Professors: J. Graham, R. Janardhanam, J. Wu, D. Young
Associate Professors: J. Bowen, S. Chen, J. Daniels, J. Gergely, H. Hilger, M. Kane, V. Ogunro, M. Pando, S. Pulugurtha, D. Weggel
Assistant Professors: J. Amburgey, B. Tempest, K. Warren, M. Whelan
Lecturers: D. Naylor, W. Saunders

A major role of civil engineers is to focus scientific and technological skills on the creation of physical facilities, the engineering and construction of which advance society toward such basic goals as economic development, environmental protection, and social well-being. Civil engineers may be involved in analysis, design, construction, and monitoring of: buildings, bridges, dams, and other structures; water resources for urban use, industry and land reclamation; systems for water transmission and river control; water quality control systems for purification and waste treatment; transportation systems including highways, mass transit, airports, railroads, pipelines, canals, and harbor facilities; solutions for environmental problems including air pollution, ground pollution, water pollution, noise pollution, ecological effects, land development, and urban and regional planning; and in subsurface foundation systems. Civil engineers must bring about a satisfactory blending of constructed facilities with the natural and social environments, creating an optimum relationship between humans and the environment while helping safeguard the health, safety, and welfare of the public.

DEGREE PROGRAMS
The Department of Civil and Environmental Engineering offers a Bachelor of Science in Civil Engineering (B.S.C.E.) degree, a Master of Science in Civil Engineering (M.S.C.E.) degree, a Master of Science in Engineering (M.S.E.) degree, and a Doctor of Philosophy (Ph.D.) degree in Infrastructure and Environmental Systems. Additionally, doctoral studies leading to the Doctor of Philosophy (Ph.D.) degree are available through a cooperative arrangement with North Carolina State University.
For information about the graduate programs, see the *UNC Charlotte Graduate Catalog*.

**OBJECTIVES**
The civil engineering program educational objectives describe achievements to be attained by graduates during the first few years after graduation:

- pursue careers in the Civil and Environmental Engineering profession or another profession or emerging area;
- apply mathematics and physical and social sciences, use engineering tools and accepted methods of practice, and employ effective communication and teamwork to analyze engineering problems, to formulate and interpret alternatives, and to design and produce effective solutions;
- demonstrate ethical behavior and professionalism by obtaining professional licensure as appropriate for their chosen career and by participating in professional societies;
- assume increasing responsibilities, including managing their engineering solutions from conception through implementation and advancing toward leadership roles in both their career and their profession;
- maintain and expand professional competencies and master emerging technologies by engaging in lifelong learning that includes graduate studies and professional education; and
- incorporate global, societal, economic, and environmental impacts in their work consistent with the principles of sustainable development.

**ACCREDITATION**
The program in Civil Engineering in the Department of Civil and Environmental Engineering is accredited by: Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology, 111 Market Place, Suite 1050, Baltimore, MD 21202, Telephone: (410) 347-7700.

**CONTINUED STUDIES**
Students may plan early in their undergraduate careers for continuation of their engineering studies beyond the first degree. The large number of fields of graduate study that follow the curriculum offered by the Department of Civil and Environmental Engineering influence how each student plans his/her undergraduate program of study. Twenty-one hours of technical electives allow flexibility for study in specific areas. Each student may design a technical elective program with his or her advisor to achieve individual goals and follow a desired track. Specified tracks include Construction Engineering, Sustainable Design, Land Development Engineering, Energy Infrastructure, Forensic Engineering, and the traditional trades in Environmental, Geotechnical, Structures, and Transportation.

Additionally, students may take nine hours (three “Optional Courses”) beyond the BSCE requirements from prescribed menus in each of the areas of Environmental, Geotechnical, Structural, and Transportation Engineering to earn a department-issued “Area of Concentration.”

**EARLY-ENTRY TO MASTER’S PROGRAM**
Qualified students may apply for early-entry into the graduate program in Civil and Environmental Engineering during their Junior or Senior year. If accepted, students may take these optional courses for graduate credit and to begin work on their master’s degree while completing their undergraduate degree. Additionally, early-entry students may apply up to 6 credits of approved graduate coursework as electives toward their undergraduate degree (double count).

1.) A student may be accepted into the early-entry program at any time after completion of at least 75 semester hours of undergraduate work applicable to an appropriate degree. Admission must be approved by the Department of Civil and Environmental Engineering. Full admission to the graduate program is conditional pending the awarding of the undergraduate degree.

2.) In order to be accepted into the program a student must have at least a 3.2 overall grade point average and a 3.2 grade point average in the student’s major. The successful applicant must have taken the appropriate standardized test and earned acceptable scores.

3.) While in the early-entry program, a student must maintain a 3.0 overall grade point average through completion of the baccalaureate degree in order to remain in the graduate program.

4.) Students accepted into the early-entry program will be subject to the same policies that pertain to other matriculated graduate students. Early-entry students must finish their undergraduate degree before they complete 15 hours of graduate work.

**BACHELOR OF SCIENCE IN CIVIL ENGINEERING (B.S.C.E.)**

*Note: This curriculum became effective Fall 2004. Students who entered the program prior to Fall 2004 should refer to a previous Catalog or contact the Department office for their program of study. Since the curriculum changes periodically, students should contact the Department office for the latest information concerning this curriculum.*

A major in Civil Engineering leading to the B.S.C.E. degree consists of 128 credit hours. Specific requirements are:

- English ......................................................... 6
- Technical Communications .......................... 3
- Humanities and Social Science Electives ........ 15
- Mathematics ............................................. 15
- Physics ..................................................... 8
- Chemistry .................................................. 4
- Science Elective ......................................... 3
Suggested Curriculum: B.S.C.E. DEGREE (effective Fall 2004)

First Year
Fall Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 1241 Calculus I</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 1251 Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 1251L Chemistry Lab</td>
<td>1</td>
</tr>
<tr>
<td>ENGR 1101 English I</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 1201 Intro to Engineering I</td>
<td>2</td>
</tr>
<tr>
<td>LBST 1101, 1102, 1103, 1104, or 1105 General Ed</td>
<td>3</td>
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</tbody>
</table>

Spring Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MATH 1242 Calculus II</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 2101 Dynamics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 2101L Physics Lab</td>
<td>1</td>
</tr>
<tr>
<td>ENGL 1102 English II</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 1202 Intro to Engineering II</td>
<td>2</td>
</tr>
<tr>
<td>Social Science – General Ed</td>
<td>3</td>
</tr>
</tbody>
</table>

Second Year

Fall Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 2241 Calculus III</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 2102 Electricity</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 2102L Physics Lab</td>
<td>1</td>
</tr>
<tr>
<td>CEGR 2101 Drawing</td>
<td>2</td>
</tr>
<tr>
<td>CEGR 2102 Engineering Economics</td>
<td>3</td>
</tr>
<tr>
<td>MEGR 2141 Statics (Engr. Mech. I)</td>
<td>3</td>
</tr>
<tr>
<td>LBST 2101 General Ed</td>
<td>3</td>
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</tbody>
</table>

Spring Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 2171 Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>CEGR 2104 Surveying &amp; Site Design</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 2116 Technical Writing (W)**</td>
<td>3</td>
</tr>
<tr>
<td>MEGR 2144 Solid Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>CEGR 2154 Design Project Lab (O)**</td>
<td>2</td>
</tr>
<tr>
<td>Science Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

Social science and humanities electives must be chosen both to satisfy University General Education requirements and to meet the objectives of a broad education consistent with the educational goals of the profession. To avoid taking “extra” humanities/social science electives, students must select their electives carefully after consulting with their faculty advisor.

The science electives must be chosen from an approved list of physical, life, or earth sciences and must complement the student’s overall educational plan.

Technical electives allow flexibility for study in specific areas, and each student may design a technical elective program with the advisor’s approval in order to achieve an individual goal and follow a desired track. Three “open” technical (TECH) electives may be selected from the areas of engineering, mathematics, science, business and communications; however, one of the three must be selected from the areas of basic math and science. Four Civil Engineering technical electives (CEGR Elective) must be selected from upper-division Civil Engineering courses. A list of all courses accepted as technical electives is available on the department’s website.
<table>
<thead>
<tr>
<th>Third Year</th>
<th>Fall Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Course</strong></td>
<td><strong>CEGR 3143 Hydraulics &amp; Hydrology</strong>&lt;br&gt;<strong>CEGR 3141 Environmental I</strong>&lt;br&gt;<strong>CEGR 3278 Geotechnical I</strong>&lt;br&gt;<strong>CEGR 3122 Structures I</strong>&lt;br&gt;<strong>CEGR 3155 Environmental Lab (W)</strong>&lt;br&gt;<strong>CEGR 3258 Geotechnical Lab (W)</strong>&lt;br&gt;<strong>LBST 2102 Gen Ed</strong></td>
<td><strong>3</strong>&lt;br&gt;<strong>3</strong>&lt;br&gt;<strong>3</strong>&lt;br&gt;<strong>3</strong>&lt;br&gt;<strong>1</strong>&lt;br&gt;<strong>1</strong>&lt;br&gt;<strong>3</strong></td>
</tr>
<tr>
<td><strong>Spring Semester</strong></td>
<td><strong>Course</strong></td>
<td><strong>Credits</strong></td>
</tr>
<tr>
<td><strong>CEGR 3161 Transportation I</strong>&lt;br&gt;<strong>CEGR 3153 Transportation Lab (W)</strong>&lt;br&gt;<strong>CEGR 3255 Structures &amp; Materials Lab (W)</strong>&lt;br&gt;<strong>CEGR Electives (2)</strong>&lt;br&gt;<strong>STAT 3128 Probability &amp; Statistics for Engineers</strong>&lt;br&gt;<strong>Engineering Elective (ECGR 2161 Circuits, MEGR 3121 Dynamics, or MEGR 3111 Thermodynamics)</strong></td>
<td><strong>3</strong>&lt;br&gt;<strong>1</strong>&lt;br&gt;<strong>1</strong>&lt;br&gt;<strong>6</strong>&lt;br&gt;<strong>3</strong>&lt;br&gt;<strong>3</strong></td>
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<tr>
<th>Fourth Year</th>
<th>Fall Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Course</strong></td>
<td><strong>CEGR 3201 Systems &amp; Design I</strong>&lt;br&gt;<strong>CEGR 3221 Structural Steel Design I OR CEGR 3225 Reinforced Concrete Design I</strong>&lt;br&gt;<strong>ENGR 3295 Professional Development</strong>&lt;br&gt;<strong>CEGR Elective</strong>&lt;br&gt;<strong>TECH Elective</strong>&lt;br&gt;<strong>LBST 2211, 2212, 2213, 2214, 2215 General Ed</strong></td>
<td><strong>3</strong>&lt;br&gt;<strong>3</strong>&lt;br&gt;<strong>1</strong>&lt;br&gt;<strong>3</strong>&lt;br&gt;<strong>3</strong>&lt;br&gt;<strong>3</strong>&lt;br&gt;<strong>3</strong></td>
</tr>
<tr>
<td><strong>Spring Semester</strong></td>
<td><strong>Course</strong></td>
<td><strong>Credits</strong></td>
</tr>
<tr>
<td><strong>CEGR 3202 Systems &amp; Design II</strong>&lt;br&gt;<strong>CEGR Elective</strong>&lt;br&gt;<strong>TECH Elective</strong></td>
<td><strong>4</strong>&lt;br&gt;<strong>3</strong>&lt;br&gt;<strong>3</strong>&lt;br&gt;<strong>3</strong></td>
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</tbody>
</table>

*Contact the department office for more information about the optional courses and their use for an undergraduate concentration or for the early-entry Master’s program.

**(W) indicates a writing intensive course; (O) indicates an oral communication course.

Total Required Hours = 128

Department of Electrical and Computer Engineering

ece.uncc.edu

**Chair:** I. Ferguson  
**Bissell Distinguished Professor:** Y. Zhang  
**Professors Emeritus:** L. Casperson, R. Coleman, R. Greene, D.H. Phillips  
**Professors:** D. Binkley, S. Bobbio, K. Daneshvar, I. Ferguson, M. Fiddy, Y. Kakad, V. Lukic, E. Johnson, E. Stokes, F. Tranjan, R. Tsu  
**Associate Professors:** J. Conrad, M. Hasan, I. Howitt, B. Joshi, S. Kamalasadan, S. M. Miri, A. Mukherjee, A. Nasipuri, A. Ravindran, R. Sass, T. Weldon, A. Willis, J. Xie  
**Associate Professor Emeritus:** W. Smith  
**Assistant Professors:** R. Adams, J. Bird, V. Cecchi, R. Cox  
**Faculty Associates:** N. BouSaba, F. Esenwein, C. Hargrove, A. Hege, J. Hudak, B. Martin  
**Laboratory Support:** E. Hill

The Department of Electrical and Computer Engineering provides instruction and research in areas of electrical and computer engineering such as power systems, optoelectronics, digital systems, VLSI design, data communications and networking, automatic control systems, electronics, embedded systems, microelectronics, power electronics, robotics, nanotechnology, and biomedical engineering.

The mission of the Department of Electrical and Computer Engineering is to provide exceptional educational opportunities in a research intensive environment that serves its students, citizens and industry of the Charlotte region, the state of North Carolina, the nation, and beyond. By fulfilling this mission, we provide accessible, high-quality education that equips students with intellectual and professional skills, ethical principles, and a global perspective.

**DEGREE PROGRAMS**

The Department offers a Bachelor of Science in Electrical Engineering (B.S.E.E.) degree and a Bachelor of Science in Computer Engineering (B.S.Cp.E.) degree. An eight-semester sequence of courses that is designed to develop the concepts and design and analysis techniques fundamental to the various areas of specializations forms the core of the curricula. Emphasis is placed on the utilization of computers throughout the curricula. Our graduates
have a wide range of job opportunities as power engineers, communication engineers, digital design engineers, test engineers, embedded system developers, network engineers, control engineers, project engineers, robotic system engineers, optoelectronic engineers, application engineers, analog engineers, medical product engineers, and process engineers.

Graduate studies in electronics, embedded systems, microelectronics, optoelectronics, computer engineering, VLSI design and testing, signal processing, data communications and networking, power electronics, power systems, and control systems are offered by the Department at the Master’s and Ph.D. levels.

ACCREDITATION
Both the program in Electrical Engineering and the program in Computer Engineering are accredited by: Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology, 111 Market Place, Suite 1050, Baltimore, MD 21202, Telephone: (410) 347-7700.

B.S.Cp.E./B.S.E.E. PROGRAM EDUCATIONAL OBJECTIVES
Our undergraduate programs prepare our graduates to:

1) Achieve successful careers in industry and/or success in post-baccalaureate studies as evidenced by:
   - Being valuable contributors to their employers
   - Career satisfaction
   - Professional visibility through publications, presentations, recognitions, and awards
   - Promotions in their chosen professions
   - Advanced degrees earned

2) Contribute to the betterment of society and the world as evidenced by:
   - Good citizenship by engaging in engineering practice that values integrity and ethical conduct as paramount
   - Useful inventions
   - Entrepreneurial activities
   - Active involvement in the education of others, locally or globally

B.S.Cp.E./B.S.E.E. PROGRAM LEARNING OUTCOMES
Our undergraduate programs require students to learn these knowledge and skills by the time of graduation:

- An ability to apply knowledge of mathematics, science, and engineering
- An ability to design and conduct experiments, as well as to analyze and interpret data
- An ability to design a system, component, or process to meet desired needs
- An ability to function on multi-disciplinary teams
- An ability to identify, formulate, and solve engineering problems
- An understanding of professional and ethical responsibility
- An ability to communicate effectively
- An ability to understand the impact of engineering solutions in a global and societal context
- A recognition of the need for, and an ability to engage in life-long learning
- A knowledge of contemporary issues
- An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice
- The ability to articulate and address issues related to entrepreneurship

MINORS
The Department of Electrical and Computer Engineering offers a minor in Electrical Engineering and a minor in Computer Engineering for non-majors. For details, visit the ECE Department’s website at www.ece.uncc.edu.

EARLY-ENTRY TO MASTER OF SCIENCE PROGRAM IN ELECTRICAL ENGINEERING
1) A student may be accepted into the early-entry program at any time after completion of 75 semester hours of undergraduate work applicable to an appropriate degree. Admission must be approved by the Department of Electrical and Computer Engineering. The admission is conditional pending the awarding of the undergraduate degree.

2) In order to be accepted into the Electrical Engineering early-entry program, an undergraduate student must have at least a 3.2 overall grade point average and a 3.2 grade point average in the major. The successful applicant must have taken the appropriate graduate standardized test and achieved acceptable scores.

3) If an early-entry student is unable to maintain a 3.0 overall grade point average at the end of his/her baccalaureate degree, he/she will be dismissed from the graduate program.

4) Up to six hours earned at the graduate level may be substituted for required undergraduate hours. (Up to six hours of graduate work may be “double counted” toward both baccalaureate and graduate degrees.)

5) Students accepted into the early-entry program will be subject to the same policies that pertain to other matriculated graduate students. Early-entry students must finish their undergraduate
degree before they complete 15 hours of graduate work.

**BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING (B.S.E.E.)**

The curricula described are subject to change. Please consult with the Department Chair or Associate Chair for the latest versions.

A major in Electrical Engineering leading to the B.S.E.E. degree consists of a total of 127 semester credit hours.

**DEGREE REQUIREMENTS**

- English ......................................................... 6
- Liberal Studies ............................................ 12
- Mathematics ................................................ 15
- Physics ....................................................... 10
- Chemistry ...................................................... 4
- Science or Math Elective .............................. 3
- Engineering ................................................... 5
- Mechanical Engineering ............................... 3
- Departmental Requirements .......................... 54
- Technical Electives ................................. 12
- Economics .................................................. 3

Total Hours ................................................ 127

The laboratory courses are designed to: (1) teach the basic techniques of instrumentation; (2) develop skills in communications; and (3) relate the analytical methods developed in the classroom to the performance of real physical systems.

Note: All Non-elective freshmen year courses must be completed with C or above prior to enrolling in any junior level courses.

**ELECTIVES**

The liberal studies electives must be chosen to satisfy the University General Education Requirements and to meet the objectives of a broad education consistent with the educational goals of the profession.

The science elective must be chosen from college-level chemistry, physical, or biological science courses.

The math elective must be chosen from college-level, non-remedial mathematics or statistics courses. This elective course should complement the student’s overall educational plan, and its content should be at a level above what is required by the student’s curriculum.

The technical electives are chosen by students in consultation with their academic advisor. Students can use these electives to obtain significant depth within a particular concentration area of electrical or computer engineering in order to prepare for the careers of their interests, or for graduate work in electrical or computer engineering. The technical electives must contain at least twelve hours of coursework dealing with engineering science, analysis, synthesis, or design. The contents of the technical electives should be at levels higher than those required by the student’s curriculum.

**Suggested Curriculum: B.S.E.E. Degree**

<table>
<thead>
<tr>
<th>First Year</th>
<th>Fall Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course</td>
<td>ENGR 1201 Intro To Engineering Practices &amp; Principles I</td>
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<tr>
<td></td>
<td>CHEM 1251 Principles of Chemistry</td>
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<td>CHEM 1251L Principles of Chemistry Lab</td>
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<tr>
<td></td>
<td>MATH 1241 Calculus I</td>
<td>3</td>
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<tr>
<td></td>
<td>ENGL 1101 English Composition</td>
<td>3</td>
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<td></td>
<td>LBST 1101, 1102, 1103, 1104 or 1105 The Arts &amp; Society</td>
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<tr>
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<tr>
<td>ENGR 1202 Intro To Engineering Practices &amp; Principles II</td>
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<td>MATH 1242 Calculus II</td>
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<tr>
<td>PHYS 2101 Physics for Science &amp; Engineering I</td>
<td>3</td>
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<tr>
<td>PHYS 2101L Physics Lab I</td>
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<tr>
<td>ENGL 1102 Writing in Academic Community</td>
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<tr>
<td>LBST 2101 Western Cultural &amp; Historical Awareness</td>
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### Second Year

#### Fall Semester

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>ECGR 2103 Computer Utilization in C++</td>
<td>3</td>
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<tr>
<td>ECGR 2111 Network Theory I</td>
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</tr>
<tr>
<td>ECGR 2155 Lab: Instrumentation &amp; Networks</td>
<td>1</td>
</tr>
<tr>
<td>ECGR 2181 Logic System Design I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 2171 Differential Equations</td>
<td>3</td>
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<td>PHYS 2102 Physics for Science &amp; Engineering II</td>
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#### Spring Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ECGR 2112 Network Theory II</td>
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<td>ECGR 2156 Lab: Logic &amp; Networks</td>
<td>1</td>
</tr>
<tr>
<td>ECGR 2252 Electrical Engineering Design I</td>
<td>2</td>
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<tr>
<td>MATH 2241 Calculus III</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 3141 Introduction to Modern Physics</td>
<td>3</td>
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<td>LBST 2102 Global &amp; Intercultural Connections</td>
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### Third Year

#### Fall Semester

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>ECGR 3111 Signals and Systems</td>
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<tr>
<td>ECGR 3121 Introduction to Electromagnetic Fields</td>
<td>3</td>
</tr>
<tr>
<td>ECGR 3131 Fund of Electronics &amp; Semiconductors</td>
<td>3</td>
</tr>
<tr>
<td>ECGR 3155 Lab: Systems and Electronics</td>
<td>1</td>
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<tr>
<td>ECGR 3157 Electrical Engineering Design II</td>
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<tr>
<td>ENGR 3295 Professional Development</td>
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<tr>
<td>LBST 2211, 2212, 2213, 2214, or 2215 Ethical Issues &amp; Cultural Critiques</td>
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#### Spring Semester

<table>
<thead>
<tr>
<th>Course</th>
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<tr>
<td>ECGR 3122 Electromagnetic Waves</td>
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<tr>
<td>ECGR 3132 Electronics</td>
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</tr>
<tr>
<td>ECGR 3133 Solid State Microelectronics I –OR– ECGR 3142 Electromagnetic Devices</td>
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<td>ECGR 3156 Lab: Electromagnetic &amp; Electronic Devices</td>
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<tr>
<td>STAT 3128 Probability and Statistics for Engineers</td>
<td>3</td>
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<tr>
<td>ECGR 3112 System Analysis II – OR– ECGR 3181 Logic System Design II</td>
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### Fourth Year

#### Fall Semester

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>ECGR 3253 Senior Design I</td>
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<tr>
<td>ECGR 4123 Analog &amp; Digital Communication –OR– ECGR 4124 Digital Signal Processing</td>
<td>3</td>
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<tr>
<td>ECGR 4XXX Senior Elective</td>
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<tr>
<td>Technical Elective</td>
<td>3</td>
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<tr>
<td>Technical Elective</td>
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<tr>
<td>Science or Math Elective</td>
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#### Spring Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ECGR 3159 Elec. Engineering Professional Practice</td>
<td>2</td>
</tr>
<tr>
<td>ECGR 3254 Senior Design II</td>
<td>3</td>
</tr>
<tr>
<td>MEGR 3111 Thermodynamics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 2101 Principles Economics Macro</td>
<td>3</td>
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<tr>
<td>Technical Elective</td>
<td>3</td>
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<tr>
<td>Technical Elective</td>
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</tbody>
</table>

**Total Credit Hours = 127**

### BACHELOR OF SCIENCE IN COMPUTER ENGINEERING (B.S.Cp.E.)

The curriculum in Computer Engineering leading to the B.S.Cp.E. degree consists of 125 semester credit hours.

#### DEGREE REQUIREMENTS

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>English</td>
<td>6</td>
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<tr>
<td>Liberal Studies</td>
<td>12</td>
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<tr>
<td>Mathematics</td>
<td>15</td>
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<tr>
<td>Physics</td>
<td>8</td>
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<tr>
<td>Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>Science or Math Restrictive Elective</td>
<td>3</td>
</tr>
<tr>
<td>Advanced Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>Engineering</td>
<td>3</td>
</tr>
<tr>
<td>Writing Intensive (W) Requirement</td>
<td>3</td>
</tr>
<tr>
<td>Restricted Elective</td>
<td>3</td>
</tr>
<tr>
<td>Economics</td>
<td>3</td>
</tr>
<tr>
<td>Computer Engineering Requirements</td>
<td>54</td>
</tr>
<tr>
<td>Depth Elective Requirements*</td>
<td>6</td>
</tr>
</tbody>
</table>

Total Hours.................................................. 125

### ELECTIVES

The **liberal studies electives** must be chosen to satisfy the University General Education Requirements and to meet the objectives of a broad education consistent with the educational goals of the profession.

The **science restricted elective** must be chosen from college-level chemistry, physical or biological science courses.

The **math restricted elective** must be chosen from
college-level, non-remedial mathematics or statistics courses. This elective course should complement the student’s overall educational plan, and its content should be at a level above what is required by the student’s curriculum.

The advanced problem solving course must be chosen from: MATH 2164, 2241, 3116, 3166; OPRS 3111, 3113; or PHYS 3141. This elective course should complement the student’s overall educational plan.

The restricted elective must be chosen from: engineering, computing and informatics, computer science, math, statistics, physics, chemistry, biology, or software and information systems. This elective course should complement the student’s overall educational plan, and its content should be at a level above what is required by the student’s curriculum.

For the depth elective requirement, choose two courses from one of the following three areas:

1) Communication & Signal Processing

ECGR 3/4090 Special Topics (approved case-by-case)
ECGR 3112 System Analysis II
ECGR 4103 Applied Computer Graphics
ECGR 4123 Analog/Digit Communication
ECGR 4125 Foundation Optical Engineering
ECGR 4139 Digital Communication Systems
ECGR 4187 Data Communications
ECGR 4422 Random Processes

2) Hardware Systems

ECGR 3/4090 Special Topics (approved case-by-case)
ECGR 3133 Solid State Microelec I
ECGR 3182 Digital Electronics
ECGR 4131 Linear Integrated Electronics
ECGR 4132 Analog IC Design
ECGR 4134 Solid State & Semiconduc Micro II
ECGR 4137 Device Electronics for ICs
ECGR 4138 El Thin Film Mtls Dev.
ECGR 4140 Intro VLSI Proc
ECGR 4142 Power System Analysis II
ECGR 4182 Digital Sys Test
ECGR 4188 Adv VLSI Design
ECGR 4433 VLSI Systems Design

3) Computer Architecture, Software, and Systems

ITCS 2214 Data Structure
ITCS 3166 Intro to Computer Networks
ECGR 3/4090 Special Topics (approved case-by-case)
ECGR 4102 Engineering Simulation
ECGR 4103 Applied Computer Graphics
ECGR 4111 Cont. Sys Theo I
ECGR 4112 Cont. Sys Theo II
ECGR 4161 Intro to Robotics
ECGR 4181 Computer Arithmetic

Note: All non-elective freshman year courses must be completed with C or above prior to enrolling in any junior level courses.

The following curriculum became effective for all students entering the program in the Fall 2006 and thereafter. Students who entered the program prior to Fall 2006 should consult earlier versions of the UNC Charlotte Undergraduate Catalog available online or contact the ECE department.

### Suggested Curriculum: B.S.Cp.E. Degree

<table>
<thead>
<tr>
<th>First Year</th>
<th>Fall Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course</td>
<td>Credits</td>
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<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>CHEM 1251 Principles of Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 1251L Principles of Chemistry Lab</td>
<td>1</td>
</tr>
<tr>
<td>ENGL 1101 English Composition</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 1201 Intro to Engineering Practices &amp; Principles I</td>
<td>2</td>
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<tr>
<td>ITCS 1212 Intro to Computer Science</td>
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<tr>
<td>ITCS 1212L Programming Lab I</td>
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<tr>
<td>MATH 1241 Calculus I</td>
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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Course</td>
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<tr>
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</tr>
<tr>
<td>ENGL 1102 Writing in the Academic Community</td>
</tr>
<tr>
<td>ENGR 1202 Intro to Engineering Practices &amp; Principles II</td>
</tr>
<tr>
<td>ITCS 1213 Introduction to Computer Science II</td>
</tr>
<tr>
<td>ITCS 1213L Programming Lab II</td>
</tr>
<tr>
<td>MATH 1242 Calculus II</td>
</tr>
<tr>
<td>PHYS 2101 Physics for Science / Engineering I</td>
</tr>
<tr>
<td>PHYS 2101L Physics Lab I</td>
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## Second Year
### Fall Semester
<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>ECGR 2111 Network Theory I</td>
<td>3</td>
</tr>
<tr>
<td>ECGR 2181 Logic System Design I</td>
<td>3</td>
</tr>
<tr>
<td>ECGR 2155 Lab: Instrumentation &amp; Networks</td>
<td>1</td>
</tr>
<tr>
<td>MATH 2171 Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>LBST 1101, 1102, 1103, 1104 or 1105 The Arts &amp; Society</td>
<td>3</td>
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<tr>
<td>PHYS 2102 Physics for Science / Engineering II</td>
<td>3</td>
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<td>PHYS 2102L Physics Lab I</td>
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### Spring Semester
<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ECGR 2112 Network Theory II</td>
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<tr>
<td>ECGR 2156 Lab: Logic &amp; Networks</td>
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</tr>
<tr>
<td>ECGR 3181 Logic System Design II</td>
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</tr>
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<td>ECON 2101 Principles of Economics Macro</td>
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<tr>
<td>MATH 1165 Intro to Discrete Structures</td>
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<tr>
<td>STAT 2122 Intro to Probability &amp; Statistics</td>
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## Third Year
### Fall Semester
<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ECGR 3111 Signals and Systems</td>
<td>3</td>
</tr>
<tr>
<td>ECGR 3131 Fundamentals of Electronics / Semiconductors</td>
<td>3</td>
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<tr>
<td>ECGR 3155 Systems &amp; Electronics Lab</td>
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<tr>
<td>ENGR 3295 Professional Development</td>
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<tr>
<td>ECGR 3183 Computer Organization &amp; Programming Languages</td>
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<td>LBST 2101 Western Cultural &amp; Historical Awareness</td>
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<td>LBST 221X Ethical Issues &amp; Cultural Critique</td>
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### Spring Semester
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<th>Course</th>
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<tbody>
<tr>
<td>ECGR 2255 Digital Design Lab</td>
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<td>ECGR 3123 Data Communication &amp; Networking</td>
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<tr>
<td>ECGR 3132 Electronics</td>
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<td>LBST 2102 Global &amp; Intercultural Connections</td>
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<td>Advanced Problem Solving Selection</td>
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<td>Science or Math Restrictive Elective</td>
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## Fourth Year
### Fall Semester
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<th>Course</th>
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<tbody>
<tr>
<td>ECGR 3253 Senior Project I</td>
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<tr>
<td>ECGR 4101 Embedded Systems</td>
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<tr>
<td>ECGR 4146 Intro to VHDL</td>
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<tr>
<td>Depth Elective #1</td>
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<tr>
<td>English Technical Writing – OR – any 3-hour 2xxx-level (or above) course with a (W) designation</td>
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### Spring Semester
<table>
<thead>
<tr>
<th>Course</th>
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<tr>
<td>ECGR 3254 Senior Project II</td>
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<td>ECGR 3159 Professional Practice</td>
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<td>ECGR 4124 Digital Signal</td>
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<td>Depth Elective #2</td>
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<tr>
<td>Restrictive Elective</td>
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</tbody>
</table>

**Total Credit Hours = 125**

## Concentrations in Electrical and Computer Engineering
The Department of Electrical and Computer Engineering offers eight (8) concentration tracks in Electrical Engineering and three (3) concentration tracks in Computer Engineering for its B.S.E.E. and B.S.Cp.E majors, respectively. For details, visit the ECE Department’s website at [www.ece.uncc.edu](http://www.ece.uncc.edu).
Department of Engineering Technology

et.uncc.edu

Chair: A. Brizendine
Professors Emeritus: A. Barry, C. Liu, C. Mobley
Professors: A. Brizendine, N. Byars, B. Sherlock, S. Wang
Faculty Associates/Lecturers: T. Cavalline, D. Hoch, T. Jarrell, P. Kabenga, A. Kitts, R. Swan

Engineering and technical education have undergone considerable change in the last 40 years. The complexities of space exploration, nuclear power, communications systems, environmental control, information processing, transportation systems, fire protection, construction management, and manufacturing have demanded a great increase in the involvement of professional engineers in theoretical and analytical work. This has resulted in a much greater emphasis upon research and development, science, and mathematics in professional engineering curricula. At the same time, after the more complex devices and systems have been engineered, their design, development, and operation require the sophisticated knowledge and skills of what might be called the “applied engineering sciences.” Programs dedicated to filling this need exist all over the United States. The aim and content of these programs are distinctly different from professional engineering curricula.

To provide the appropriate distinction from both theoretical-professional engineers and from engineering technicians who are graduated from two-year community and technical colleges, the designation “engineering technologist” is employed to describe the graduates of four-year applied engineering or “engineering technology” curricula. The department is committed to producing competent graduates that satisfy the needs of employers in North Carolina and throughout the United States.

DEGREE PROGRAMS

The department offers curricula leading to the Bachelor of Science in Construction Management (BSCM) and the Bachelor of Science in Engineering Technology (BSET) degrees. In addition to the BSCM, four disciplines of study are available in Engineering Technology: Civil Engineering Technology, Electrical Engineering Technology, Fire Safety Engineering Technology, and Mechanical Engineering Technology.

Students may enroll in our programs in several ways: 1) as freshmen; 2) as transfers without an approved Associate of Applied Science (AAS) degree in engineering technology, construction management, or fire protection; or 3) as upper division 2+2 transfers after completing a two-year AAS degree in a relevant engineering technology, construction management, or fire protection curriculum at a community or technical college. Incoming students with an AAS degree generally receive Junior class standing, with 64 semester credit hours applied toward the BSET or BSCM degree.

Construction Management and Engineering Technology students learn through applied technical courses and hands-on laboratories where they interact with experienced professors with many years of real-world engineering, design, project management, and product development experience. Graduation with a BS degree in Construction Management (BSCM) or Engineering Technology (BSET) opens the door to many exciting and challenging professional careers. Graduates choose from a variety of exciting career options where they enjoy productive professional careers with exceptional employment rates and excellent salaries.

EMPLOYMENT OPPORTUNITIES FOR GRADUATES

Graduates of our programs can be found in every sector of the global economy. Examples of employment opportunities and examples of recent job titles are provided below for each program.

CIVIL ENGINEERING TECHNOLOGY

Civil Engineering Technology (CET) graduates find employment in a wide range of positions in construction, surveying, engineering and architectural firms; local, state and national government; environmental and public health agencies; state departments of transportation and highways; and private business and industry. Specific job titles of recent graduates include transportation technician, highway technician, engineer-in-training, materials supervisor, surveying crew chief, civil engineering detailer/designer, office engineer, construction estimator or planner, engineering assistant, project engineer and assistant project manager.

CONSTRUCTION MANAGEMENT

Construction Management (CM) graduates plan, direct, and coordinate a wide variety of construction projects, including the building of all types of residential, commercial, and industrial structures,
roads, bridges, wastewater treatment plants, and schools and hospitals. Construction managers may oversee an entire project or just part of a project. They often work with or for owners, engineers, architects, and others who are involved in the construction process. Construction managers evaluate and help determine appropriate construction delivery systems and the most cost-effective plan and schedule for completing the project.

**ELECTRICAL ENGINEERING TECHNOLOGY**

Electrical Engineering Technology (ELET) graduates find employment in many sectors of the economy. Almost any aspect of communications, electronic instrumentation, computer applications, computer networking, electric power generation and distribution, or consumer electronics has a need for graduates with understanding of the applications of electrical technology. A few examples are systems administrator for networked computer systems, systems design for a telecommunications company, avionics control systems for aircraft programs, applications design for HVAC and building power-control systems.

**FIRE SAFETY ENGINEERING TECHNOLOGY**

Fire Safety Engineering Technology (FSET) graduates find employment in numerous areas associated with fire protection to include prevention, suppression, building design and arson investigation, emergency preparedness, safety analysis and mitigation. The FSET program stresses the importance of personal communication skills and the ability to function in a team environment. Some typical job titles of recent graduates include firefighter, arson investigator, fire prevention officer, fire inspector, and fire captain.

**MECHANICAL ENGINEERING TECHNOLOGY**

Mechanical Engineering Technology (MET) graduates use the principles of energy, materials, and mechanics to design, build, test and maintain a wide variety of machines, processes, and systems with employment in the automotive, aerospace, alternative energy and other high-tech industries. METs work in areas such as computer-aided design, plant maintenance or production, research and development, or as laboratory technicians, production assistants, manufacturing or quality control engineers, product and materials testing technologists, or applications engineers.

**SPECIALIZED ACCREDITATION**

The Civil, Electrical, and Mechanical Engineering Technology programs are accredited by the Technology Accreditation Commission (TAC) of ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202, Phone: 410-347-7700.

**DISTANCE EDUCATION OPTIONS**

In addition to the on-campus programs, the upper division of the BSET programs in Electrical Engineering Technology and Fire Safety Engineering Technology are offered over the Internet to part-time students. This allows students who already hold an AAS degree to complete their junior and senior years of the BSET program at a distance. Students are required to come to the campus only for ELET laboratories. The ELET laboratories are currently offered on a schedule of Saturdays during the summer school sessions. Estimated completion time for the distance delivery of the junior and senior years is approximately four years, including summers since students generally take two courses per semester.

**ENGINEERING TECHNOLOGY PROGRAM EDUCATIONAL OBJECTIVES AND OUTCOMES**

**PROGRAM EDUCATIONAL OBJECTIVES**

These are statements that describe the expected accomplishments of graduates during the first few years after graduation.

The Department of Engineering Technology at UNC Charlotte is committed to providing the environment and expertise to ensure that its graduates make substantive contributions in their professional endeavors after graduation, both in the areas of technical proficiency and community involvement.

Accordingly, graduates of the BSET Civil, Electrical, Fire Safety, and Mechanical Engineering Technology programs and BSCM Construction Management program contribute to society as productive technologists and engaged citizens by:

1.) Applying general and discipline-specific concepts and methodologies to identify, analyze, and solve technical problems.

2.) Articulating technical material in a professional manner to potentially diverse audiences and in a variety of circumstances, employing effective oral and written strategies and techniques.

3.) Assuming leadership roles and contributing within team environments while modeling ethical, respectful, and professional behavior at all times.

4.) Recognizing and appreciating the environmental, societal, and fiscal impact of the technical professions in a local, national, and global context.

5.) Demonstrating an individual desire and commitment to pursue continuous self-improvement and lifelong learning.

**PROGRAM OUTCOMES**

These are statements that describe what students are expected to know and able to do by the time of graduation. Graduates with a BSCM or BSET degree from UNC Charlotte will be able to:

1.) Utilize appropriate tools to acquire data and analyze problems. (TAC 3a, 3b, 3c – see below)

2.) Demonstrate effective skills in the development
and presentation of team projects. (TAC 3e, 3g, 3k)

3.) Exhibit knowledge and skills consistent with the expectations of a practicing engineering technologist. (TAC 3h, 3j, 3k)

4.) Generate creative and realistic solutions to defined problems and projects. (TAC 3a, 3d, 3f)

5.) Recognize the value of diversity, and identify ethical and societal issues in business and technical tasks. (TAC 3i, 3j)

6.) Solve problems and design components, systems, or processes appropriate to the discipline. (TAC 3a, 3d, & Program Criteria)

Each program defines the specific details of this outcome.

The Construction Management and Engineering Technology programs identify, measure, and improve student competencies through assessment and continuous improvement of program outcomes, which are mapped to the TAC of ABET Criterion 3 (a through k) criteria listed below:

<table>
<thead>
<tr>
<th>TAC of ABET Criterion 3 a through k Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Each program must demonstrate that graduates have:</td>
</tr>
<tr>
<td>a. An appropriate mastery of the knowledge, techniques, skills, and modern tools of their disciplines.</td>
</tr>
<tr>
<td>b. An ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering, and technology.</td>
</tr>
<tr>
<td>c. An ability to conduct, analyze, and interpret experiments and apply experimental results to improve processes.</td>
</tr>
<tr>
<td>d. An ability to apply creativity in the design of systems, components, or processes appropriate to program objectives</td>
</tr>
<tr>
<td>e. An ability to function effectively on teams.</td>
</tr>
<tr>
<td>f. An ability to identify, analyze, and solve technical problems.</td>
</tr>
<tr>
<td>g. An ability to communicate effectively.</td>
</tr>
<tr>
<td>h. A recognition of the need for and an ability to engage in lifelong learning.</td>
</tr>
<tr>
<td>i. An ability to understand professional, ethical, and social responsibilities.</td>
</tr>
<tr>
<td>j. A respect for diversity and a knowledge of contemporary professional, societal, and global issues.</td>
</tr>
<tr>
<td>k. A commitment to quality, timeliness, and continuous improvement.</td>
</tr>
</tbody>
</table>

**BACHELOR OF SCIENCE IN CONSTRUCTION MANAGEMENT (BSCM)**

The Bachelor of Science in Construction Management (BSCM) program is designed to provide the construction education necessary for entry into the construction industry (residential, commercial, industrial sectors, infrastructure, and heavy horizontal construction) and related careers, including, but not limited to, real estate and land development, infrastructure development, code enforcement, and insurance, among others.

The program is further enhanced by a business / management core which includes courses in statistics, computer applications, economics, accounting, engineering economics, business management, business law, finance, and construction law.

The Construction Management program shares a common lower division (freshman and sophomore year) curriculum with the Civil Engineering Technology (CIET) Program, providing students with a two-year window for exploration to determine which degree, the BS in Civil Engineering Technology or BS in Construction Management, is their desired academic objective.

**REQUIREMENTS FOR ADMISSION**

Applicants for this program may enter directly after completing high school, as a lower-division transfer without a completed Associate in Applied Science (AAS), or may enter with 64 credit hours for an AAS degree in Architectural, Civil, Construction, or other similarly named Engineering Technology degree earned at a technical or community college and approved by the department.

**FRESHMAN ADMISSION**

Applicants entering as freshmen must meet the University admission requirements.

**TRANSFER ADMISSION**

Transfer applicants not having the Associate in Applied Science (AAS) degree or its equivalent must meet University admission requirements.

Transfer applicants with AAS degrees must:

1) Hold an AAS degree in a field from among: Architectural, Building Construction, Civil Engineering Technology, Construction Management, Design and Drafting, Surveying Technology, or similar title with curriculum acceptable to the department (It should be noted by potential transfer students that students with an AAS in Civil Engineering Technology are typically best positioned for entry to the program with fewest entrance deficiencies.);

2) An overall GPA of at least 2.2 (based on the 4.0 system) on all courses taken at the technical institute or community college; and

3) Have completed satisfactorily the prerequisite background courses for the program (a limited
number of such background courses may be made up by taking them at UNC Charlotte).

Acceptance of the AAS degree indicates the acceptance of up to 64 hours toward the Bachelor of Science in Construction Management (BSCM) degree program only. These hours may not be valid toward other degree programs at UNC Charlotte.

There is considerable variance in the contents of technical programs throughout the United States. Should this result in entrance deficiencies, the student can usually remove these deficiencies at a community or technical college prior to admission to UNC Charlotte, or during the first year at UNC Charlotte.

RESIDENCE REQUIREMENTS
A student must earn the last 30 semester hours of credit toward the degree and the last 12 semester hours of work in the major at UNC Charlotte to satisfy residence requirements.

ACADEMIC REQUIREMENTS AND DISCONTINUANCE CONDITIONS IN CONSTRUCTION MANAGEMENT
In addition to University and College of Engineering conditions, a student who is admitted to the CM program without meeting ALL published admission requirements is expected to remove all admission deficiencies within one year. Violators are subject to discontinuance and enrollment in senior level coursework is prohibited until all deficiencies are removed.

COURSE REQUIREMENTS
Course requirements correspond to the mode of admission for each student as outlined hereafter.

1) Entering Freshmen: students admitted as entering freshmen will complete the respective four-year curriculum as described below.

2) Transfer students holding an AAS degree: transfer students with an acceptable associate degree as defined previously under admission requirements begin the program at the junior year with up to 64 credit hours awarded. Prerequisites for students holding an acceptable associate degree from a community or technical college are listed below.

3) Transfer students not holding an associate degree: transfer students not holding an AAS degree must complete the remaining coursework for the four-year curriculum after transfer credit application.

PREREQUISITES FOR ADMISSION
Students must have satisfactorily completed the following subjects in their two-year associate degree program:

- Construction Methods (3)
- Construction Materials (3)
- Statics (3)
- Strength of Materials (3)
- Construction Surveying (3)
- Computer-Aided Drafting (3)
- Environmental Technology, Hydraulics, or Hydrology (3)
- Engineering Technology Computing Applications (3)

Suggested Curriculum:
B.S. in Construction Management (BSCM)

<table>
<thead>
<tr>
<th>First Year</th>
<th>Fall Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course</td>
<td>Credits</td>
</tr>
<tr>
<td>ENGL 1101</td>
<td>3</td>
</tr>
<tr>
<td>ETCE 1121</td>
<td>3</td>
</tr>
<tr>
<td>ETGR 1100</td>
<td>3</td>
</tr>
<tr>
<td>ETGR 1103</td>
<td>2</td>
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<tr>
<td>ETGR 1201</td>
<td>2</td>
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<tr>
<td>MATH 1100</td>
<td>3</td>
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</table>

<table>
<thead>
<tr>
<th>Spring Semester</th>
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</thead>
<tbody>
<tr>
<td>Course</td>
</tr>
<tr>
<td>CMET 1680</td>
</tr>
<tr>
<td>ENGL 1102</td>
</tr>
<tr>
<td>ETCE 1211/1211L</td>
</tr>
<tr>
<td>ETCE 1222/1222L</td>
</tr>
<tr>
<td>ETCE 1104</td>
</tr>
<tr>
<td>MATH 1103</td>
</tr>
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</table>
### Second Year

#### Fall Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETCE 2112/2112L Construction Surveying &amp; Layout / Lab</td>
<td>3</td>
</tr>
<tr>
<td>ETGR 2101 Applied Mechanics I</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 1200, CHEM 1111 or 1251</td>
<td>3</td>
</tr>
<tr>
<td>MATH 1121 ET Calculus</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 1101 Introductory Physics I</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 1101L Introductory Physics I Lab</td>
<td>1</td>
</tr>
</tbody>
</table>

#### Spring Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMET 2680 Professional Development II: Plan Reading &amp; Quantity Takeoff</td>
<td>1</td>
</tr>
<tr>
<td>ETCE 2410 Introduction to Environmental Engineering Technology</td>
<td>3</td>
</tr>
<tr>
<td>ETGR 2102 Applied Mechanics II</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 1102 Introductory Physics II</td>
<td>3</td>
</tr>
<tr>
<td>STAT 1220 Elements of Statistics I</td>
<td>3</td>
</tr>
<tr>
<td>ECON 2101 Principles of Economics – Macro**</td>
<td>3</td>
</tr>
</tbody>
</table>

### Third Year

#### Fall Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 2121 Principles of Accounting I</td>
<td>3</td>
</tr>
<tr>
<td>CMET 3224 Construction Project Administration</td>
<td>3</td>
</tr>
<tr>
<td>ETCE 3131 Foundations &amp; Earthwork</td>
<td>3</td>
</tr>
<tr>
<td>ETCE 3131L Soil Testing Lab (W)</td>
<td>1</td>
</tr>
<tr>
<td>ETCE 3163 Structural Analysis &amp; Design I</td>
<td>3</td>
</tr>
<tr>
<td>ETCE 3163L Structures &amp; Materials Lab (W)</td>
<td>1</td>
</tr>
<tr>
<td>ETGR 3071 ET Professional Seminar (W)</td>
<td>1</td>
</tr>
</tbody>
</table>

#### Spring Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 2122 Principles of Accounting II</td>
<td>3</td>
</tr>
<tr>
<td>CMET 3123 Cost Estimating</td>
<td>3</td>
</tr>
<tr>
<td>CMET 3680 Professional Development III: Temporary Structures</td>
<td>1</td>
</tr>
<tr>
<td>ETGR 3222 Engineering Economics^^^</td>
<td>3</td>
</tr>
<tr>
<td>ETCE 3271 Building Systems</td>
<td>3</td>
</tr>
<tr>
<td>ETCE 3271L Building Systems Lab (W)</td>
<td>1</td>
</tr>
<tr>
<td>LBST 110X Arts &amp; Society**</td>
<td>3</td>
</tr>
</tbody>
</table>

### Fourth Year

#### Fall Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLAW 3150 Business Law I^^^</td>
<td>3</td>
</tr>
<tr>
<td>CMET 4125 Construction Codes, Documents, &amp; Permits</td>
<td>2</td>
</tr>
<tr>
<td>CMET 4126 Project Scheduling &amp; Control</td>
<td>3</td>
</tr>
<tr>
<td>CMET 4126L Construction Practices Lab (W)</td>
<td>1</td>
</tr>
<tr>
<td>ETCE 4251 Highway Design &amp; Construction</td>
<td>3</td>
</tr>
<tr>
<td>LBST 2101 Western Culture &amp; History**</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Spring Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMET 4228 Construction Office Operations</td>
<td>2</td>
</tr>
<tr>
<td>CMET 4272 Capstone Project (O, W)</td>
<td>2</td>
</tr>
<tr>
<td>CMET 4680 Professional Development IV</td>
<td>1</td>
</tr>
<tr>
<td>MGMT 3140 Management &amp; Organizational Behavior^^^</td>
<td>3</td>
</tr>
<tr>
<td>Core Elective (Technical or Construction B&amp;M)^^</td>
<td>3</td>
</tr>
<tr>
<td>LBST 2102 Global Connections**</td>
<td>3</td>
</tr>
<tr>
<td>LBST 221X Ethical &amp; Cultural Critique**</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credit Hours = 128**

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*Course selected based on Math Placement Test.

** General education courses are chosen jointly by student and advisor to ensure that all graduation requirements are met. Non-AAS degree students must satisfy University and Department General Education requirements. AAS degree students must satisfy Department General Education requirements.

^^^Completion of the Construction B&M (business/management) Core is required: ETGR 1100, ECON 2101, ETGR 3222, ACCT 2121, ACCT 2122, BLAW 3150, and MGMT 3140. ECON 2101 doubles as Construction B&M Core and Social Science Elective in sophomore year. ETGR 1100 and ETGR 3222 serve as replacement prerequisites to INFO 2130 and ECON 2101 for construction students taking MGMT 3140 and FINN 3120 (core elective). Construction B&M Core courses must be completed with a grade of C or above.

^Core Elective may be Technical or Construction B&M. Technical Core Electives must be courses within the Department of Engineering Technology and approved by advisor (ETGR, ETCE, CMET, ETFS, ETEE, ELET, or ETME). Construction B&M Elective must be: MKTG 3110, FINN 3120, CMET 4127, or approved by the construction faculty advisor.

^Writing elective available upon successful completion of ENGL 1103.

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**BACHELOR OF SCIENCE IN ENGINEERING TECHNOLOGY (BSET)**

Disciplines of study in Engineering Technology at UNC Charlotte include:

**CIVIL ENGINEERING TECHNOLOGY**

Civil Engineering Technology includes computer-aided drafting (CAD); structures (analysis, design of structural steel and reinforced concrete); construction (cost estimating, construction planning...
and administration); transportation (surveying, highway design and construction); water resources (hydraulics, hydrology, and environmental); and geotechnical (soil mechanics, foundations and earthwork).

ELECTRICAL ENGINEERING TECHNOLOGY
Electrical Engineering Technology includes programming, AC/DC circuits, digital circuits, microprocessors and microcontrollers, solid-state electronics, integrated circuits, analog and digital systems, linear and nonlinear networks, power systems, communications, and control systems.

FIRE SAFETY ENGINEERING TECHNOLOGY
Fire Safety Engineering Technology includes principles of fire behavior and combustion, fire protection, hydraulics, fire prevention, building construction for fire service, industrial hazards, risk management, fire safety problem analysis, active and passive protection systems, command and control, fire protection law, technical drawing and CAD, research investigation, and leadership.

MECHANICAL ENGINEERING TECHNOLOGY
Mechanical Engineering Technology includes technical and mechanical drawing, computer-aided design, machine design, manufacturing and machine processes, fluid power systems, statics and strength of materials, mechanisms, stress analysis, instrumentation and controls, thermodynamic systems, heat transfer, dynamics, methods analysis and engineering economics.

ADMISSION REQUIREMENTS
Students for this degree may enter degree programs in the Department of Engineering Technology as freshmen or as transfer students.

Freshman Admission
Applicants entering as freshmen must meet the general University admission requirements.

Transfer Admission
Transfer admission into the Department occurs in one of two situations:

1) Transfer applicants not having the Associate in Applied Science (AAS) degree or its equivalent must meet general University admission requirements.

2) Transfer applicants with an Associate of Applied Science (AAS) degree must:

   a) Hold an Associate of Applied Science (AAS) degree in a field appropriate to the option they plan to enter. Acceptable AAS degrees include Architectural, Automation, Building Construction, Civil, Construction, Computer, Controls, Design and Drafting, Electrical, Electronics, Environmental, Fire Protection, Fire Science, Industrial, Instrumentation, Manufacturing, Mechanical, Optics, Robotics, Surveying or similar title with curriculum acceptable to the department. A minimum grade point average of 2.2 (out of 4.0) in the AAS degree is required.

b) Have completed satisfactorily the prerequisite background courses for the option they plan to enter (missing background courses may be taken at UNC Charlotte).

Acceptance of a completed AAS degree indicates the acceptance of up to 64 semester credit hours toward the Bachelor of Science in Engineering Technology degree program only. These hours may not be valid toward other degree programs at UNC Charlotte.

RESIDENCE REQUIREMENTS
A student must earn the last 30 semester hours of credit toward the BSET degree and the last 12 semester hours of work in the major at UNC Charlotte to satisfy residence requirements.

EXPERIENTIAL LEARNING REQUIREMENTS
All students must complete an experiential learning course. Experiential courses are practice-oriented courses such as cooperative education, internships, senior design projects, or undergraduate research.

Internships, or 49erships, involve paid or unpaid work in a career-related position for professional experience. A minimum of 80 work hours and 5 weeks for one semester is required to complete the program. Fall and Spring 49erships are part-time. Summer 49erships may be full- or part-time. Full-time students who are in good University standing, have completed 30 credit hours, and have a 2.0 minimum cumulative GPA are eligible. Internships do not offer academic credit, but are noted on the student’s transcript; students pay a course registration fee. Approval for enrollment must be arranged before the student begins a work experience. Students may begin this program during their sophomore year; transfer students must complete 12 credit hours at UNC Charlotte before making application for the program. For more information, contact the College of Engineering Office of Student Development and Success or the University Career Center.

REMEDICATION OF ACADEMIC ENTRANCE REQUIREMENTS FOR AAS TRANSFER STUDENTS
In addition to University and College of Engineering requirements, an AAS transfer student who is admitted to any BSET program without meeting ALL published admission requirements is expected to remove all admission deficiencies within one year. Violators are subject to discontinuance and
enrollment in senior level coursework is prohibited until all deficiencies are removed.

COURSE REQUIREMENTS
Course requirements correspond to the mode of admission for each student as outlined hereafter.

1) Entering Freshmen: Students admitted as freshmen will complete the appropriate four year curriculum for the program into which they were admitted.

2) Transfer students not holding an appropriate AAS degree: Transfer students not holding an appropriate AAS degree must complete the remaining coursework outlined for the respective four year curriculum that they were admitted into after evaluation and application of any transfer credit.

3) Transfer students holding an AAS degree: Transfer students with an acceptable Associate of Applied Science (AAS) degree as defined previously under admission requirements may begin the program in the junior year with up to 64 transfer credit hours awarded. Prerequisites for students holding an AAS degree from a community or technical college are listed below.

PREREQUISITES FOR ADMISSION TO THE CIVIL, ELECTRICAL, AND MECHANICAL ENGINEERING TECHNOLOGY PROGRAMS
Students transferring with an AAS degree must have satisfactorily completed the following subjects in their two-year program:

- English Composition, Technical Writing and/or Public Speaking (6 semester hours)
- Algebra and Trigonometry (6 semester hours)
- Differential and Integral Calculus (3 semester hours)
- General Physics (with lab) (4 semester hours)
- Additional Physics or Chemistry (with lab) or Geology (for CIE) (4 semester hours)
- Humanities or Social Sciences (3 semester hours)
- Technical Courses in Major Area as listed under Discipline Specific Prerequisites below (up to 38 semester hours)

Total maximum transfer credit from two-year colleges is 64 semester hours.

DISCIPLINE SPECIFIC PREREQUISITES

Civil
- ET Computer Applications
- Computer Aided Drafting
- Construction Surveying
- Statics
- Strength of Materials
- Construction Materials
- Construction Methods
- Hydraulics or fluid mechanics or environmental technology

Electrical
- DC Circuits and DC Circuits Laboratory
- AC Circuits and AC Circuits Laboratory
- Circuit Simulation
- Digital Circuits and Digital Circuits Laboratory
- Electronic Devices and Electronic Devices Laboratory
- Power Systems and Machines
- Microprocessors
- Instrumentation or Programmable Logic Controllers and associated laboratory
- C Programming

Mechanical
- Drafting/Computer Aided Drafting
- Machine Processes
- Statics
- Metallurgy or Engineering Materials
- Kinematics or Mechanisms
- Basic Electrical Circuits (in addition to Physics II)
- Computer Programming (using a higher level language such as Visual Basic, FORTRAN, or C++)

PREREQUISITES FOR ADMISSION TO THE FIRE SAFETY ENGINEERING TECHNOLOGY PROGRAM
Students transferring with an AAS degree must have satisfactorily completed the following subjects in their two-year associate degree program:

- English Composition, Technical Writing and/or Public Speaking (6-9 semester hours)
- Algebra (3 semester hours)
- Two science courses with Laboratory (8 semester hours)
- Humanities and/or Social Sciences (6-9 semester hours)
- Computer Literacy Course
- Technical Courses in Major Area as listed below (32-38 semester hours)
  - Introduction to Fire Protection
  - Fire Prevention and Public Education
  - Fire Detection and Fire Investigation
  - Building Construction
  - Inspections and Codes
  - Sprinklers and Automatic Alarms
  - Fire Protection Law
  - Fire Fighting Strategies
  - Chemistry of Hazardous Materials
  - Hydraulics and Water Distribution
  - Managing Fire Services

CURRICULUM OUTLINE: CIVIL ENGINEERING TECHNOLOGY PROGRAM

The Civil Engineering Technology program shares a common curriculum with the Construction Management program for the first two years.

Students may move between the common programs until the junior year when the curricula diverge. At the end of the sophomore year, students must select either the analysis and design-oriented Civil
Engineering Technology BSET degree or the management-oriented BSCM program.

AAS transfer students from approved programs will receive 64 credit hours for the AAS degree; thus, AAS students need only to complete the upper-division portion of the curriculum listed below and remediate any entrance deficiencies noted upon matriculation. The curriculum is outlined below for both entering Freshmen and AAS transfer students.

### Suggested Curriculum:
#### Civil Engineering Technology Program

<table>
<thead>
<tr>
<th>First Year</th>
<th></th>
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<tbody>
<tr>
<td><strong>Fall Semester</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Course</strong></td>
<td><strong>Credits</strong></td>
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<tr>
<td>ENGL 1101 English Composition</td>
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<tr>
<td>ETCE 1121 Construction Methods</td>
<td>3</td>
</tr>
<tr>
<td>ETGR 1100 Engineering Computer Apps</td>
<td>3</td>
</tr>
<tr>
<td>ETGR 1103 Technical Drawing I</td>
<td>2</td>
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<tr>
<td>ETGR 1201 Intro to Engineering Technology</td>
<td>2</td>
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<tr>
<td>MATH 1100 College Algebra &amp; Probability*</td>
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<td><strong>Spring Semester</strong></td>
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<tr>
<td><strong>Course</strong></td>
<td><strong>Credits</strong></td>
</tr>
<tr>
<td>CMET 1680 Professional Development I: Construction Safety</td>
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<tr>
<td>ENGL 1102 Writing in the Academic Community^</td>
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<tr>
<td>ETCE 1211/1211L Surveying I / Lab</td>
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</tr>
<tr>
<td>ETCE 1222/1222L Construction Materials / Lab</td>
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<tr>
<td>ETCE 1104 Civil/Construction CAD Applications</td>
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<tr>
<td>MATH 1103 Precalculus Math for Science and Engineering*</td>
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<table>
<thead>
<tr>
<th>Second Year</th>
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<tbody>
<tr>
<td><strong>Fall Semester</strong></td>
<td></td>
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<tr>
<td><strong>Course</strong></td>
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<tr>
<td>ETCE 2112/2112L Construction Surveying &amp; Layout / Lab</td>
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<tr>
<td>ETGR 2101 Applied Mechanics I</td>
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<td>GEOL 1200, CHEM 1111 or 1251</td>
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<tr>
<td>MATH 1121 ET Calculus*</td>
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<tr>
<td>PHYS 1101 Introductory Physics I</td>
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<tr>
<td>PHYS 1101L Introductory Physics I Lab</td>
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<td><strong>Spring Semester</strong></td>
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<td><strong>Course</strong></td>
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<tr>
<td>ETCE 2410 Introduction to Environmental Engineering Technology</td>
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<tr>
<td>CMET 2680 Professional Development II: Plan Reading &amp; Quantity Takeoff</td>
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<td>ETGR 2102 Applied Mechanics II</td>
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<td>PHYS 1102 Introductory Physics II</td>
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<td>PHYS 1102L Introductory Physics II Lab</td>
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<tr>
<td>STAT 1220 Elements of Statistics I</td>
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<tr>
<td>Social Science Elective**: ANTH 1101; GEOG 1105; POLS 1110; ECON 1101 or 2101; or SOCY 1101</td>
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<table>
<thead>
<tr>
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<tbody>
<tr>
<td><strong>Fall Semester</strong></td>
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<tr>
<td><strong>Course</strong></td>
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</tr>
<tr>
<td>CMET 3224 Construction Project Administration</td>
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<tr>
<td>ETCE 3131 Foundations &amp; Earthwork</td>
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<tr>
<td>ETCE 3131L Soil Testing Lab (W)</td>
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<tr>
<td>ETCE 3163 Structural Analysis &amp; Design I</td>
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<td>ETCE 3163L Structures &amp; Materials Lab</td>
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<td>ETGR 3071 ET Professional Seminar (W)</td>
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<td>LBST 110X Arts &amp; Society**</td>
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<tr>
<td><strong>Course</strong></td>
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<tr>
<td>CMET 3680 Professional Development III: Temporary Structures</td>
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<td>ETCE 3264 Structural Analysis II</td>
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<td>ETGR 3171 Engineering Analysis I</td>
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<td>ETGR 3222 Engineering Economics</td>
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<tr>
<td>LBST 2101 Western History &amp; Culture**</td>
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### Fourth Year

#### Fall Semester

<table>
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<th>Course</th>
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<tbody>
<tr>
<td>CHEM 1111, 1251, or GEOL 1200****</td>
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<tr>
<td>CHEM 1111L, 1251L, or GEOL 1200L****</td>
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<tr>
<td>ETCE 4251 Highway Design &amp; Construction</td>
<td>3</td>
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<tr>
<td>ETCE 4165 Structural Steel Design</td>
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<tr>
<td>LBST 2102 Global Connections**</td>
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<td>Major Elective***</td>
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<tr>
<td>Major Elective Lab (W)***</td>
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#### Spring Semester

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>ETCE 4143 Water &amp; Wastewater Systems</td>
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<tr>
<td>ETCE 4266 Reinforced Concrete Design</td>
<td>3</td>
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<tr>
<td>ETCE 4272 Capstone Project (O, W)</td>
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<tr>
<td>CMET 4680 Professional Development IV</td>
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<tr>
<td>LBST 221X Ethical &amp; Cultural Critique**</td>
<td>3</td>
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<td>Major Elective***</td>
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</table>

**Total Credit Hours = 128**

^Writing elective available upon successful completion of ENGL 1103.

*Course selected based on Math Placement Test.

**General education courses are chosen jointly by student and advisor to ensure that all graduation requirements are met. Non-AAS degreed students must satisfy University and Department General Education requirements. AAS degreed students must satisfy Department General Education requirements.

***Major elective courses are approved by the Department as major electives for the respective program. A list is maintained in and published by the Department.

****Transfer students with an AAS may have completed differing science courses at the community college. Generally, AAS transfer students entering the Civil ET program will take Chemistry in the junior year at UNC Charlotte; however, the following chart will provide additional guidance for fulfilling the science requirement at UNC Charlotte:

<table>
<thead>
<tr>
<th>Transfer Students with an AAS Degree who have previously taken:</th>
<th>Shall Take at UNC Charlotte:</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 semesters of physics and no chemistry</td>
<td>CHEM 1251 with lab</td>
</tr>
<tr>
<td>1 semester of physics and 1 semester of chemistry</td>
<td>PHYS 1102 with lab</td>
</tr>
<tr>
<td>2 semesters of physics and 1 semester of chemistry</td>
<td>GEOL 1200 with lab</td>
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### Eletrical Engineering Technology Program

<table>
<thead>
<tr>
<th>First Year</th>
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<tbody>
<tr>
<td>Fall Semester</td>
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<tr>
<td>Course</td>
<td></td>
</tr>
<tr>
<td>ENGL 1101 English Composition</td>
<td>3</td>
</tr>
<tr>
<td>MATH 1100 College Algebra &amp; Probability*</td>
<td>3</td>
</tr>
<tr>
<td>ELET 1101 Simulation &amp; Schematic Capture</td>
<td>1</td>
</tr>
<tr>
<td>ELET 1111 DC Circuits</td>
<td>3</td>
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<tr>
<td>ELET 1111L DC Circuits Lab</td>
<td>1</td>
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<tr>
<td>ETGR 1100 Engineering Computer Apps</td>
<td>3</td>
</tr>
<tr>
<td>ETGR 1201 Intro to Engineering Technology</td>
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#### Spring Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ENGL 1102 Writing in the Academic Community</td>
<td>3</td>
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<tr>
<td>MATH 1103 Precalculus Math for Science and Engineering*</td>
<td>3</td>
</tr>
<tr>
<td>ELET 1231 Digital Circuits</td>
<td>3</td>
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<tr>
<td>ELET 1231L Digital Circuits Lab</td>
<td>1</td>
</tr>
<tr>
<td>ELET 1212 AC Circuits</td>
<td>3</td>
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<tr>
<td>ELET 1212L AC Circuits Lab</td>
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<tr>
<td>Social Science Elective**</td>
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### Second Year

#### Fall Semester

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>STAT 1220 Elements of Statistics I</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 1101 Introductory Physics I</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 1101L Introductory Physics I Lab</td>
<td>1</td>
</tr>
<tr>
<td>ELET 2121 Electronics I</td>
<td>3</td>
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<tr>
<td>ELET 2121L Electronics I Lab</td>
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<tr>
<td>ELET 2141 Introduction to Power Systems</td>
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#### Spring Semester

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>MATH 1121 ET Calculus</td>
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<tr>
<td>PHYS 1102 Introductory Physics II</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 1102L Introductory Physics II Lab</td>
<td>1</td>
</tr>
<tr>
<td>ELET 2231 Microprocessor Fundamentals</td>
<td>3</td>
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<tr>
<td>ELET 2201 C Programming</td>
<td>3</td>
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<tr>
<td>ELET 2241 Instrumentation</td>
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<td>ELET 2241L Instrumentation Lab</td>
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### Third Year
#### Fall Semester

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>CHEM 1251 Principles of Chemistry****</td>
<td>3</td>
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<tr>
<td>ELET 3132 Digital Systems</td>
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<tr>
<td>ELET 3132L Digital Systems Lab (W)</td>
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<tr>
<td>ELET 3113 Network Analysis</td>
<td>3</td>
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<tr>
<td>ETGR 3071 ET Professional Seminar (W)</td>
<td>1</td>
</tr>
<tr>
<td>ETGR 3171 Engineering Analysis</td>
<td>3</td>
</tr>
<tr>
<td>LBST 110X Arts &amp; Society**</td>
<td>3</td>
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<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ELET 3222 Electronics II</td>
<td>3</td>
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<tr>
<td>ELET 3222L Electronics II Lab (W)</td>
<td>1</td>
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<tr>
<td>ETGR 3222 Engineering Economics</td>
<td>3</td>
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<tr>
<td>ELET 3232 Microcontroller Systems</td>
<td>3</td>
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<tr>
<td>ETGR 2122 Technical Programming</td>
<td>3</td>
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<tr>
<td>LBST 2101 Western Culture &amp; History**</td>
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#### Spring Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ELET 3222 Electronics II</td>
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<tr>
<td>ELET 3222L Electronics II Lab (W)</td>
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<tr>
<td>ETGR 3222 Engineering Economics</td>
<td>3</td>
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<tr>
<td>ELET 3232 Microcontroller Systems</td>
<td>3</td>
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<tr>
<td>ETGR 2122 Technical Programming</td>
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### Fourth Year
#### Fall Semester

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<th>Course</th>
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<tbody>
<tr>
<td>ELET 4142 Power Electronics / Networks</td>
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<tr>
<td>ELET 4151 Communication Systems</td>
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<tr>
<td>ELET 4151L Communication Systems Lab (W)</td>
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<tr>
<td>ELET 4191 Applied Project Management</td>
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<td>ELET 4192 Senior Project I (W)</td>
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<td>Major Elective***</td>
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<tr>
<td>LBST 2102 Global Connections</td>
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<th>Course</th>
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<tr>
<td>ELET 4223 Active Filters</td>
<td>3</td>
</tr>
<tr>
<td>ELET 4242 Control Systems</td>
<td>3</td>
</tr>
<tr>
<td>ELET 4293 Senior Project II</td>
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<tr>
<td>Major Elective***</td>
<td>3</td>
</tr>
<tr>
<td>LBST 221X Ethical &amp; Cultural Critique**</td>
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#### Spring Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ELET 4232 Power Electronics / Networks</td>
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<tr>
<td>ELET 4242 Control Systems</td>
<td>3</td>
</tr>
<tr>
<td>ELET 4293 Senior Project II</td>
<td>2</td>
</tr>
<tr>
<td>Major Elective***</td>
<td>3</td>
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</table>

**Total Credit Hours = 128**

*Course selected based on Math Placement Test.

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<thead>
<tr>
<th>Degree who have previously taken:</th>
<th>Shall Take at UNC Charlotte:</th>
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<tbody>
<tr>
<td>2 semesters of physics and no chemistry</td>
<td>CHEM 1251</td>
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<tr>
<td>1 semester of physics and 1 semester of chemistry</td>
<td>PHYS 1102 with lab</td>
</tr>
<tr>
<td>2 semesters of physics and 1 semester of chemistry</td>
<td>GEOL 1200, BIOL 1110, PHYS 1130, or CHEM 1252</td>
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### Suggested Curriculum:

**Fire Safety Engineering Technology Program**

#### First Year

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>CHEM 1111 Chemistry in Today’s Society</td>
<td>3</td>
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<tr>
<td>ENGL 1101 English Composition</td>
<td>3</td>
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<tr>
<td>MATH 1100 College Algebra &amp; Probability</td>
<td>3</td>
</tr>
<tr>
<td>ETFS 1120 Fundamentals of Fire Protection</td>
<td>3</td>
</tr>
<tr>
<td>ETGR 1201 Introduction to Engineering Technology</td>
<td>2</td>
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<tr>
<td>ETFS 1100 Engineering Technology Computer Applications</td>
<td>3</td>
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<table>
<thead>
<tr>
<th>Course</th>
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<tr>
<td>ENGL 1102 Writing in the Academic Community</td>
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<tr>
<td>ETFS 1232 Fire Protection Hydraulics &amp; Water Supply</td>
<td>3</td>
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<tr>
<td>ETFS 1252 Fire Protection Law</td>
<td>3</td>
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<tr>
<td>STAT 1220 Elements of Statistics I</td>
<td>3</td>
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<tr>
<td>ETFS 2126 Fire Investigation</td>
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#### Second Year

<table>
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<tbody>
<tr>
<td>PHYS 1101 Introductory Physics I</td>
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<td>ETFS 2124 Fundamentals of Fire Prevention</td>
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<td>ETFS 2132 Building Construction for Fire Protection</td>
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<tr>
<td>Social Science Elective (POLS 1110)</td>
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<tr>
<td>Directed Elective (W)^^^</td>
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#### Spring Semester

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<th>Course</th>
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<tbody>
<tr>
<td>PHYS 1102 Introductory Physics II</td>
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<td>PHYS 1102L Introductory Physics II Lab</td>
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<tr>
<td>ETFS 2230 Hazardous Materials</td>
<td>3</td>
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<tr>
<td>ETFS 2264 Fire Behavior &amp; Combustion</td>
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<td>ETFS 2264L Fire Behavior &amp; Combustion Lab</td>
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<td>ETGR 1103 Technical Drawing I</td>
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<tr>
<td>LBST 110X Arts &amp; Society**</td>
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### Third/Fourth Year - Odd Years
#### Fall Semester

<table>
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<th>Course</th>
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<tbody>
<tr>
<td>ETFS 3113 Building Fire Safety (W)</td>
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<tr>
<td>ETFS 3124 Risk Management for Emergency Service</td>
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</tr>
<tr>
<td>ETFS 3611 Professional Leadership Seminar</td>
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<tr>
<td>ETGR 3222 Engineering Economics</td>
<td>3</td>
</tr>
<tr>
<td>LBST 2101 Western Culture &amp; Society**</td>
<td>3</td>
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<tr>
<td>PSYC 2171 Introduction to Industrial / Organizational Psychology</td>
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#### Spring Semester

<table>
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<tr>
<td>POLS 3121 Urban Politics (or Directed Elective)</td>
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<td>ETFS 3103 Principles of Fire Behavior</td>
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<tr>
<td>ETFS 4123 Command &amp; Control of Major Disasters</td>
<td>3</td>
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<tr>
<td>LBST 2102 Global Connections**</td>
<td>3</td>
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<tr>
<td>POLS 3119 State &amp; Local Gov't</td>
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### Third/Fourth Year - Even Years
#### Fall Semester

<table>
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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>ETFS 3144 Active Fire Protection</td>
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<td>ETFS 3183 Fire Safety Engineering Problem Analysis</td>
<td>3</td>
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<td>ETFS 4323 Advanced Fire Service Administration</td>
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<td>LBST 221X Ethical Issues &amp; Cultural Critique**</td>
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<td>PSYC 3174 Organizational Psychology</td>
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#### Spring Semester

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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>ETFS 3123 Industrial Hazards &amp; Electricity</td>
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<tr>
<td>ETFS 3233 Applied Fire Engineering Design &amp; Analysis</td>
<td>3</td>
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<tr>
<td>ETFS 4243 Research Investigation (O, W)</td>
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<tr>
<td>POLS 3126 Administrative Behavior</td>
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<tr>
<td>Directed Elective (Humanities or Additional Social Science)**</td>
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**Total Credit Hours = 125**

**General education courses are chosen jointly by student and advisor to ensure that all graduation requirements are met. Non-AAS degreed students must satisfy University and Department General Education requirements. AAS degreed students must satisfy Department General Education requirements.**

^^^Directed electives may be major field courses or General Education courses. They are chosen jointly by student and advisor to ensure that all graduation requirements are met.

### Suggested Curriculum:
#### Mechanical Engineering Technology Program

#### First Year

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>ENGL 1101 English Composition</td>
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<tr>
<td>MATH 1100 College Algebra &amp; Probability*</td>
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<tr>
<td>PHYS 1101 Introductory Physics I</td>
<td>3</td>
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<tr>
<td>PHYS 1101L Introductory Physics I Lab</td>
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<tr>
<td>ETGR 1100 Engineering Technology</td>
<td>3</td>
</tr>
<tr>
<td>ETGR 1103 Technical Drawing I</td>
<td>2</td>
</tr>
<tr>
<td>ETGR 1201 Introduction to Engineering Technology</td>
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#### Spring Semester

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>ENGL 1102 Writing in the Academic Community</td>
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<tr>
<td>MATH 1103 Precalculus Math for Science and Engineering*</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 1102 Introductory Physics II</td>
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<td>PHYS 1102L Introductory Physics II Lab</td>
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<td>ETGR 1104 Technical Drawing II</td>
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<td>ETME 1101 Manufacturing Processes</td>
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#### Second Year

<table>
<thead>
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<tbody>
<tr>
<td>MATH 1121 Calculus for Engineering Technology*</td>
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</tr>
<tr>
<td>ETGR 2101 Applied Mechanics I</td>
<td>3</td>
</tr>
<tr>
<td>ETME 2156 Machine Shop Practices</td>
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<tr>
<td>ETME 2156L Machine Shop Practices Lab</td>
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<tr>
<td>ETME 2101 Applied Materials</td>
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<tr>
<td>ETME 2202 Introduction to Mechanical Design</td>
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<td>Social Science General Education Elective**</td>
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#### Spring Semester

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<tr>
<td>STAT 1220 Elements of Statistics I</td>
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<tr>
<td>ETGR 2106 AC &amp; DC Circuits</td>
<td>3</td>
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<tr>
<td>ETME 2102 Mechanisms</td>
<td>3</td>
</tr>
<tr>
<td>ETGR 2122 Technical Programming</td>
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<tr>
<td>LBST 2101 Western Culture &amp; History**</td>
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### Third Year

#### Fall Semester

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<tr>
<td>ETGR 3071 ET Professional Seminar</td>
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<tr>
<td>ETGR 3171 Engineering Analysis I</td>
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<td>ETME 3123 Strength of Materials</td>
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<td>ETME 3133 Fluid Mechanics</td>
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<td>LBST 110X Arts &amp; Society**</td>
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#### Spring Semester

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<tbody>
<tr>
<td>CHEM 1251 Principles of Chemistry****</td>
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<td>ETGR 3222 Engineering Economics</td>
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<td>ETME 3113 Dynamics</td>
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<tr>
<td>ETME 3143 Thermodynamics</td>
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<tr>
<td>ETME 3151 Fluid Mechanics Lab</td>
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<td>LBST 2102 Global &amp; Intercultural Connections**</td>
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### Fourth Year

#### Fall Semester

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>ETGR 3272 Applied Numerical Methods</td>
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<tr>
<td>ETME 3213 Machine Design I</td>
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<td>ETME 3232 Senior Design Project I</td>
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<td>ETME 3252 Thermo Lab</td>
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<td>ETME 3244 Applied Heat Transfer</td>
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#### Spring Semester

<table>
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<tr>
<td>ETME 3242 Senior Design Project II</td>
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<td>ETME 3251 Instrumentation Lab</td>
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<tr>
<td>ETME 3163 Instrumentation &amp; Controls</td>
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<tr>
<td>Major Elective***</td>
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<tr>
<td>Major Elective***</td>
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<tr>
<td>LBST 221X Ethical Issues &amp; Cultural Critique</td>
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</table>

**Total Credit Hours = 124**

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*Course selected based on Math Placement Test.

**General education courses are chosen jointly by student and advisor to ensure that all graduation requirements are met. Non-AAS degree students must satisfy University and Department General Education requirements. AAS degree students must satisfy Department General Education requirements.

***Major elective courses are approved by the Department as major electives for the respective program. A list is maintained in and published by the Department.

****Transfer students with an AAS may have completed differing science courses at the community college. Generally, AAS transfer students entering the Mechanical or Electrical ET programs will take Chemistry in the junior year at UNC Charlotte; however, the following chart will provide additional guidance for fulfilling the science requirement at UNC Charlotte:
Mechanical Engineering and Engineering Science

Chair and Professor: Scott Smith
Bonnie E. Cone Distinguished Professor in Teaching and Professor Emeritus: G. Mohanty
Professor Emeritus: P. DeHoff
Norvin Kennedy Dickerson Jr. Distinguished Professor: R. Hocken
SPX Distinguished Professor: S. Patterson
Professors: H. Cherukuri, M. Davies, Y. Hari, R. Johnson, R. Keanini, E. Morse, J. Raja, R. Smelser, Stuart Smith, R. Wilhelm
Research Assistant Professor: H. Zhang
Associate Professors: J. Cuttino, H. Estrada, S. Kelly, C. Lee, E. Munday, A. Soliman, M. Uddin
Senior Lecturers: J. Hill, K. Lawton, J. Raquet
Lecturers: M. Hodgins, J. Pritchard, L. Sharpe, R.G. Wilson
Adjunct Professors: A. Brown, W. Griffin, J. Mason, M. Malburg, D. Metz, R. Minisandram, T. McCoy, D. Nussman, J. Patten, J. Salsbury, V. Srinivasan

Mechanical engineering is possibly the broadest of the engineering disciplines. Mechanical engineers are involved in almost all aspects of the technological problems facing today’s society. Among the major concerns of the mechanical engineer are problems related to conversion, utilization, and conservation of our limited energy resources. Additional important areas for the mechanical engineer include the design and analysis of machines, structures, and manufacturing processes related to the industrial output of the nation. Increasingly, this design and analysis is computer based using the techniques of computer-aided design (CAD/CAM).

A sound understanding of the engineering sciences is fundamental to the education of engineers in every discipline. The engineering sciences are generally identified as those areas of engineering that emphasize the application of the fundamental principles of the physical sciences, primarily physics and chemistry, to engineering problems. Some classical and emerging engineering areas recognized to fall within this field include thermodynamics, fluid mechanics, engineering mechanics, engineering materials, nuclear and chemical sciences, microelectronics theory and fabrication, manufacturing, metrology, and the solid state sciences.

PROGRAM DEGREES
The Department of Mechanical Engineering and Engineering Science offers an undergraduate program leading to a Bachelor of Science in Mechanical Engineering (B.S.M.E.) degree and graduate programs leading to Master of Science in Mechanical Engineering (M.S.M.E.), Master of Science in Engineering (M.S.E.) and Doctor of Philosophy (Ph.D.) degrees. Additionally, a dual degree program is offered in cooperation with the Department of Physics. Using the flexibility provided by the technical electives, and with engineering career counseling, a student can develop a variety of educational programs that would provide the background for professional engineering licensing and practice in any of the areas included within mechanical engineering and/or the engineering sciences. The student can also prepare for graduate study in mechanical engineering, materials science, or any of the recognized areas covered by the engineering sciences. Individualized study programs in one of the interdisciplinary fields involving the merger of engineering and the various science areas, such as bioengineering, microelectronics, or chemical engineering sciences, can be developed.

PROGRAM EDUCATIONAL OBJECTIVES

- To equip students to use analytical, computational, and statistical methods of engineering measurements and applications.
- To develop the understanding of manufacturing methods so that graduates can contribute to the design, implementation and management of engineering systems.
- To prepare students to engage in the engineering design process by developing their skills at problem solving, planning, collaboration, and communication.
- To provide an education that allows graduates to understand the economic and ethical impact of their engineering decisions.
- To prepare students for successful participation as engineers in society, for graduate or professional studies, and for lifelong learning.

EARLY-ENTRY PROGRAM: MASTER OF SCIENCE IN MECHANICAL ENGINEERING

1) A student may be accepted into the early-entry Program at any time after completion of 90 semester hours of undergraduate work applicable to the B.S.M.E. degree. Admission must be approved by the Department Chair or Graduate Program Coordinator and admission is conditional pending the awarding of the undergraduate degree.

2) In order to be accepted to the Mechanical Engineering early entry program, an undergraduate student must have at least a 3.2 overall grade point average and a 3.2 grade point average in the major. The applicant must have taken the appropriate graduate standardized test (GRE) and received acceptable test scores.

3) Students accepted into the early-entry program will be subject to the same policies that pertain
to other matriculated graduate students. Early-Entry students must finish their undergraduate degree before they complete 15 hours of graduate work.

The program in Mechanical Engineering is accredited by:

Engineering Accreditation Commission
of the Accreditation Board for
Engineering and Technology (ABET)
111 Market Place, Suite 1050
Baltimore, MD 21202
Telephone: (410) 347-7000

BACHELOR OF SCIENCE IN
MECHANICAL ENGINEERING (B.S.M.E.)

A major in Mechanical Engineering leading to the B.S.M.E. degree consists of a total of 126 credit hours.

Suggested Curriculum: B.S.M.E. Degree

<table>
<thead>
<tr>
<th>First Year</th>
<th>Fall Semester</th>
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<td>Course</td>
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<tr>
<td>CHEM 1251</td>
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<tr>
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<tr>
<td>ENGL 1101</td>
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<td>ENGR 1201</td>
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<td>LBS 110x</td>
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<tr>
<td>MATH 1241</td>
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<tr>
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<tbody>
<tr>
<td>Course</td>
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<tr>
<td>ENGL 1102</td>
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<td>ENGR 1202</td>
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<td>MATH 1242</td>
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<td>PHYS 2101</td>
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<tr>
<th>Second Year</th>
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<tbody>
<tr>
<td>Course</td>
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<td>LBST 2101</td>
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<td>MATH 2241</td>
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<td>MEGR 2141</td>
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<td>PHYS 2102</td>
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<tbody>
<tr>
<td>Course</td>
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<tr>
<td>ECGR 2161</td>
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<td>MATH 2171</td>
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<td>MEGR 2144</td>
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<td>MEGR 2156</td>
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<td>MEGR 2180</td>
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<td>MEGR 2240</td>
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<tbody>
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<td>Course</td>
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<td>MEGR 3111</td>
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<td>MEGR 3171</td>
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<td>MEGR 3171L</td>
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<td>ME Tech Elective</td>
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<tbody>
<tr>
<td>Course</td>
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<tr>
<td>MEGR 3112</td>
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<tr>
<td>MEGR 3114</td>
</tr>
<tr>
<td>MEGR 3116</td>
</tr>
<tr>
<td>MEGR 3122</td>
</tr>
<tr>
<td>MEGR 3152</td>
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<tr>
<td>MEGR 3156</td>
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</tbody>
</table>
BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING (B.S.M.E.)
(Concentration in Energy Engineering)

The Energy Engineering concentration area is intended for students interested in specialized and systematic training and education in the area of power generation. Students completing the requirements described in this program will receive a special designation on their transcripts showing that they have completed the Energy Engineering concentration.

Students must apply for admission and may enter the program during their Sophomore or Junior years only. To be admitted to the program, students must have completed Physics I (PHYS 2101 and 2101L), Calculus I, II, and III (MATH 1241, 1242, and 2241), and Engineering Mechanics I (MEGR 2141), all with a grade of C or above and have a minimum GPA of 3.0. In order to remain in the concentration a minimum (overall and program) GPA of 3.0 must be maintained.

Note: All Mechanical Engineering students must meet the Statistics requirement described on later in this section.
### Third Year

#### Fall Semester

<table>
<thead>
<tr>
<th>Course</th>
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<tr>
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<tr>
<td>MEGR 3121 Dynamic Systems I</td>
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<tr>
<td>MEGR 3161 Engineering Materials</td>
<td>3</td>
</tr>
<tr>
<td>MEGR 3171 Measurements and</td>
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<tr>
<td>Instrumentation</td>
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<td>MEGR 3171L Instrumentation Lab</td>
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#### Spring Semester

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<td>MEGR 3122 Dynamic Systems II</td>
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<td>MEGR 3152 Mechanics and Materials Lab</td>
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<td>MEGR 3156 Design Project Lab II</td>
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### Fourth Year

#### Fall Semester

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<td>ENGR 3295 Professional Development</td>
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<td>LBST 2102 Global and Intercultural Connections</td>
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<tr>
<td>MEGR 3221 Machine Analysis and Design</td>
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<tr>
<td>MEGR 3251 Thermal/Fluids Lab</td>
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<tr>
<td>MEGR 3455 Energy Engineering Clinic II*</td>
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<td>Energy Engineering Electives (2)</td>
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#### Spring Semester

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>LBST 221x Ethical Issues</td>
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<tr>
<td>MEGR 3216 Thermal/Fluids Design</td>
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<tr>
<td>MEGR 3456 Energy Engineering Clinic III*</td>
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<td>Energy Technical Electives (2)</td>
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</tbody>
</table>

Total Credit Hours = 127

*Must be an approved Energy-related project

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### BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING (B.S.M.E.) (Concentration in Motorsports Engineering)

The Motorsports Engineering concentration area is intended for students interested in specialized and systematic training and education in the area of automotive engineering as it pertains to motorsports. Students completing the requirements described in this program will receive a special designation on their transcripts showing that they have completed the Motorsports Engineering concentration.

Students must apply for admission and may enter the program during the sophomore or junior years only. To be admitted to the program students must have completed Physics I (PHYS 2101 & 2101L), Calculus I, II, and III (MATH 1241, 1242, and 2241), and Engineering Mechanics I (MEGR 2141), all with a grade of C or above and have a minimum GPA of 2.5.

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### Suggested Curriculum: B.S.M.E. Degree with a Concentration in Motorsports Engineering

#### First Year

##### Fall Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CHEM 1251 Chemistry I</td>
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<tr>
<td>CHEM 1251L Chemistry I Lab</td>
<td>1</td>
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<tr>
<td>ENGLISH 1101 English I</td>
<td>3</td>
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<tr>
<td>ENGR 1201 Introduction to</td>
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<tr>
<td>Engineering I</td>
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</tr>
<tr>
<td>LBST 110x Arts and Society</td>
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<tr>
<td>MATH 1241 Calculus I</td>
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##### Spring Semester

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<tbody>
<tr>
<td>ENGLISH 1102 English II</td>
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<td>ENGR 1202 Introduction to</td>
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<td>MATH 1242 Calculus II</td>
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<tr>
<td>PHYSICS 2101 Physics I</td>
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### Second Year
#### Fall Semester
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<tr>
<td>MEGR 2141 Engineering Mechanics I</td>
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<tr>
<td>MATH 2241 Calculus III</td>
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<td>ECON 2101 Principles of Economics – Macro</td>
<td>3</td>
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<tr>
<td>LBST 2101 Western Cultural and Historic Awareness</td>
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#### Spring Semester
<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ECGR 2161 Basic Electrical Engineering</td>
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</tr>
<tr>
<td>MATH 2171 Differential Equations</td>
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<tr>
<td>MEGR 2144 Solid Mechanics</td>
<td>3</td>
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<tr>
<td>MEGR 2156 Design Project Lab I (Automotive Eng Area)</td>
<td>2</td>
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<tr>
<td>MEGR 2180 Manufacturing Systems</td>
<td>3</td>
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<tr>
<td>MEGR 2240 Computational Methods</td>
<td>3</td>
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<tr>
<td>MEGR 2299 Motorsports Engineering Clinic I</td>
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### Third Year
#### Fall Semester
<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MEGR 3111 Thermodynamics I</td>
<td>3</td>
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<td>MEGR 3121 Dynamic Systems I</td>
<td>3</td>
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<tr>
<td>MEGR 3161 Engineering Materials</td>
<td>3</td>
</tr>
<tr>
<td>MEGR 3171 Measurements and Instrumentation</td>
<td>2</td>
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<tr>
<td>MEGR 3171L Instrumentation Lab</td>
<td>2</td>
</tr>
<tr>
<td>Motorsports Technical Elective</td>
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#### Spring Semester
<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>MEGR 3112 Thermodynamics II</td>
<td>3</td>
</tr>
<tr>
<td>MEGR 3114 Fluid Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>MEGR 3116 Heat Transfer</td>
<td>3</td>
</tr>
<tr>
<td>MEGR 3122 Dynamic Systems II</td>
<td>3</td>
</tr>
<tr>
<td>MEGR 3152 Mechanics and Materials Lab</td>
<td>2</td>
</tr>
<tr>
<td>MEGR 3156 Design Project Lab II (Automotive Eng Area)</td>
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</table>

### Fourth Year
#### Fall Semester
<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>ENGR 3295 Professional Development</td>
<td>1</td>
</tr>
<tr>
<td>LBST 2102 Global and Intercultural Connections</td>
<td>3</td>
</tr>
<tr>
<td>MEGR 3221 Machine Analysis and Design</td>
<td>3</td>
</tr>
<tr>
<td>MEGR 3251 Thermal/Fluids Lab</td>
<td>2</td>
</tr>
<tr>
<td>MEGR 3355 Motorsports Engineering Clinic II</td>
<td>2</td>
</tr>
<tr>
<td>Motorsports Technical Electives (2)</td>
<td>6</td>
</tr>
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#### Spring Semester
<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>LBST 221x Ethical Issues</td>
<td>3</td>
</tr>
<tr>
<td>MEGR 3216 Thermal/Fluids Design</td>
<td>3</td>
</tr>
<tr>
<td>MEGR 3356 Motorsports Engineering Clinic III</td>
<td>2</td>
</tr>
<tr>
<td>Math Elective</td>
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</tr>
<tr>
<td>Motorsports Technical Elective</td>
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</tr>
</tbody>
</table>

**Total Credit Hours = 127**

### MECHANICAL ENGINEERING STATISTICS REQUIREMENTS

University General Education requirements are met with the 12 credit hours of Liberal Studies electives to meet the objectives of a broad education consistent with the educational goals of the profession. The science elective must be chosen from the physical, life, or earth sciences to complement the student’s overall educational plan and to satisfy the college degree requirement. A math elective is required to broaden the student’s mathematical skills.

All MEGR students must complete a statistics requirement by taking either STAT 3128 (Probability and Statistics for Engineers) or MEGR 3282 (Statistics Process Control and ). Note: STAT 3128 counts as a mathematics elective and also fulfills the statistics requirement; MEGR 3282 counts as a technical elective.

Students who fulfill the statistics requirement with MEGR 3282 may select their math elective from MATH 2164 or a 3000 level mathematics course approved by the Department.

The technical electives are chosen in consultation with an academic advisor. The student can use these electives to (1) obtain some breadth within the engineering sciences by choosing additional advanced courses from the various engineering sciences; (2) obtain significant depth within a
particular area of mechanical engineering, or engineering science, through the use of available engineering science, mechanical engineering, science, mathematics and other engineering courses; and (3) prepare for graduate work in mechanical engineering, engineering science or some other engineering areas.

All mechanical engineering majors must satisfactorily complete ENGR 1201 during their first semester in attendance in mechanical engineering at UNC Charlotte. Mechanical engineering students must maintain a GPA of 2.0 in their major.

The Motorsports concentration area has three additional requirements:

1.) Individual and team design projects beginning in the sophomore year (Project Lab I & II) must be completed in the automotive engineering area.

2.) Students must complete Motorsports Clinic II, and III (MEGR 3355, 3356) in place of Senior Design I & II (MEGR 3255 & 3256).

3.) Students must select four required technical electives from the prescribed list of motorsports engineering courses: MEGR 3210, MEGR 3211, MEGR 4112, MEGR 4143, or MEGR 4144. Other suitable technical electives such as MEGR 3890 may be approved by the Motorsports Engineering Faculty Advisor or Department Chair.

B.S.M.E./B.S. IN PHYSICS

The Department of Mechanical Engineering offers a dual degree opportunity with the Department of Physics and Optical Science. The dual degree is designed to broaden and enhance the education of students in the engineering degree program. Students can obtain a B.S. Physics and B.S. Mechanical Engineering dual degree.

To obtain a dual B.S. degree in Mechanical Engineering and Physics, an undergraduate student must complete all requirements for the B.S.M.E. degree as established by the Department of Mechanical Engineering. In addition, the student must complete 12 hours of upper division physics courses specified by the Department of Physics and Optical Science. To meet the upper division physics requirement, students must complete the following courses: PHYS 3141 (Introduction to Modern Physics), PHYS 4231 (Electromagnetic Theory I), and 3 elective hours chosen from a list of approved courses available from the Department of Physics and Optical Science. A B.S. in Physics under this program will be awarded at the same time as the B.S.M.E. The B.S. Physics degree will not be awarded in advance of the engineering degree.

B.S. IN PHYSICS REQUIREMENTS

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 1000</td>
<td>New Student Seminar</td>
</tr>
<tr>
<td>PHYS 2101, 2101L, 2102, and 2102L</td>
<td>Introduction to Physics</td>
</tr>
<tr>
<td>PHYS 3101</td>
<td>Topics and Methods of General Physics</td>
</tr>
<tr>
<td>PHYS 3121</td>
<td>Classical Mechanics</td>
</tr>
<tr>
<td>PHYS 3141</td>
<td>Introduction to Modern Physics</td>
</tr>
<tr>
<td>PHYS 3151</td>
<td>Thermal Physics</td>
</tr>
<tr>
<td>PHYS 3282 and PHYS 3283</td>
<td>Advanced Labs</td>
</tr>
<tr>
<td>PHYS 4231 and PHYS 4232</td>
<td>Electromagnetic Theory</td>
</tr>
<tr>
<td>PHYS 4241</td>
<td>Quantum Mechanics</td>
</tr>
</tbody>
</table>

9 elective hours of PHYS at 3000-4000 level

CHEM 1251 and 1251L

ITCS 1214

MATH 1241, MATH 1242, MATH 2171, MATH 2241, MATH 2242

B.S. IN PHYSICS / B.S.M.E. REQUIREMENTS

The following common courses are taken as part of both the B.S.M.E. and B.S. Physics:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 2101 and 2101L</td>
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</tr>
<tr>
<td>PHYS 2102 and 2102L</td>
<td></td>
</tr>
<tr>
<td>CHEM 1251 and 1251L</td>
<td></td>
</tr>
<tr>
<td>MATH 1241, 1242, 2171, 2241</td>
<td></td>
</tr>
</tbody>
</table>

Note: Students in this program will be encouraged to take MATH 2242 as their Math elective in the ME curriculum.

SUBSTITUTIONS

Students in this dual degree program will be allowed to substitute certain engineering courses for the physics requirements.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGR 1201</td>
<td>(Intro. To Engineering Practice and Principles) for PHYS 1000</td>
</tr>
<tr>
<td>MEGR 2240</td>
<td>(Computational Methods) for PHYS 3101</td>
</tr>
<tr>
<td>MEGR 3111</td>
<td>(Thermodynamics I) for PHYS 3151</td>
</tr>
<tr>
<td>MEGR 3121</td>
<td>(Dynamic Systems I) for PHYS 3121</td>
</tr>
<tr>
<td>MEGR 3122</td>
<td>(Dynamic Systems II) for PHYS 3122</td>
</tr>
<tr>
<td>ECGR 2161</td>
<td>(Basic Electronic Engineering) for 3 hrs PHYS elective credit</td>
</tr>
<tr>
<td>MEGR 3255/3256</td>
<td>(Senior Design I and II) for PHYS 3282/3283</td>
</tr>
<tr>
<td>MEGR 3171</td>
<td>(Measurements and Instrumentation) for ITCS 1214</td>
</tr>
</tbody>
</table>

ADDITIONAL REQUIRED COURSES FOR THE DUAL DEGREE

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 3141</td>
<td>(Introduction to Modern Physics)</td>
</tr>
<tr>
<td>PHYS 4231</td>
<td>(Electromagnetic Theory I)</td>
</tr>
<tr>
<td>PHYS 4241</td>
<td>(Quantum Mechanics I)</td>
</tr>
</tbody>
</table>

3 elective hours at 3000-4000 level
Systems Engineering and Engineering Management Program

Director: G. Teng
Professor: G. Teng
Associate Professors: E. Ozelkan, Y. Sireli
Assistant Professor: C. Lim

The main objective of the undergraduate program in Systems Engineering is to equip graduates with the essential Systems Engineering skills that are needed in industry to enable them to perform in a global engineering environment. These skills include:

- Decision and Risk Analysis
- Systems Modeling and Optimization
- Systems Design, Planning, and Analysis
- Supply Chain and Logistics Engineering
- Quality Engineering
- Engineering Management
- Communication and Presentation
- Understanding of Global Business Dynamics

These objectives are accomplished through a flexible curriculum and through interactions with other departments and colleges of the University and with the professional community.

"Systems Engineering is an engineering discipline whose responsibility is creating and executing an interdisciplinary process to ensure that the customers' and stakeholders' needs are satisfied in a high quality, trustworthy, cost-efficient and schedule-compliant manner throughout a system's entire life cycle." (INCOSE, 2007) Systems Engineering as an engineering field has very broad applications in a wide variety of industries including energy, telecommunications, construction, manufacturing, transportation and distribution, information technology, financial services, automotive, retail, healthcare and airlines, at all levels from an entry position to top management. This wide applicability, along with a very strong focus to model, analyze and manage complex engineered systems with proven tools and techniques are the primary strengths of SE. Practically every organization requires Systems Engineers to identify, characterize, and solve the right problems and to eliminate inefficiencies and root-causes that generate these problems.

The program offers a Bachelor of Science in Systems Engineering (BSSE) degree and a Master of Science in Engineering Management (MSEM) degree. For information about the master's program, see the UNC Charlotte Graduate Catalog.

Concentration tracks, technical and liberal studies electives allow flexibility for study in specific areas. Each student may design a technical elective program with his or her advisor's approval in order to achieve individual goals and follow a desired track.

Qualified students may apply for early-entry into the graduate program in Engineering Management during their junior or senior year. If accepted, students may take optional courses for graduate credit and begin work on their master's degree while completing their undergraduate degree.

EARLY-ENTRY INTO MASTER'S PROGRAM IN ENGINEERING MANAGEMENT

1) A student may be accepted into the early-entry program at any time after completion of at least 75 semester hours of undergraduate work applicable to an appropriate degree. Admission must be approved by the Systems Engineering and Engineering Management program. Full admission to the graduate program is conditional pending the awarding of the undergraduate degree.

2) In order to be accepted into the program a student must have at least a 3.2 overall grade point average and a 3.2 grade point average in the student's major. The successful applicant must have taken the appropriate standardized test and earned acceptable scores.

3) While in the early-entry program, a student must maintain a 3.0 overall grade point average through completion of the baccalaureate degree in order to remain in the graduate program.

4) Students accepted into the early-entry program will be subject to the same policies that pertain to other matriculated graduate students. Early-entry students must finish their undergraduate degree before they complete 15 hours of graduate work.

BACHELOR OF SCIENCE IN SYSTEMS ENGINEERING (B.S.S.E.)

A major in Systems Engineering leading to the BSSE degree consists of 123 credit hours. Specific requirements are:

<table>
<thead>
<tr>
<th>Category</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>English</td>
<td>9</td>
</tr>
<tr>
<td>General Engineering</td>
<td>5</td>
</tr>
<tr>
<td>Humanities &amp; Social Science Electives</td>
<td>15</td>
</tr>
<tr>
<td>Mathematics</td>
<td>15</td>
</tr>
<tr>
<td>Open Technical Electives</td>
<td>9</td>
</tr>
<tr>
<td>Operations Research</td>
<td>6</td>
</tr>
<tr>
<td>Physics</td>
<td>8</td>
</tr>
</tbody>
</table>
Social science and humanities electives must be chosen both to satisfy University General Education requirements and to meet the objectives of a broad education consistent with the educational goals of the profession. To avoid taking "extra" humanities/social science electives, students must select their electives carefully after consulting with their faculty advisor.

The science electives must be chosen from an approved list of physical, life, or earth sciences and must complement the student’s overall educational plan.

Each BSSE student needs to select one of the following concentration areas by the end of their freshman year:

1) Systems Engineering
2) Engineering Management

The courses that are marked as "track courses" in the study plan are determined on the basis of the concentration area as described.

SYSTEMS ENGINEERING TRACK
Students enrolled in the Systems Engineering track can take any three of the SE technical elective courses to fulfill their BSSE degree requirements.

ENGINEERING MANAGEMENT TRACK
The following track courses should be taken by each student specializing in Engineering Management:

1) SEGR 2111 Intro to Engineering Management
2) SEGR 3112 Value Engineering Management
3) OPER 3204 Mgmt of Service Operations

Suggested Curriculum: B.S.S.E. Degree

<table>
<thead>
<tr>
<th>First Year</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Fall Semester</td>
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<tr>
<td>Course</td>
<td>Credits</td>
</tr>
<tr>
<td>ENGR 1201</td>
<td>2</td>
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<tr>
<td>CHEM 1251</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 1251L</td>
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<td>MATH 1241</td>
<td>3</td>
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<td>ENGL 1101</td>
<td>3</td>
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<tr>
<td>Liberal Studies Elective*</td>
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<tr>
<td>Spring Semester</td>
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<tr>
<td>Course</td>
<td>Credits</td>
</tr>
<tr>
<td>ENGR 1202</td>
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<td>PHYS 2101</td>
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<tr>
<td>PHYS 2101L</td>
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<td>MATH 1242</td>
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<td>ENGL 1102</td>
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<td>ECON 1101</td>
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<table>
<thead>
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<th>Credits</th>
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<td>Fall Semester</td>
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<tr>
<td>Course</td>
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<tr>
<td>PHYS 2102</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 2102L</td>
<td>1</td>
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<tr>
<td>SEGR 2101</td>
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</tr>
<tr>
<td>MATH 2241</td>
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</tr>
<tr>
<td>ENGL 2116 (W)</td>
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<tr>
<td>SEGR 2106</td>
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<table>
<thead>
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<tbody>
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<td>Course</td>
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<td>SEGR 2105</td>
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</tr>
<tr>
<td>STAT 3128</td>
<td>3</td>
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<tr>
<td>MATH 2164</td>
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<tr>
<td>Liberal Studies Elective*</td>
<td>3</td>
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<tr>
<td>Track Course*</td>
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<table>
<thead>
<tr>
<th>Third Year</th>
<th>Credits</th>
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<tbody>
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<td>Fall Semester</td>
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<td>Course</td>
<td>Credits</td>
</tr>
<tr>
<td>SEGR 3101</td>
<td>3</td>
</tr>
<tr>
<td>SEGR 3105</td>
<td>3</td>
</tr>
<tr>
<td>OPER 3100</td>
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<td>OPRS 3111</td>
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<td>Technical Elective*</td>
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<td>Spring Semester</td>
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<tr>
<td>Course</td>
<td>Credits</td>
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<td>SEGR 3102</td>
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<td>ENGR 3670</td>
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<td>OPRS 3113</td>
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<td>Technical Elective*</td>
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<table>
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<tr>
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<th>Credits</th>
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<tbody>
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<td>Fall Semester</td>
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<td>Course</td>
<td>Credits</td>
</tr>
<tr>
<td>SEGR 3290 (O, W)</td>
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<tr>
<td>ENGR 3295</td>
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<tr>
<td>Liberal Studies Elective*</td>
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<tr>
<td>SEGR 3107</td>
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<tr>
<td>SEGR 3111 (O,W)</td>
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<tr>
<td>SEGR 3114</td>
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<tr>
<td>Course</td>
<td>Credits</td>
</tr>
<tr>
<td>SEGR 3291 (O, W)</td>
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<tr>
<td>ENGR 4101</td>
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<td>SEGR 4141</td>
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<tr>
<td>Liberal Studies Elective*</td>
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<tr>
<td>Technical Elective*</td>
<td>3</td>
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</tbody>
</table>

Total Credit Hours = 123

*Contact the Program office for more information about the optional courses and their use for an undergraduate concentration or for the early-entry Master’s program.
MISSION
The College of Health and Human Services (CHHS) offers professionally recognized and accessible undergraduate and graduate degree programs that are nationally and globally relevant, and responsive to changing health care and human service needs in the state and region. The College achieves excellence through informed and effective teaching in its degree programs, community partnerships, and professional activities and research to advance science and practice in the health and human services professions.

DEGREE PROGRAMS
The College offers degree programs at the doctoral, masters, and baccalaureate levels including: the Doctor of Philosophy in Health Services Research (Ph.D.), the Master of Science in Clinical Exercise Physiology (M.S.), the Master of Health Administration (M.H.A.), Master of Science in Nursing (M.S.N.), the Master of Science in Public Health (M.S.P.H.), and the Master of Social Work (M.S.W.); the Bachelor of Science in Athletic Training (B.S.), the Bachelor of Science in Exercise Science (B.S.), the Bachelor of Science in Nursing (B.S.N.), the Bachelor of Science in Public Health (B.S.P.H.), the Bachelor of Science in Respiratory Therapy (B.S.R.T.), and the Bachelor of Social Work (B.S.W.). The College also offers one undergraduate minor in Public Health. All nursing degree programs offered by the School of Nursing are accredited by the Commission on Collegiate Nursing Education (CCNE). The nurse anesthesia concentration in the M.S.N. program is accredited by the Council on Accreditation of Nurse Anesthesia Educational Programs (COA). The B.S.N. program is approved by the North Carolina Board of Nursing. The B.S.W. and M.S.W. programs are accredited by the Council on Social Work Education (CSWE). The Athletic Training Education Program is accredited by the Commission on the Accreditation of Athletic Training Education (CAATE). The Exercise Science (B.S.) and Clinical Exercise Physiology (M.S.) Education Programs are accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP). The M.H.A. program is accredited by the Commission on Accreditation of Healthcare Management Education (CAHME). Both baccalaureate and master's degree programs in public health (B.S.P.H. and M.S.P.H.) are accredited by the Council on Education for Public Health (CEPH).
TECHNICAL STANDARDS
Technical standards define the attributes that are considered necessary for nursing and students enrolled in the BS degree program in Athletic Training to possess in order to complete their education and training, and subsequently enter clinical practice. These technical standards are prerequisites for entrance to, continuation in, and graduation from a student’s chosen program in the College of Health and Human Services at the University of North Carolina at Charlotte.

Students must possess aptitude, ability, and skills in four areas: Psychomotor (coordination/mobility); Senses (visual, auditory, tactile, olfactory); Communication (verbal, nonverbal, written); and Behavioral/Social Attributes.

The technical standards described by the student’s chosen program are critically important to the student and must be performed by the student. Documentation of any disability is accomplished through the University Office of Disability Services.

FOREIGN LANGUAGE REQUIREMENT
Nursing and social work students seeking either a BSN or BSW degree are required to demonstrate proficiency in the language of their choice. Nursing students enrolled in the BSN or RN-BSN program must demonstrate foreign language proficiency through the 1202 level. Students enrolled in the BSW program must demonstrate proficiency in the language of their choice through the intermediate 2000 level. There is no foreign language requirement for students enrolled as Athletic Training, Exercise Science, and Public Health majors, although it is highly recommended for students to become proficient in a second language.

School of Nursing

Associate Dean and Director: D. Baldwin
Associate Director of the Undergraduate Division: L. Edwards
Associate Director of the Graduate Division: G. Foss
Assistant Professors: M. Coffman, J. Cornelius, D. Kazemi, K. Montgomery

The School of Nursing consists of two divisions: (1) the Undergraduate Division and (2) the Graduate Division. The School offers the B.S.N. degree, both entry level and RN-to-BSN completion curricula, the RN-M.S.N. curriculum, and the M.S.N. degree with various specialty concentrations. Options of traditional classroom education or individual access (online) education are available in the School of Nursing for the RN-to-B.S.N. completion curriculum and some of the M.S.N. specialty concentrations.

BACHELOR OF SCIENCE IN NURSING
The Bachelor of Science in Nursing degree (B.S.N.) requires a minimum of 120 semester hours. A student must earn the last 25% of baccalaureate degree requirements at UNC Charlotte.

ADMISSION REQUIREMENTS
Admission decisions to the Upper-Division Nursing Major are made by the School for the Fall and Spring semesters of each academic year. Not all applicants who meet the minimum requirements can be accommodated. Applicants are competitively reviewed for admission based on their grade point average in the required prerequisite courses. Consistent with University policy, the School offers admission to applicants whose credentials present the best qualifications among those meeting minimum requirements.
Minimum criteria for application to the Nursing major are:

1) A grade point average of 3.0 or above in the required prerequisite courses.
2) A grade of A or B in the following prerequisite courses:
   a) CHEM 1203 (or 1251) and lab
   b) CHEM 1204 (or 1252) and lab
   c) BIOL 1259 and lab
   d) BIOL 1273 and lab
   e) BIOL 1274 and lab
   f) NURS 2100
   g) NURS 2200
3) Completion of at least three (3) of the prerequisite sciences and their labs prior to applying.
4) For the prerequisite science courses and respective labs and for NURS 2100 and 2200, all of which require a grade of B or above, applicants can only have one grade of C or below for which they retook the course to earn a B or above. Students having more than one C in those prerequisite courses are ineligible for admission.
5) Completion of other required prerequisite courses by the end of the Spring semester prior to the Fall for which application is made and by the end of the Fall semester prior to the Spring for which application is made.
6) Students admitted to the pre-licensure nursing program must be certified as a Nurse Aide I (CNA I) and listed in the North Carolina Nurse Aide Registry.

Application to the nursing program is done online via NursingCAS. Information about the online application process is available on both the School of Nursing and CHHS Advising Center websites. The deadline for application is January 31 of the academic year preceding the Fall for which admission is sought, and August 31 of the academic year preceding the Spring for which admission is sought. Admission decisions are communicated in writing by the School. Applicants who are not admitted may reapply for a future term.

All students admitted to the pre-licensure B.S.N. curriculum must have prerequisite computer knowledge in using e-mail, word processing (create/save/open/retrieve), file management, editing, formatting, and using an internet browser (search and navigate).

**PREREQUISITES**

Students are required to complete ENGL 1101; ENGL 1102; CHEM 1203 and 1204 with labs (or CHEM 1251 and 1252 with labs); BIOL 1273, BIOL 1273L, BIOL 1274, BIOL 1274L, and BIOL 1259, BIOL 1259L; MATH 1100; STAT 1222 (or STAT 1220 or 1221); PSYC 1101; SOCY 1101 or ANTH 1101; NURS 2100 and NURS 2200 prior to admission to the nursing program. The School of Nursing strongly recommends LBST 2211 as a part of the student’s General Education requirements.

**PRE-NURSING**

Freshmen seeking admission to the nursing major may be admitted as Pre-Nursing. Transfer and change of major students who have not completed all prerequisites may be listed as pre-nursing. In order to declare Pre-nursing, freshmen and transfer students admitted to the University must have a GPA of 3.0 based on all university/college course work. In order to progress in Pre-nursing, students must meet the following:

1) Overall GPA of 3.0 or above at the completion of the courses in the first two semesters
2) Grade of B or above in all prerequisite science courses:
   a) CHEM 1203 and Lab
   b) CHEM 1204 and lab
   c) BIOL 1259 and lab
   d) BIOL 1273 and lab
   e) BIOL 1274 and lab
3) Grade of B or above in the following pre-nursing courses:
   a) NURS 2100 General Nutrition
   b) NURS 2200 Human Growth and Development
4) Overall GPA of 3.0 or above at the completion of courses in each of the 3rd and 4th semesters
5) For the prerequisite science courses and respective labs and for NURS 2100 and 2200, all of which require a grade of B or above, Pre-Nursing students can only have one grade of C or below for which they retook the course to earn a B or above. Students earning more than one C in those prerequisite courses cannot remain in Pre-Nursing and must change their major, and are ineligible for admission to the upper division nursing major.
6) Completion of all nursing prerequisite courses with a prerequisite GPA of 3.0 or above

Note: Admission as Pre-Nursing does not automatically admit an applicant to the Nursing Major.

**RN-TO-BSN CURRICULUM**

**ADMISSION REQUIREMENTS**

Registered Nurses seeking a Bachelor of Science in Nursing degree may apply for admission to the RN-
to-BSN curriculum. Criteria for admission to the program are a current unencumbered license as a Registered Nurse, a cumulative grade point average of 2.0 or better in all college coursework and at least a C in all required nursing prerequisites by the end of the semester prior to the semester for which application is made.

Admission decisions are made by the School of Nursing. Applicants are competitively reviewed for admission based on their prerequisite GPA in all college transferable coursework. Students are admitted in cohorts two times each academic year. Completed applications are accepted from November 15 to March 30 for the fall cohort and from May 15 to September 30 for the spring cohort.

Applications are available from the College of Health and Human Services Advising Center and online at nursing.uncc.edu; Click on Degree Programs/Undergraduate Programs/RN-BSN Completion Program, and scroll down to the link. Admission decisions are communicated in writing by the School. Applicants who are denied may reapply.

All students admitted to the RN-to-BSN completion curriculum need to have prerequisite computer knowledge in using e-mail, word processing (create/save/open/retrieve), file management, editing, formatting, and using an internet browser (search and navigate). The RN-to-BSN nursing curriculum is offered through two formats. Students may enroll in the totally web-based format (through Distance Education) or in the traditional, face-to-face format. Each format is nine courses and 30 credit hours in length.

RN-TO-BSN CURRICULUM PREREQUISITES
All General Education, foreign language, and nursing prerequisite courses must be completed by the end of the semester preceding the semester for which the application is made.

PRE-RN-TO-BSN
Registered nurses seeking admission to the RN-to-BSN curriculum who need to complete nursing prerequisites and/or General Education courses may apply for admission as a Pre-RN-to-BSN student. Applicants must have a cumulative GPA of at least 2.0 on all college work attempted. Admission as a Pre-RN-to-BSN student does not automatically admit an applicant to the RN-to-BSN Program.

PREREQUISITES FOR PARTICIPATION IN CLINICAL EXPERIENCES

Immunization and Health Status
All RN-to-BSN students must meet the University’s immunization and health status requirements.

Professional Liability Insurance
All students must show proof of professional liability insurance.

Universal Precautions
All students must successfully complete a College computer-based exam on universal precautions each year of the professional program.

Drug Testing and Criminal Background Checks
To comply with clinical agency requirements, students in the nursing program may be required to undergo drug testing and have a criminal background check before being allowed to participate in clinical experiences. Students are responsible for the cost of drug testing and criminal background checks.

REQUIREMENTS FOR PROGRESSION IN THE NURSING PROGRAM

1) The Progression Policy for upper-division nursing students is included in the School of Nursing handbooks, which are available online at nursing.uncc.edu under “Student Resources.”

2) No course in the Nursing major can be taken as transient study. Transfer credit for nursing courses will be considered on an individual basis.

Suggested Curriculum: B.S.N. Degree

<table>
<thead>
<tr>
<th>First Year</th>
<th>Fall Semester</th>
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<tbody>
<tr>
<td>Course</td>
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<tr>
<td>Course</td>
<td>MATH 1100</td>
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<tr>
<td>Course</td>
<td>SOCY 1101 or ANTH 1101</td>
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<tr>
<td>Course</td>
<td>CHEM 1203/1203L or 1251/1251L</td>
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</tr>
<tr>
<td>Course</td>
<td>LBST 1100 series: Arts, Literature, and Culture</td>
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<table>
<thead>
<tr>
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<tr>
<td>Course</td>
<td>ENGL 1102</td>
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<tr>
<td>Course</td>
<td>STAT 1222 (or 1220 or 1221)</td>
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<tr>
<td>Course</td>
<td>CHEM 1204/1204L or 1252/1252L</td>
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<tr>
<td>Course</td>
<td>PSYC 1101</td>
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<tr>
<td>Course</td>
<td>LBST 2101</td>
<td>3</td>
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</table>
CURRICULUM OUTLINE: RN-TO-BSN COMPLETION

General Education Requirements and Prerequisites for the Nursing Major:

- BIOL 1259* (4)
- BIOL 1273* (4)
- BIOL 1274* (4)
- CHEM 1203 or 1251* (4)
- ENGL 1101* (3)
- ENGL 1102 (3)
- Foreign Language** (8)
- LBST 1100 series (3)
- LBST 2101 (3)
- LBST 2102 (3)
- LBST 2200 series (3)
- MATH 1100* (3)
- PSYC 1101* (3)
- SOCY 1101* or ANTH 1101 (3)
- STAT 1220, 1221, or 1222* (3)

*Prerequisite to Nursing
**Students must be proficient through the 1202 level through coursework or proficiency testing
***Students are awarded 39 credit hours upon successful completion of NURN 3103

RN-TO-BSN: UPPER-DIVISION NURSING MAJOR

NURN 3103 Concepts of Professional Nursing Science (3)
NURN 3108 Health Assessment for Nurses (3)
NURN 4100 Aging and Health (3) (O)
NURN 4201 Information Technology: Application in Health Care (2)
NURN 4203 Leadership in Nursing Practice (2)
NURN 4440 Community Health Nursing (6)
NURN 4450 Design and Coordination of Care for Nurses (6) (W)
NURN 4900 Research in Nursing Practice (2)
Nursing Elective Approved by the School of Nursing (3)

EARLY-ENTRY OPTION:
MASTER OF SCIENCE IN NURSING

The RN-MSN program is designed for the outstanding student who wants to pursue an accelerated path to the MSN. Applicants must meet all admission requirements for the RN-to-BSN and graduate program and make application directly to the Graduate School with the appropriate fee simultaneously with the application to RN-to-BSN. The following application criteria apply to Early Entry MSN applicants:
1) Applicants must meet all criteria for admission to the RN-to-BSN Program (all prerequisites taken).
2) Satisfactory performance on the Graduate Record Examination or the Miller Analogies Test or a previous Graduate degree is required.
3) One year of professional nursing practice is recommended.
4) An essay (statement of purpose) describing the applicant’s experience and objective in undertaking graduate study in the chosen specialty.
5) The program of study will substitute ten (10) credits from the MSN for the BSN program. NURS 6160 (Nursing Research) will be substituted for NURN 4900 (Research in Nursing Practice); NURS 6115 (Health Policy) will be substituted for NURN 4201 (Information Technology: Applications in Health Care); NURS 6101 (Theoretical Basis for Nursing Practice) will be substituted for the Nursing Elective. These credits will apply to both programs.
6) Admission is provisional upon evidence of successful completion of the BSN with a GPA of 3.0 in the RN-to-BSN program.
7) Students graduate with a BSN and then a MSN.
8) The Nurse Anesthesia Specialty does not admit Early Entry students.

Tuition rates for courses are based on the academic status of students, not on the undergraduate or graduate level of the course. As soon as students enroll in a graduate course, their academic status changes from undergraduate to graduate. This changes the tuition charges from undergraduate to graduate for all courses taken in the remainder of the RN-to-BSN program as well as the courses in the MSN program.

Department of Kinesiology
kinesiology.uncc.edu

Interim Chair: Y. Huet
Professors Emeriti: H. Murphy, J. Tillotson
Associate Professor Emeriti: J. Healey
Associate Professors: T. Hubbard, M. Turner
Assistant Professors: R. Howden, S. Tsivitse, E. Wikstrom

Senior Lecturers: R. Fielding, S. Kohn

Kinesiology is the discipline that engages in the comprehensive study of human movement, where this knowledge is applied to a wide range of human performance areas and allied healthcare. Opportunities include a Bachelor of Science degree in Exercise Science, Bachelor of Science degree in Athletic Training, Bachelor of Science degree in Respiratory Therapy, Master of Science in Clinical Exercise Physiology, and multiple courses emphasizing Lifetime Physical Activity and Physical Fitness.

MAJOR PROGRAMS
The Exercise Science major offers preparation for employment as Exercise Science practitioners in business and industry, healthcare agencies, hospitals, physical fitness centers, sport medicine clinics, sports performance centers, and colleges/universities or any other setting which utilizes exercise and physical activity to promote healthy active lifestyles and outcomes. The Athletic Training major prepares students for national certification and licensure as a certified athletic trainer with career opportunities in high schools, colleges/universities, orthopedic and sports medicine clinics, business and industry, professional sports teams, government health agencies, branches of the US military, and research laboratories. The Respiratory Therapy major prepares students who are already national board-certified respiratory therapists in a program of study directed toward acquiring advanced knowledge and clinical skills in respiratory therapy / respiratory care. The Pre-Kinesiology major is the classification that indicates that students are in a preparatory program for either the Athletic Training major or the Exercise Science major. Personal health enhancement opportunities are available through Lifetime Physical Activity and Physical Fitness courses.
PRE-KINESIOLOGY

Applicants who satisfy freshman or transfer requirements for admission to the University and who apply to either the Athletic Training OR Exercise Science majors are eligible for admission to the Pre-Kinesiology major. All students entering the university will be required to complete the General Education requirements of the university. A suggested sequence of courses for Pre-Kinesiology students that meet these General Education requirements as well as the prerequisites for both Exercise Science and Athletic Training can be found at kinesiology.uncc.edu.

Students who apply for either the Athletic Training OR Exercise Science major are initially classified as Pre-Kinesiology majors (PKNS) until they meet the following requirements: cumulative GPA of 2.0 or higher; completion of 60 hours; and successful (grade C or above) completion of BIOL 1273L, BIOL 1274, BIOL 1274L, CHEM 1251, CHEM 1251L, CHEM 1252, CHEM 1252L, STAT 1222, MATH 1101, HLTH 2101*, EXER/ATRN 2150, EXER/ATRN 2294, ATRN 2295** and EXER/ATRN 2298.

Students wishing to pursue the Exercise Science major should choose the prefix EXER and Athletic Training majors the ATRN prefix for courses in the major. Students applying for the Athletic Training major must make a grade C or higher in the above courses and have a cumulative GPA of 2.5 or higher before making application to the ATRN major. Students applying for the Exercise Science major must make a grade of C or higher in the above courses and have a cumulative GPA of 2.0 or higher before making application to the EXER major. All ATRN and/or EXER courses taken at UNC Charlotte required for any degree program in the Department of Kinesiology must be successfully completed at UNC Charlotte.

*Pre-Kinesiology majors are highly recommended to take LBST 2214 (Health and Quality of Life); this will substitute for HLTH 2101 (Healthy Lifestyles) as a required course and meet a General Education requirement.

**ATRN 2295 is required for those interested in pursuing Athletic Training as a major.

BACHELOR OF SCIENCE IN ATHLETIC TRAINING (ATRN)

The emphases of the curriculum are: risk management and injury prevention, pathology of injuries and illnesses, acute care of injuries and illnesses, pharmacology, therapeutic modalities, therapeutic exercise, general medical conditions and disabilities, nutritional aspects of injuries and illnesses, psychosocial intervention and referral, health care administration, and professional development and responsibilities. Students are given opportunities to gain knowledge and skills needed to pass the certification exam of the Board of Certification (BOC) for Athletic Training. Required courses in the upper division are: ATRN 3260, 3280, 3281, 3286, 3287, 3288, 3289, 3290, 3291, 3292, 3293, 3295, 3298, 3400, 3401, 4121, 4290, 4291, 4292, 4293, 4400, and 4401; and COMM 1101.

ADMISSION

Students who have completed all of the Pre-Kinesiology prerequisites may apply for the Athletic Training major. Students are admitted to the major for the fall semester only and admission is competitive. Admission decisions are made by a committee within the Department of Kinesiology. Selection into the program is competitive and satisfactorily completing the minimum requirements does not guarantee program admission. After evaluating the credentials of all applicants meeting the minimum academic requirements, the selection committee offers admission to students whose credentials demonstrate the highest level of academic achievement.

REQUIREMENTS

The Athletic Training Education Program is a rigorous and intense program that places specific requirements and demands on the students enrolled in the program. Examples of these requirements include: the ability to meet the technical standards of the program, current immunizations, possible drug testing and criminal background clearance, universal precaution training, clinical experiences, and successful completion of progression criteria. All courses required for the Athletic Training major must be completed with a grade of C or higher. A detailed description of the requirements of the program can be found in the BS in Athletic Training Student Handbook located in the Department of Kinesiology and online at kinesiology.uncc.edu under “Student Resources.”
Students applying for admission to the Athletic Training major must meet the following minimum academic requirements.

- Cumulative GPA of 2.5 or better in all college course work
- Completion of 60 hours
- Successful completion (grade of C or above) in all prerequisites for athletic training: BIOL 1273, BIOL 1273L, BIOL 1274, BIOL 1274L, CHEM 1251, CHEM 1251L, CHEM 1252, CHEM 1252L, STAT 1222, COMM 1101, MATH 1100, HLTH 2101*, ATRN 2150, ATRN 2290, ATRN 2294, ATRN 2295, and ATRN 2298
- Proof of current CPR for the Professional Rescuer with AED (or equivalent) certification
- Completion of the Athletic Training Education Program Application Packet
- Completion of all athletic training major prerequisites in the summer semester prior to the fall for which application is being made
- Completion of athletic training observation experience in the spring semester prior to the fall for which application is being made

*LBST 2214 (Health and Quality of Life) can be used as a substitute course for HLTH 2101.

Students should use the following course sequence to plan their class schedules once they are accepted into the Athletic Training program:

### Upper Division Core Program Course Sequence: B.S. in Athletic Training

#### Third Year

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<tr>
<th>Summer Term</th>
<th>Course</th>
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<tbody>
<tr>
<td></td>
<td>ATRN 2295 Care and Prevention Lab**</td>
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<tr>
<th>Fall Semester</th>
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<tbody>
<tr>
<td>ATRN 3260 Nutrition and Health Fitness</td>
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<tr>
<td>ATRN 3280 Foundation of Exercise Physiology</td>
<td>3</td>
<td></td>
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<tr>
<td>ATRN 3291 Therapeutic Modalities</td>
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<td></td>
</tr>
<tr>
<td>ATRN 3292 Therapeutic Modalities Lab</td>
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<tr>
<td>ATRN 3290 Lower Body Injury Evaluation</td>
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<tr>
<td>ATRN 3295 Lower Body Injury Evaluation Lab</td>
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<tr>
<td>ATRN 3400 Athletic Training Clinical I</td>
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<th>Spring Semester</th>
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<tbody>
<tr>
<td>ATRN 3286 Exercise Testing: Principles and Theory</td>
<td>3</td>
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<tr>
<td>ATRN 3287 Exercise Testing Lab</td>
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<tr>
<td>ATRN 3288 Upper Body Injury Evaluation</td>
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</tr>
<tr>
<td>ATRN 3289 Upper Body Injury Evaluation Lab</td>
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<tr>
<td>ATRN 3293 General Medical and Psychosocial Aspects of Athletic Training</td>
<td>3</td>
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<tr>
<td>ATRN 3298 Therapeutic Exercise Foundations</td>
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<tr>
<td>ATRN 3401 Athletic Training Clinical II</td>
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<table>
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<th>Fall Semester</th>
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<tr>
<td></td>
<td>ATRN 4121 Pharmacology for the Physically Active</td>
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<td></td>
<td>ATRN 4290 Therapeutic Exercise (W)</td>
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<td></td>
<td>ATRN 4291 Therapeutic Exercise Lab</td>
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<td></td>
<td>ATRN 4293 Biomechanics</td>
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<td></td>
<td>ATRN 4400 Athletic Training Clinical III</td>
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<tbody>
<tr>
<td>ATRN 4292 Organization and Admin of Athletic Training (O, W)</td>
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</tr>
<tr>
<td>ATRN 4401 Athletic Training Clinical IV</td>
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**Prerequisite ATRN 2294 should be taken during the spring semester of the sophomore year. ATRN
2295 should be taken during the summer after being accepted into the ATRN program.

A complete sequence of courses can be found online at kinesiology.uncc.edu.

### BACHELOR OF SCIENCE IN EXERCISE SCIENCE (EXER)

This degree program offers preparation for employment as Exercise Science practitioners in: health agencies, hospitals, fitness centers, business and industry, research laboratories, or any other setting which provides physical fitness enhancement programs for clients and patients. The courses in this major prepare the student to sit for the American College of Sports Medicine Health Fitness Specialist certification.

### REQUIREMENTS

Required courses are COMM 1101; EXER 3100, 3103, 3260, 3280, 3281, 3286, 4121, 4132, 4286, 4293, 4490, and 4660. Additionally, the student must complete EXER 1201 and three activity courses of their choosing. All of the required courses for the Exercise Science major must be completed with a grade of C or higher.

Students should use the following course sequence to plan their class schedules once they are accepted into the Exercise Science program:

#### Upper Division Core Program Course Sequence:

**B.S. in Exercise Science**

<table>
<thead>
<tr>
<th>Third Year</th>
<th>Fall Semester</th>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>EXER 3260</td>
<td>Nutrition for the Physically Active</td>
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<td>EXER 3100</td>
<td>Organization and Administration of Exercise Science</td>
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<tr>
<td>EXER 3280</td>
<td>Exercise Physiology: Foundation and Theory</td>
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<tr>
<td>EXER 3281</td>
<td>Exercise Physiology: Principles and Application (W)</td>
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<td>EXER Activity Course Elective</td>
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<tr>
<td>PSYC 1101</td>
<td>General Psych</td>
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<tbody>
<tr>
<td>EXER 3103</td>
<td>Behavior Change for the Physically Active</td>
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<tr>
<td>EXER 3286</td>
<td>Exercise Testing: Foundation and Theory</td>
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<tr>
<td>EXER 3287</td>
<td>Exercise Testing: Principles and Applications (W,0)</td>
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<td>EXER Activity Course Elective</td>
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<td>Two Electives</td>
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#### Fourth Year

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<tbody>
<tr>
<td>EXER 4121</td>
<td>Pharmacology for the Physically Active</td>
<td>3</td>
</tr>
<tr>
<td>EXER 4286</td>
<td>Exercise Prescription</td>
<td>3</td>
</tr>
<tr>
<td>EXER 4293</td>
<td>Biomechanics</td>
<td>3</td>
</tr>
<tr>
<td>EXER Activity Course Elective</td>
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<tr>
<td>Two Electives</td>
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<table>
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<tr>
<th>Spring Semester</th>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>EXER 4660</td>
<td>Practitioner Seminar (W,0)</td>
<td>3</td>
</tr>
<tr>
<td>EXER 4132</td>
<td>Lifetime Weight Management</td>
<td>3</td>
</tr>
<tr>
<td>EXER 4490</td>
<td>Internship*</td>
<td>6</td>
</tr>
</tbody>
</table>

*Students must have completed EXER 1201 and three additional activity courses before registering for EXER 4490.

A complete, updated sequence of courses can be found at kinesiology.uncc.edu.

### BACHELOR OF SCIENCE IN RESPIRATORY THERAPY (RESP)

The emphasis of the curriculum is to enhance and advance the student’s professional career in respiratory care with additional education in administration, research and evaluation, and advanced critical care. This degree program is offered completely online through the Office of Distance Education and the Department of Kinesiology. Students seeking admission into this program will already be board-certified practicing Respiratory Therapists. The program culminates in a capstone experience that is developed around the students’ specific professional interest area. The curriculum offers specific professional course work in advanced critical care, advanced pharmacology, program administration, and clinical outcomes evaluation.

### REQUIREMENTS

The required core courses are as follows: RESP 3101, 3102, 3103, 3104, 3105, 4101, 4102, 4103, 4104, 4111; NURN 4201. For all required courses for the Respiratory Therapy major, the student must receive a grade of C or higher to be considered successful.
ADMISSION
Registered Respiratory Therapists seeking a Bachelor of Science degree in Respiratory Therapy may apply for admission to BSRT online degree program. Criteria for admission to the program are a current unencumbered license as a Registered Respiratory Therapist, a cumulative grade point average of 2.0 or better from your Associate Degree program that is a CoARC-accredited respiratory therapy program, from a regionally accredited institution, and must earn at least a C in all coursework taken by the end of the semester prior to the semester for which application is made.

Students must first apply for admission to the University, and then make a second application to the Department of Kinesiology. The final program admission decision is made by the Department of Kinesiology. Applicants are competitively reviewed for admission based on their cumulative GPA in all college transferable coursework. Satisfactorily completing the minimum requirements does not guarantee admission into the program. After evaluating the credentials of all applicants meeting the minimum academic requirements, the selection committee offers admission to students whose credentials demonstrate the highest level of academic achievement. Students are admitted in one cohort in the Fall semester, in which applications are accepted from November 15 to March 15. Students will be accepted directly into the program as a BSRT major. Applications are available from the Office of Student Services in the College of Health and Human Services. Admission decisions are communicated in writing by the Department. Applicants who are denied may reapply.

PREREQUISITES FOR PARTICIPATION IN THE CLINICAL PRACTICUM (RESP 4111): DRUG TESTING AND CRIMINAL BACKGROUND CHECKS
Students in a professional program may be asked by a clinical facility to undergo drug testing and/or have a criminal background check before being allowed to participate in a clinical experience at that facility. Students are responsible for the cost of drug testing and criminal background checks. All BSRT students must meet the University’s immunization and health status requirements.

Upper Division Core Program Course Sequence:
B.S. in Respiratory Therapy

<table>
<thead>
<tr>
<th>Third Year</th>
<th>Fall Semester</th>
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</thead>
<tbody>
<tr>
<td>Course</td>
<td>Credits</td>
</tr>
<tr>
<td>RESP 3101</td>
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</tr>
<tr>
<td>Professional Roles and Dimensions of Respiratory Therapy*</td>
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</tr>
<tr>
<td>RESP 3102</td>
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<td>Advanced Pharmacology in Respiratory Therapy</td>
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<td>RESP 4101</td>
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<tr>
<td>Program Design, Implementation, and Outcomes Evaluation</td>
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<td>RESP 4104</td>
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<td>RESP 4111</td>
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*Students may be awarded up to 46 credit hours by examination upon successful completion of RESP 3101. Students will also need to take various elective courses in order to fulfill the 120 hours needed to graduate.

Further information about the program can be found online at: kinesiology.uncc.edu.
Department of Public Health Sciences

Chair: V. Lord
Professors: A. Harver, S. Portwood, J. Studnicki
Associate Professors: A. Arif, J. Laditka, S. Laditka, M. Thompson
Assistant Professors: L. Huber, C. Piper, E. Platonova, E. Racine, A. Tanner, J. Warren-Findlow
Visiting Assistant Professor: J. Fisher
Lecturer and Coordinator of the BSPH Program: C. Davis
Adjunct Professors: B. Arrigo, W. Brandon, M.A. Nies, T. Scheid, R. Tong
Adjunct Associate Professors: D. Bosley, J. Dmochowski, M. A. Hirsch, J. Troyer
Adjunct Assistant Professors: C. Blanchette, J.D. Carew, C. T. Humphries, M. O'Connor, S. Reif, R. Seymour
Adjunct Lecturer: J. Williams

The Department of Public Health Sciences was founded as the Department of Health Behavior and Administration on July 1, 2002 as part of the transformed College of Health and Human Services. The new department was conceived in response to recommendations derived from UNC Charlotte’s Health Commission report (2000) as well as a variety of initiatives placing emphasis on population health and health behavior research. In May 2007, the department was renamed to Public Health Sciences to better reflect the unit’s larger-scale set of current and planned research programs, degree offerings, and service activities that are relevant to contemporary public health. The Public Health Programs (BSPH and MSPH) in the Department of Public Health Sciences are accredited by the Council on Education for Public Health (CEPH) through June 2014.

The department favors the development and implementation of collaborative academic programs and interdisciplinary scholarship. Faculty in the Department of Public Health Sciences are engaged in research programs funded by the National Institutes of Health, the Centers for Disease Control and Prevention, Kate B Reynolds Charitable Trust, and other state agencies and private foundations. Faculty research programs focus on individual and population health including: the prevention and management of disease across the lifespan; the health status of diverse, urban communities; and population health and health care analytics.

The Department of Public Health Sciences is committed to academic excellence. The Master of Health Administration (MHA) degree program is accredited by the Commission on Accreditation of Healthcare Management Education (CAHME). Our Public Health baccalaureate and master's degree programs are accredited by the Council on Education for Public Health (CEPH). The department is a member of the Association of University Programs in Health Administration; and the College of Health and Human Services is an affiliate member of AcademyHealth. The University of North Carolina at Charlotte is an approved location for the Certified Health Education Specialist (CHES) exam.

The department supports the University’s core values encouraging diversity and equal educational and employment opportunities throughout the University community. These values are evident in the University’s non-discrimination policies, the Council on University Community, and the Multicultural Resource Center.

PROGRAM DEGREES
The department offers the Bachelor of Science in Public Health (BSPH) and a minor in Public Health. Undergraduate interdisciplinary experiences provide students better flexibility in working across disciplines as well as within their own specialty as they grow their careers. The department also provides opportunities for students to work closely with individual members of the faculty through either Independent Study or Undergraduate Research experiences.

BACHELOR OF SCIENCE IN PUBLIC HEALTH (BSPH)

Public health is the science and art of promoting health, preventing disease and injury, and prolonging life through organized efforts of society. Professionals working in the field of Public Health assess, evaluate, monitor, regulate, and implement health care services in the promotion of healthy behaviors and habits on an individual, family, professional, or community level; focus on a variety of health issues, such as infectious diseases, health problems of the elderly and disadvantaged, chronic diseases, health issues of infants and mothers, toxic wastes, and hazardous chemicals; and work in a wide range of positions, such as in businesses, government agencies, education, not-for-profits, and health organizations.

The BSPH provides undergraduate students with a solid foundation of knowledge in the 5 core areas of public health (health behavior, epidemiology, administration, environmental health, and biostatistics), and research and practice experiences.
to apply them through core content courses, a required internship, and a capstone experience. The program prepares students for entry to mid-level positions in a variety of settings including health-related agencies and organizations, hospitals, local and state public health departments, academic research centers and institutes, corporate disease management and wellness programs, non-profit agencies, and healthcare businesses and industries. Continued study in the Department of Public Health Sciences is also an option for those interested in graduate degrees in Public Health or Health Administration.

PRE-PUBLIC HEALTH MAJOR (PRPH)
(Guidelines for Freshman and Sophomore Years)
Applicants who satisfy freshman or transfer requirements for admission to the University and are interested in the BSPH can declare the Pre-Public Health Major (PRPH). It includes a combination of 70-75 hours of courses that fulfills the UNC Charlotte General Education requirements; declaration of a minor; and serves as preparatory coursework for the Public Health major (BSPH).

Required Courses (70-75 credits)

- **English (3 or 6 credits)**
  ENGL 1101 and ENGL 1102 OR ENGL 1103

- **Quantitative Courses (6 credits)**
  MATH 1100 and STAT 1222 (or equivalents)

- **Sciences (7 credits)**
  Choose from list in the Undergraduate Catalog

- **Social Sciences (3 credits)**
  Choose from list in the Undergraduate Catalog

- **Liberal Studies (12 credits)**
  Choose from list in the Undergraduate Catalog

- **Prerequisite Core Courses (9 credits)**
  COMM 1101  Public Speaking
  HLTH 2101  Healthy Lifestyles
  HLTH 3101  Foundations of Public Health

- **Health-Related Communication (choose 6 credits from the following)**
  COMM 2100  Introduction to Communication Theory
  COMM 2105  Small Group Communication
  COMM 2107  Interpersonal Communication
  COMM 3115  Health Communication
  COMM 3130  Communication and Public Advocacy
  COMM 3135  Leadership, Communication, and Group Dynamics
  COMM 3141  Organizational Communication

- **Declare a Minor (15-26 credits)**
  Choose any minor on campus except Interdisciplinary Health Studies (IDHS) or Public Health (HLTH)

- **Electives (as many needed for 70-75 credits total)**
  Includes study abroad courses

APPLYING TO THE PUBLIC HEALTH MAJOR (BSPH)
Students must apply for admission to the Public Health major (BSPH). Applications are accepted from students who will have completed 60 credit hours by the time they begin to take courses in the major, including the following 25 hours of courses listed in the PRPH Major (whether or not the student declared the PRPH Major):

- COMM 1101
- HLTH 2101
- HLTH 3101
- Quantitative courses (6 hours)
- Science courses (7 hours)
- Social Science courses (3 hours)

Admissions only occur for Fall semesters and the number of students admitted each Fall is limited. Admission into the BSPH Major is competitive and based on the following:

- A minimum cumulative GPA of 2.5 for 60 credit hours
- GPA for completed courses including COMM 1101, HLTH 2101, HLTH 3101, Quantitative courses (6 hours), Science courses (7 hours), and Social Science courses (3 hours)
- Goal statement and application for admission

Applications for admission should be submitted the spring semester prior to eligibility to begin the BSPH Major in the Fall semester. Applications for admission are due February 15 of each year, and include academic transcripts, application, and a statement of future career goals.

PUBLIC HEALTH MAJOR (BSPH)
(Guidelines for Junior and Senior Years)
The Public Health major includes 50 hours of courses that are designed to meet the criteria established by the Council on Education in Public Health (CEPH) for accreditation of public health degree programs. Students completing the curriculum will be eligible to sit for the nationally-recognized Certified Health Education Specialist (CHES) exam.

Courses for the BSPH Major (total hours = 50)

- **Core Courses (32 hours)**
  **Year 3 Fall**
  HLTH 3103  Behavior Change Theories and Practice
  HLTH 3105  Behavior Change Theories and Practice

  The remaining 9 hours of course load should be filled with remaining General Education course requirements, remaining Pre-PH Major course requirements, remaining required courses for the declared Minor, required Culture and Health courses, and additional health-related electives.
The remaining 8 hours of course load should be filled with remaining General Education course requirements, remaining Pre-PH Major course requirements, remaining required courses for the declared Minor, required Culture and Health courses, and additional health-related electives.

Year 3 Summer or Year 4
HLTH 4400  Public Health Internship

Year 4 Fall
HLTH 4102  Healthcare Administration
HLTH 4103  Environmental Health

The remaining 9 hours of course load should be filled with remaining required courses for the declared Minor, required Culture and Health courses, and additional health-related electives.

Year 4 Spring
HLTH 4105  Program Planning and Evaluation
HLTH 4105L  Program Planning and Evaluation Lab
HLTH 4600  Capstone

The remaining 5 hours of course load should be filled with remaining required courses for the declared Minor, required Culture and Health courses, and additional health-related electives.

*Students will complete the core courses during the designated semesters and will complete HLTH 4104 (Epidemiology) as well as the remaining courses from among the following electives as their schedules permit:

Culture and Health Courses (choose 6 hours)
ANTH 3122/3222  Culture, Health, and Disease
HLTH/GRNT 3115  Health and the Aging Process
HLTH/GRNT/WGST  4260 Women: Middle Age and Beyond
NURS/WMST 4191  Women’s Health Issues

Health-Related Electives (choose 12 hours)
COMM 3115  Health Communication
ECON 3141  Health Economics
EXER 3260  Nutrition and Health Fitness
EXER 4130  Applied Nutrition for Today’s Consumer
POLS 3125  Health Care Policy
PHIL 3230  Healthcare Ethics
SOCY 4130  Sociology of Health and Illness
SOCY 4168  Sociology of Mental Health and Illness
Any HLTH 3000-level or 4000-level course, except HLTH 3101
Any 3000- or 4000-level health-related study abroad course

To graduate with a BSPH degree, students must have completed 120-125 hours (70-75 hours from the PRPH major and 50 hours from the BSPH major).

MINOR IN PUBLIC HEALTH

The Minor in Public Health supports students interested in health-related careers or those seeking a health dimension within other career choices. Students in the minor come from biological, social, and behavioral sciences, as well as from health-related academic majors. The minor extends students’ working knowledge of health applications, better preparing them to be competitive in the job market and to make advanced degree choices.

Students seeking entry-level positions in health services or non-clinical health agencies and organizations after graduation will find this minor helpful in broadening their understanding of contemporary public health issues. Students in the minor are well positioned for graduate work in specific disciplines like psychology, sociology, social work, public health, health communication, or adult development and aging. The program also provides applied health content and added value to academic degrees of students seeking admission to dental, nursing, medical, pharmacy, physical therapy and other professional schools.

The Minor in Public Health fosters an interdisciplinary perspective of individual and population health. National health priorities in the first decade of the 21st century emphasize interdisciplinary training. As students develop specific healthcare competencies, undergraduate interdisciplinary experiences provide students better flexibility in working across disciplines as well as within their own major.

The Minor in Public Health is awarded only to students completing an undergraduate major at UNC Charlotte. The minor consists of 22 semester hours: 13 hours must come from a set of required courses and nine hours must come from the set of unrestricted electives. To qualify for the Minor in Public Health, students must have a grade point average of 2.0 in courses applied to the minor. Students are encouraged to take electives outside their major department and college to gain a broader health perspective. Because additions and deletions of courses may be made to correspond to current University offerings, students are encouraged to consult with the Program Coordinator as they plan their schedules.

Required courses (9 hours)
HLTH 3101  Foundations of Public Health (3)
HLTH 4104  Epidemiology (3)
HLTH 4280  Global Health Issues (3)
Required Science and Lab course (choose one; 4 hours)
- ANTH 2141  Principles of Biological Anthropology and Lab (4)
- BIOL 1259 and 1259L  Bacteriology (3) and Lab (1)
- BIOL 1273 and 1273L  Human Anatomy and Physiology (3) and Lab (1)
- BIOL 3273 and 3273L  Animal Physiology (3) and Lab (1)
- PSYC 1101 and 1101L  General Psychology (3) and Lab (1)

Unrestricted Electives (choose three; 9 hours)
- ANTH 3122/3222  Culture, Health, and Disease (3)
- ANTH 4131  Culture, Pregnancy and Birth (3)
- ATRN/EXER 2150  Introduction to Kinesiology (3)
- COMM 3115  Health Communication (3)
- ECON 3141  Health Economics (3)
- ETIN 3243  Occupational Health Technology (3)
- FINN 3271  Principles of Risk Management and Insurance (3)
- GRNT 2100  Aging and the Life Course (3)
- GRNT/PSYC 2124  Psychology of Adult Development and Aging (3)
- HIST 2140  Disease and Medicine in History (3)
- HLTH/GRNT 3115  Health and the Aging Process (3)
- NURS/WGST 4191  Women’s Health Issues (3)
- PHIL 3230  Healthcare Ethics (3)
- POLS 3125  Health Care Policy (3)
- PSYC 2160  Introduction to Health Psychology (3)
- PSYC 3151  Abnormal Psychology (3)
- PSYC 3155  Community Psychology (3)
- SOCY 4130  Sociology of Health and Illness (3)
- SOCY 4168  Sociology of Mental Health and Illness (3)
- Any unrestricted HLTH 2000-, 3000-, or 4000-level course

INTERDISCIPLINARY HEALTH STUDIES (IDHS) MINOR
The Interdisciplinary Health Studies (IDHS) minor was discontinued in Fall 2010; at this same time, the Public Health (HLTH) minor was implemented. Students with an IDHS minor already noted in Banner Self-Service prior to Fall 2010 may complete the IDHS requirements or change to the HLTH minor. All other students are required to complete the Public Health (HLTH) minor requirements.

Department of Social Work

Chair: D. Long
Professor Emeritus: J. Dudley
Graduate (MSW) Program Coordinator: M. Ezell
Baccalaureate (BSW) Program Coordinator: J. Shears
Field Coordinator: S. Marchetti
Professors: M. Ezell, D. Long
Associate Professors: S. Boyd, O. Lee, J. Shears
Assistant Professors: R. Herman-Smith, S. Kulkarni, S. McCarver, D. Rowan, L. Thomas,
Lecturers: A. Barsanti, J. Doherty, G. Jordan, S. Marchetti, T. Matthews

The Department of Social Work offers a major in Social Work leading to the Bachelor of Social Work (BSW) degree. On the graduate level, the Department offers the Master of Social Work degree.

BACHELOR OF SOCIAL WORK (BSW)

Social work is a profession devoted to helping people function as effectively as possible within their environment. The BSW degree prepares students for generalist social work practice with individuals, families, groups, organizations and communities. BSW graduates provide services such as assessment and intervention, counseling, crisis intervention, referral, mediation, and advocacy with diverse populations across all age groups. BSW graduates work in a broad array of settings including: hospitals; group homes; mental health, substance abuse, child welfare, and youth and family service agencies; nursing homes, and schools. BSW education also provides an excellent foundation for those who wish to pursue graduate study in social work. The BSW program prepares graduates for the North Carolina Certified Social Worker certification.

COURSE REQUIREMENTS
The major in Social Work leading to the BSW degree consists of 76 credit hours made up of 53 credits in required SOWK courses and 23 credits in required courses from other disciplines.

The core courses for the social work major are:
- SOWK 1101, 2182, 2183, 3100, 3120, 3181, 3182, 3184, 3201, 3202, 3482, 3484, 3683, and 3685, one social work elective and one other social work or gerontology elective. Other required courses for the social work major are SOCY 1101, BIOL
Suggested Curriculum: B.S.W. Degree**

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<td>Course</td>
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**For a detailed description of BSW degree requirements, please refer to the BSW Program Student Handbook online at socialwork.uncc.edu under “Degree Programs and Admissions.”

1110 and Lab; PSYC 1101, POLS 1110, PSYC 3151, SOCY 4156 and Lab, and a Foreign Language at the 2200 or 2201 level.
OBJECTIVES
The College of Liberal Arts and Sciences is an academic community engaged in advancing the discovery, dissemination, and application of knowledge in the traditional areas of liberal arts and sciences and in emerging areas of study. As a community focused on learning and teaching, we are guided by an unshakeable commitment to humanistic values and ethical conduct, by a creative and entrepreneurial frame of mind, and by an awareness of the global context in which the university exists.

The liberal arts are the core of the University's educational program, both for students majoring in Liberal Arts and Sciences and for students majoring in professional degree programs. As a result, courses offered within the College of Liberal Arts and Sciences are frequently those designated to satisfy University General Education requirements (see General Education Requirements in the Degree Requirements and Academic Regulations section of this Catalog).

ORGANIZATION
The College of Liberal Arts and Sciences includes the Departments of Aerospace Studies (Air Force ROTC); Africana Studies; Anthropology; Biology; Chemistry; Communication Studies; Criminal Justice and Criminology; English; Geography and Earth Sciences; Global, International, and Area Studies; History; Languages and Culture Studies; Mathematics and Statistics; Military Science (Army ROTC); Philosophy; Physics and Optical Science; Political Science; Psychology; Religious Studies; and Sociology. Undergraduate interdisciplinary programs in American Studies, Film Studies, Gerontology, and Women's and Gender Studies are also part of the College of Liberal Arts and Sciences.

DEGREE PROGRAMS
Baccalaureate degrees are offered in all departments, and minors are available in the following programs: Actuarial Mathematics; Aerospace Studies; Africana Studies; American Studies; Anthropology; Biology; Biotechnology; Chemistry; Children's Literature and Childhood Studies; Classical Studies; Cognitive Science; Communication Studies; Criminal Justice; Diverse Literatures and Cultural Studies; Earth Sciences; English; Film Studies; French; Geography; Geology; German; Gerontology; History; Holocaust, Genocide, and Human Rights Studies; Humanities, Technology, and Science; International Studies; Islamic Studies; Japanese; Journalism; Judaic Studies; Latin American Studies; Mathematics; Meteorology; Military Science; Philosophy; Physics; Political Science; Psychology; Religious Studies; Russian; Sociology; Spanish; Technical and Professional Writing; Urban Studies; and Women's and Gender Studies. Medical technology options are available in Biology and Chemistry. For details on graduate degrees and certificates, please see the UNC Charlotte Graduate Catalog.

Although faculty within the College are committed to departmentally based programs, increased emphasis is being placed on providing strong interdisciplinary programs. The College also strives to promote inter-cultural understanding through its curriculum, as well as through student exchanges and travel
opportunities.

**DEGREE REQUIREMENTS**

**General Education Requirements**
Since all students entering the University must meet the same General Education requirements regardless of major, it is appropriate to concentrate on the completion of those requirements before committing to a specific major. Undeclared students have time to enroll in courses in several disciplines, which allows them to make a more informed judgment about future career decisions. Advisors have a broad working experience with the requirements for majors and offer assistance as students search for the education choice best suited to their individual needs.

**Degree Programs/Majors and Minors Requirements**
Students in the College of Liberal Arts and Sciences must satisfy the requirements for the degree program(s) in which they are enrolled. Students should consult with their chosen department to make certain they fully understand all degree requirements. Some departments in the College of Liberal Arts and Sciences require completion of a minor program of study in conjunction with their major degree program. Students should be familiar with the requirements of any minor program of study they attempt to complete.

**Foreign Language Requirements**
All students who earn a degree within the College of Liberal Arts and Sciences are required to demonstrate proficiency in the language of their choice through the 1202 level.

Proficiency can be demonstrated in the following ways: (1) completing the required coursework at UNC Charlotte; (2) completing three years of the same foreign language in high school through level three; (3) achieving a satisfactory score on the foreign languages placement test; (4) through approved transfer or transient credit earned at other accredited institutions; (5) by transferring in with an A.A., A.S. or A.F.A. degree; or (6) a combination of the above methods (e.g., placing out of or earning transfer or transient credit for 1201 and completing the 1202 course, completing 1201 and placing out of or earning transfer or transient credit for 1202).

This requirement will apply to all students entering any degree program within the College of Liberal Arts and Sciences Fall 2005 and beyond, except those students whose primary major is in Engineering and are enrolled in either the dual degree program in Mechanical Engineering and Physics or the program in Electrical and Computer Engineering and Physics which were approved and implemented prior to Fall of 2006. Students enrolled in the University prior to Fall 2005 but not enrolled in a degree program in the College of Liberal Arts and Sciences Fall 2005 and beyond will be subject to this requirement, except those students whose primary major is in Engineering and are enrolled in either the dual degree program in Mechanical Engineering and Physics or the program in Electrical and Computer Engineering and Physics which were approved and implemented prior to Fall of 2006.

Although all students in the College of Liberal Arts and Sciences are subject to the 1202 proficiency requirement, students in selected departments will additionally have to satisfy a proficiency requirement through the intermediate (2000) level. All students in the College of Liberal Arts and Sciences should consult with their major department to determine whether or not they are required to complete the intermediate proficiency requirement as part of their major or related coursework.

**ADVISING CENTER**
The College of Liberal Arts and Sciences administers an advising center for students who have enrolled in a major within the college. College advisors are available to provide guidance on both major requirements and General Education requirements. Students enrolled in all College of Liberal Arts and Sciences majors are encouraged to consult with college advisors to clarify academic regulations and check their progress toward fulfilling requirements.

**EXPERIENTIAL LEARNING AND SERVICE OPPORTUNITIES**
Students are encouraged to participate in professional work experiences in support of their academic and career development through the cooperative education, 49ership, service, and internship programs offered to them. The College works with the University Career Center to expand experiential learning offerings to enable more students to graduate with career-related experience. For more information about experiential learning opportunities, please see the University Career Center section of this Catalog.
Department of 
Africana Studies 
africana.uncc.edu

Chair: A. Ogundiran
Frank Porter Graham Professor: T. Ojaide
Professor: A. Ogundiran
Associate Professors: V. Nmoma Hilliard, D. Ruiz, D. Smith
Assistant Professors: F. Germain, T. Rogers

The Department of Africana Studies offers a Bachelor of Arts degree and a minor program. Its curriculum focuses on the history, economy, politics, literature, religion, and culture of peoples of African descent throughout the world and their interaction with the rest of humankind. The department offers a comprehensive liberal arts curriculum that enhances global awareness, engages social policies, fosters entrepreneurial skills in regional and transnational contexts, and develops the skills needed for success in the 21st century. Its interdisciplinary approach presents a stimulating diversity of perspectives integrated into a totality not available in other disciplines, programs, or departments. The curriculum is designed to provide a useful educational experience and academic skills for students who wish to consider graduate study or professional school and pursue careers in community development agencies; federal, state, and city civil service; business; museums and archives; and diplomatic or foreign service; as well as research, journalism, international organizations, and teaching.

The goals of the Department of Africana Studies are:

a) To disseminate knowledge about the aggregate experience of peoples of African descent by offering a wide range of Africana courses to the University community and the public.
b) To generate new knowledge and paradigms about the experiences of peoples of African descent through research, publication, and teaching that are interdisciplinary, transnational, and intercultural.
c) To dispel myths and stereotypes about Blackness and Africa-derived cultures and practices through critical course content, programs, exchanges of ideas, and inter-cultural interaction.
d) To promote transnational perspectives that foster socio-cultural and political awareness to meet the critical challenges posed by globalization, professional careers, as well as the demands of the work world through exposure to relevant experiences and course requirements.
e) To provide general and specific academic skills to majors and non-majors through courses and activities that promote research, writing, reading, critical thinking and effective communication.
f) To advance the intellectual development and personal growth of students through the acquisition, synthesis, dissemination, and application of a multicultural liberal arts education.
g) To serve and contribute to local, national, and international civic institutions.

BACHELOR OF ARTS

The Major in Africana Studies leading to a B.A. degree requires the completion of a minimum 30 credit hours in Africana Studies courses.

CORE COURSES (15 credits)
AFRS 1100 Introduction to Africana Studies (3)
AFRS 3290 Research Methods (3)
AFRS 4000 Senior Seminar in African Studies (3)
AFRS 4010 African Diaspora Theory (3)

And one of the following:
AFRS 2156 African Civilization (3)
AFRS 2160 African American Experience through Civil War (3)
AFRS 2161 African American Experience: Civil War to Civil Rights (3)

ELECTIVE COURSES (15 credits)
The remaining fifteen credit hours must be in Africana Studies electives, including any of the following:
AFRS 2050 Topics in Africana Studies (3)
AFRS 2105 Black Images in the Media (3)
AFRS 2120 African American Women (W)
AFRS 2156 African Civilization (3)
AFRS 2160 African American Experience through Civil War (3)
AFRS 2161 African American Experience: Civil War to Civil Rights (3)
AFRS 2206 African Literature, Music, and Art (3) (W)
AFRS 2215 Black Families in the U.S. (3) (W)
AFRS 2221 Contemporary Africa (3)
AFRS 2301 Introduction to African-American Literature (3)
AFRS 3050 Topics in Africana Studies (3)
AFRS 3150 African-American Church and Civil Rights (3)
AFRS 3158 Gender and African-American Literature (3)
AFRS 3190 Political Economy of the Caribbean (3)
AFRS 3200 Folklore of Africa and the African Diaspora (3)
AFRS 3210 Black Families in the Diaspora (3)
AFRS 3218 Racial Violence, Colonial Times to Present (3)
AFRS 3220 Caribbean from Slavery to Independence (3)
AFRS 3240 African Americans and the Legal Process (3)
AFRS 3260  Slavery, Racism and Colonialism in the African Diaspora (3)
AFRS 3265  African Economic Development (3)
AFRS 3270  Afro-Latin American History (3) (W)
AFRS 3278  Race in the History of Brazil (3)
AFRS 3280  Blacks in Urban America (3)
AFRS 3290  Research Methods (3) (O)
AFRS 3692  Colloquium (3) (W)
AFRS 3830  Philosophy and Race (3)
AFRS 3895  Independent Study (1-3)
AFRS 3990  Project in Africana Studies (2-15)
AFRS 4000  Senior Seminar in Africana Studies (3)
AFRS 4050  Topics in Africana Studies (3)
AFRS 4101  Modern African Literature in English (3)
AFRS 4105  African International Relations (3)
AFRS 4401  Professional Internship in Africana Studies (3)

A minimum 2.0 grade point average is required in the 30 credit hours of Africana Studies.

During the Junior or Senior year, students may design and work on a major research project or enroll in a professional internship program at places such as the Afro-American Cultural Center, City Hall, International House, Levine Museum, The Leader, the Metrolina Association for the Blind, Planned Parenthood, the Charlotte Observer, and the Charlotte Post.

STUDY ABROAD
Students may have an opportunity to travel, work, and study abroad in an exchange program through an African university, the Peace Corps, and Operation Crossroads.

MINOR IN AFRICANA STUDIES

The Minor in Africana Studies requires the completion of 18 semester hours of Africana Studies courses:

- AFRS 1100  Introduction to Africana Studies
- AFRS 4010  African Diaspora Theory
- Six credits at the 2000-level
- Six credits at the 3000- and 4000-levels

A minimum of 2.0 grade point average is required for the 18 hours of the Minor in Africana Studies.

American Studies

American Studies is an interdisciplinary program designed to develop in-depth knowledge of American society, past and present. Drawing its curriculum from approved courses in other departments and its own core courses, the program weaves traditionally divergent disciplines together so that students gain a broad understanding of American life and culture. The American Studies program is open to students of all majors. Students may complete the program by fulfilling requirements for the minor.

MINOR IN AMERICAN STUDIES

A minor in American Studies consists of 18 semester hours: six hours of American Studies courses including AMST 3100, and 12 semester hours of American Studies courses or approved American-content courses from other departments. A maximum of six hours of American-content courses may be in the student's major. If the student has additional majors or minors, no more than six hours American-content courses from each of these may apply to the American Studies minor. These stipulations include cross-listed courses regardless of the program designation under which the course was taken. Exceptions may be approved by the Program Director and, if necessary, upon consultation with the other program in question. Note: Students exercising this option should be aware that the accuracy of the online degree audit may be affected. All students must have a grade point average of at least 2.0 in courses applied to the minor.

The following courses have been approved for the minor. Because additions and deletions are made to correspond to current University offerings, students are advised to consult with the Director. Other courses that do not appear on the list, especially topics and independent study courses, may be approved if they are pertinent to the student's program and deal with an American topic.

Africana Studies: AFRS 1100, 1111, 1112, 2105, 2106, 2120, 2160, 2203, 2204, 2208, 2215, 2301, 3101, 3150, 3179, 3218, 3240, 3250, 3280, 4106, 4107, 4108
American Studies: AMST 2050, 2100, 3000, 3020, 3050, 3090, 3100, 3210, 3800, 4050
Anthropology: ANTH 2112, 2114, 2152, 4110
Architecture: ARCH 4214
Art History: ARTH 2190
Business Law: BLAW 3150, 3250
Communications: COMM 2110, 2120, 3052, 3115, 3120, 3121, 3130, 3131, 4101, 4102
Criminal Justice: CJUS 2102, 2120, 2154, 3102, 3110, 3112, 3120, 3121, 3130, 3141, 3150, 3151, 3152, 3153, 4101, 4160, 4161, 4162
Dance: DANC 2226, 2227
Economics: ECON 1101, 1201/2101, 1202/2102, 3105, 3106, 3107, 3115, 3122, 3123, 3131, 3132, 3141, 3151
English: ENGL 2104, 2301, 3132, 3140, 3141, 3142, 3143, 3144, 3156, 4103, 4145, 4146, 4147, 4148, 4156, 4157, 4158
Geography: GEOG 2140, 2155, 2160, 2200, 3100, 3110, 3115, 3150, 3200, 3205, 3206, 3210, 4108, 4209
Gerontology: GRNT 2100, 3132, 3267, 4260
History: HIST 1160, 1161, 2101, 2105, 2120, 2125, 2130, 2135, 2141, 2150, 2151, 2155, 2160, 2161, 2297, 3000, 3201, 3202, 3203, 3211, 3212, 3213, 3215, 3218, 3240, 3241, 3242, 3252, 3256, 3260, 3280, 3281, 3288, 4000
Music: MUSC 1133, 1134
Philosophy: PHIL 3130, 3910
Political Science: POLS 1110, 2120, 3010, 3101, 3102, 3103, 3104, 3105, 3108, 3109, 3111, 3112, 3114, 3115, 3116, 3119, 3121, 3123, 3124, 3125, 3126, 3128, 3157, 3172, 4110
Religious Studies: RELS 2108, 3135, 3137, 3150
Sociology: SOCY 2100, 2112, 2132, 2171, 3110, 3132, 3173, 3175, 3267, 4110, 4112, 4124, 4125, 4130, 4131, 4134, 4135, 4150, 4165, 4168, 4632
Social Work: SOWK 3120, 3201, 3202, 4100
Women’s and Gender Studies: WGST 1101, 2110, 2120, 2150, 2251, 3102, 3130, 3140, 3150, 3160, 3231, 4130, 4165, 4260

Department of Anthropology
anthropology.uncc.edu

Chair: J. Levy
Professor Emeritus: G. Ferraro
Professors: J. Levy, J. Marks, D. Shenk, G. Starrett
Associate Professors: D. Brockman, C. Wayland
Assistant Professors: D. Ogburn, N. Peterson
Lecturers: C. Fuentes

Anthropology is the study of humans and their cultures, and the exploration of human diversity in time and space. It is organized into four subfields: cultural anthropology, archaeology, biological anthropology, and linguistics. It emphasizes the comparative study of humans and the cross-cultural analysis of their social and cultural responses to fundamental human needs.

The study of anthropology is relevant for people whose goal is graduate study, as well as for people whose occupations and endeavors require a cross-cultural understanding of human nature and biology, human history and prehistory, and the variety of cultures humans have developed. It is particularly useful for teachers, medical personnel, social workers, and persons seeking careers in business and communications, as well as persons who plan to work in or with foreign countries. It provides competencies needed for employment in such organizations as museums, government agencies, school systems, corporations, police departments, the Park Service, and healthcare institutions.

BACHELOR OF ARTS IN ANTHROPOLOGY

A major in Anthropology leading to the B.A. degree requires completion of: (1) 34 semester hours of anthropology, including (2) ANTH 1101, 2141, 2151, 3101 and 4601; plus (3) 18 semester hours of electives in anthropology, including at least six semester hours in cultural anthropology; and (4) completion of ANTH 4601 with a grade of C or above. Also required are 18 semester hours of related work to be arranged in consultation with the student's advisor and organized around a region, an allied discipline, or minor in another approved discipline.

Students majoring in Anthropology must complete either a 2000-level course in a foreign language that uses the Latin alphabet (French, German, Italian, Spanish, etc.) or a 1200-level course in a language
that is not written in the Latin alphabet (Greek, Hebrew, Japanese, Russian, etc.), or demonstrate proficiency at that level. Intermediate American Sign Language is accepted. Non-native speakers of English may complete the foreign language requirement by passing ENGL 1101 and ENGL 1102 or the equivalent.

Students should consult the Department concerning internships and field schools in anthropology.

**BACHELOR OF ARTS IN ANTHROPOLOGY WITH CONCENTRATION IN APPLIED ANTHROPOLOGY**

The Concentration in Applied Anthropology is designed to equip anthropology majors with the skills needed for a career in applied anthropology, an area with growing employment opportunities. Applied anthropologists work in educational institutions, museums, zoos, health care organizations, non-profits, the business world, and elsewhere. Preparation for a career in applied anthropology involves developing a special set of job skills, in addition to a breadth of anthropological knowledge. Students who pursue a concentration in applied anthropology will complete coursework that will help them develop these skills.

The concentration in applied anthropology does not require more coursework than the traditional major. Instead, it requires specific coursework. Both options require a total of 11 courses/34 hours in anthropology and 18 hours of related work. The requirements for the anthropology major with a concentration in applied anthropology are:

1) 34 hours of anthropology coursework as follows:
   a) 16 semester hours in anthropology core courses (ANTH 1101, ANTH 2141, ANTH 2151, ANTH 3101, and ANTH 4601)
   b) ANTH 3111 Applied Anthropology (3)
   c) ANTH 3480 Internship in Anthropology (3)

2) One course in anthropological methods (e.g., ANTH 4453 Field Project in Archaeology, ANTH 3140 Forensic Anthropology; ANTH 4122 Ethnographic Methods, ANTH 4140 Primate Field Biology, or other approved course)

3) 9 semester hours in anthropology electives

4) 18 hours of related work consisting of the following:
   a) Quantitative Skills: 3 hours in statistics (STAT 1221 or 1222, or SOCY 4156, or another approved quantitative methods course)
   b) Communication Skills: 3 hours in ENGL 2116 or COMM 1101 or another approved course
   c) Interdisciplinary Skills: 9 hours in coursework outside of anthropology that focuses on a specific topic (e.g., health, education, public policy, business, political science, Latin America, Africa, Asia, etc.)
   d) Technical Skills: 3 hours that will equip students with technical skills necessary in their job area (e.g., advanced language skills beyond 2201, GIS or computer skills, lab skills).

Note: A GPA of at least 2.0 is required in the 34 hours of anthropology for both majors.

**MINOR IN ANTHROPOLOGY**

The minor in Anthropology requires the completion of 18 hours of anthropology including ANTH 1101 and 15 hours of electives with at least one course in each of three subdivisions of anthropology: cultural/linguistic anthropology, biological anthropology, and archaeology. A grade point average of at least 2.0 is required in the 18 hours of anthropology.

**MINOR IN APPLIED ANTHROPOLOGY**

The goal of the minor in applied anthropology is to train students majoring in other disciplines to incorporate anthropological knowledge and methods into their careers. As such, the applied minor will allow students to focus on the area(s) that interest them the most (instead of introducing students to the four subfields as our traditional minor does). The Minor in Applied Anthropology requires the completion of 18 hours in Anthropology to be completed as follows:

- ANTH 1101 Introduction to Anthropology
- ANTH 3111 Applied Anthropology
- One approved course in anthropological methods (e.g., ANTH 4453 Field Project in Archaeology, ANTH 3140 Forensic Anthropology, ANTH 4122 Ethnographic Methods, or ANTH 4140 Primate Field Biology)
- 9 semester hours of electives in anthropology

A grade point average of at least 2.0 is required in the 18 hours of anthropology.

**HONORS PROGRAM IN ANTHROPOLOGY**

The Department offers an Honors program in Anthropology to students whose GPA is at least 3.2 overall and 3.5 in anthropology.

To graduate with honors in anthropology, a student
must complete ANTH 4601(H), 4701, an internship or study abroad, and two university honors courses. For further information, interested students should consult with the Department Chair.

**Department of Biology**

Chair: M. Klotz  
Vice Chair for Academic Programs: J. Warner  
Vice Chair for Research: I. Sokolova  
Belk Distinguished Professor: K. Bost  
Cone Distinguished Professor: J. Oliver  
Belk Distinguished Scholar: P. Mukherjee  
Professors: M. Clemens, Y. Huet, L. Leamy, I. Marriott, L. Mellichamp, P. Mukherjee, T. Reynolds, S. Schneider, I. Sokolova  
Associate Professor Emerita: D. Langsam, R. Ostrowski, J. Travis  
Associate Professors: D. Dreau, S. Peters, C. Richardson, A. Ringwood, T. Steck, J. Zhang  
Assistant Professor Emeritus: D. Bashor  
Assistant Professors: J. Goodliffe, V. Grdzelishvili, M. Parrow, S. Yan  

The biological sciences are important in many areas of human endeavor encompassing wide-ranging career opportunities in medicine and allied health professions, education, environment, research, and industry.

**PROGRAM DEGREES**

The Department of Biology offers undergraduate programs leading to the Bachelor of Arts degree and the Bachelor of Science degree. The B.A. degree provides a firm foundation in the basic principles of biology as background to understanding the biological world, and as preparation for many careers, such as medical/pharmaceutical sales; while the B.S. degree provides opportunity for advanced studies in academic or professional programs. The Biotechnology Minor Program is an interdisciplinary program housed within the College of Liberal Arts & Sciences and is designed for Biology and Chemistry majors interested in careers in the biotechnology field. The minor in Biology is offered for students who desire some experience in biology as an adjunct to their major.

Biology programs can be tailored to fit the individual student's needs and interests. Through course
selection, the student can emphasize many areas within biology: plant sciences, including horticulture, systematics, and plant physiology and ecology; animal sciences, which include behavior, morphology and physiology; microbial science, including virology and microbial physiology; cellular/molecular studies, such as genetics, development, immunology and biotechnology; and environmental sciences, including ecology and evolution. Opportunities for individualized instruction occur at every level from undergraduate research and tutorials with faculty in the Junior and Senior courses to honors research projects in the Senior year. A program in medical technology is offered in cooperation with other institutions.

**GRADE REQUIREMENTS**

Students planning to declare a major in Biology must earn a C or above in BIOL 2120, BIOL 2130, BIOL 2130L, CHEM 1251, CHEM 1251L, CHEM 1252 and CHEM 1252L before being accepted into the major. Students must also complete at least one semester and one biology course at UNC Charlotte and have a minimum overall and BIOL GPA of 2.0. Students who plan to be Biology majors but have not completed these requirements will be classified as "pre-biology majors" (PBIO).

After twice receiving a grade below C in any of the following courses, BIOL 2120, 2130 and 2130L, a student cannot enroll in the course again.

A student who has two successive semesters with a cumulative GPA in Biology of less than 2.0 is ineligible for continuation in bachelor degree programs in Biology.

**BACHELOR OF ARTS IN BIOLOGY**

A major in Biology leading to the B.A. degree consists of 32 semester hours of biology including:

1) Core sequence of General Biology I (BIOL 2120) and General Biology II (BIOL 2130 + Lab)

2) Four area courses: Cell Biology (BIOL 3111 + Lab), Ecology (BIOL 3144), Genetics (BIOL 3166), and Animal or Plant Physiology (BIOL 3273 or 3272)

3) One three-hour evolution-oriented elective course (see department’s website for list of approved courses)

4) Senior Seminar (BIOL 4600)

The B.A. degree requires completion of three biology labs at or above the 3000-level. Additional requirements are CHEM 1251, 1252, and 2130 or 2131, with associated labs (CHEM 2131L is the required lab for CHEM 2130), three semester hours of mathematics (MATH) (excluding MATH 1102), and three semester hours of statistics (STAT). At least 12 hours of biology must be taken at UNC Charlotte. All Biology majors must take three hours of writing intensive (W) course work in Biology at UNC Charlotte. Enrolling in any Biology course requires a grade of C or above in ALL prerequisites for that course.

**BACHELOR OF ARTS WITH AN OPTION IN MEDICAL TECHNOLOGY**

Upon satisfactory completion of training at Wake Forest University Baptist Medical Center School of Medical Technology, a student may receive a B.A. degree in Biology from UNC Charlotte. (It is possible to obtain a B.S. degree by careful planning with the advisor, although a B.S. degree will typically require a longer period of time than will the B.A. degree). The student must take General Biology I (BIOL 2120), General Biology II (BIOL 2130, BIOL 2130L), Cell Biology (BIOL 3111, 3111L) Genetics (BIOL 3166), Microbiology (BIOL 4250, BIOL 4250L), Immunology (BIOL 4251), Animal Physiology (BIOL 3273), Seminar (BIOL 4600), and 16 hours of chemistry (CHEM 1251, CHEM 1251L, CHEM 1252, CHEM 1252L CHEM 2131, CHEM 2131L, and chemistry elective); have a total of 26 hours of biology and a total of four laboratories in biology at UNC Charlotte; and have a 2.0 grade point average overall and in the major at the end of the Junior year. The student must have a total of 90 hours including 24 hours of biology at UNC Charlotte; the remaining 30 hours and eight hours of biology will be accepted from the School of Medical Technology. The final 30 hours counted toward the degree, and the last eight hours counted toward the major prior to entering a School of Medical Technology must be taken at UNC Charlotte. Gaining admission to the School of Medical Technology is the responsibility of the student. Additional information is available from the Department of Biology.

**BACHELOR OF SCIENCE IN BIOLOGY**

In addition to the 32 hours of biology required for the B.A. degree, a student working toward the B.S. degree is required to take 12 additional hours in biology for a total of 44 hours, two additional biology laboratories for a total of five laboratories at or above the 3000-level, CHEM 2131 and 2132 with associated laboratories, PHYS 1101, 1102 and associated labs, and three additional hours of mathematics (MATH) (excluding MATH 1102). All B.S. students must take either MATH 1120 or 1241 as one of their required math courses.

**SUGGESTED CURRICULUM FOR B.A. OR B.S. IN BIOLOGY**

Following is the sequence in which required courses should be taken, even if they are not taken during the year indicated:
Freshman Year
BIOL 2120
BIOL 2130 + BIOL 2130L
CHEM 1251 + CHEM 1251L
CHEM 1252 + CHEM 1252L

Sophomore Year
CHEM 2131 or 2130 (B.A. only) + CHEM 2131L
BIOL 3111 + BIOL 3111L
BIOL 3144
STAT 1221
CHEM 2132 + CHEM 2132L (for B.S.)

Junior Year
BIOL 3166
BIOL 3272 or BIOL 3273
Advanced electives of any number

Senior Year
BIOL 4600
Advanced electives of any number

See the Department of Biology for a more detailed schedule for the four-year program leading to the B.A. or B.S., including schedules for each of the options.

BACHELOR OF SCIENCE WITH AN OPTION IN CELL BIOLOGY/PHYSIOLOGY

The B.S. in Biology with an option in Cell Biology/Physiology consists of 44 hours. These include the core biology courses, General Biology I (BIOL 2120) and General Biology II (BIOL 2130, BIOL 2130L); the four area courses, Cell Biology and lab (BIOL 3111 + BIOL 3111L), Ecology (BIOL 3144), Genetics (BIOL 3166), and Plant or Animal Physiology (BIOL 3272 or 3273); and Senior Seminar (BIOL 4600). In addition, a physiology lab (BIOL 3273L) must be taken. Three additional laboratories from among the area courses or track electives must also be taken to complete the requirements of the B.S. The track also requires that students choose one course from each of the following areas: (1) Subcellular* topics, (2) Structure and Function*, and (3) Advanced Physiology*. Consult the Department of Biology for a current list of approved courses in these areas. A minimum of nine additional hours should be chosen, in consultation with an advisor from appropriate electives depending upon the student’s interests. Students are encouraged to take Undergraduate Research (BIOL 3900) or Honors in Biology (BIOL 4700, BIOL 4701) under the direction of one of the Cell Biology or Physiology faculty. Students are responsible for completing all of the chemistry, math, and physics courses required for a B.S. in Biology.

BIOL 2120 General Biology I (3)
BIOL 2130, 2130L General Biology II & Lab (5)
BIOL 3111, 3111L Cell Biology & Lab (4)
BIOL 3144 Ecology (3)
BIOL 3166 Genetics (3)
BIOL 3272 Plant Physiology (3)
OR BIOL 3273, 3273L Animal Physiology & Lab (4)
BIOL 4600 Senior Seminar (1)
Subcellular topic (3)
Structure and Function (3)
Advanced Physiology (3)

Total = 32 credit hours

*Students must choose one course each from each of the following sub areas.

- **Subcellular topics**: Cell Physiology (BIOL 4171), Molecular Biology (BIOL 4199), Biochemistry (CHEM 4165), Advanced Cell Biology (BIOL 4000), DNA Profiling (BIOL 4000), Biotechnology at the Workbench (BIOL 4000).
- **Structure and Function**: Comparative Vertebrate Anatomy (BIOL 4293), or Microbiology (BIOL 4250)
- **Advanced Physiology**: Immunology (BIOL 4251), Microbial Physiology and Metabolism (BIOL 4257), Endocrinology (BIOL 4277), Neurobiology (BIOL 4279), or Cardiovascular Physiology (BIOL 4000).

BACHELOR OF SCIENCE WITH AN OPTION IN ECOLOGY/ENVIRONMENTAL BIOLOGY

A B.S. degree in Biology with an option in Ecology/Environmental Biology consists of 44 hours of biology including all required courses for a B.S. degree in Biology plus Ecology Laboratory (BIOL 3144L), Biometry (BIOL 4121), and Environmental Problems (BIOL 4000). Each student must take at least four courses in one of the following sub-areas of environmental biology. Students are also recommended to take ESCI 1101 and Undergraduate Research (BIOL 3900) under the direction of one of the environmental biology faculty. Students are responsible for all chemistry, mathematics, and physics requirements for a B.S. in Biology.

- **Plant Ecology**: Field Botany (BIOL 3229), Dendrology (BIOL 4229), Microbiology (BIOL 4250), Advanced Ecology (4144), Field Entomology (BIOL 4000), Horticulture (BIOL 3202), Evolution (BIOL 4111), Soil Science (ESCI 3210).
• Animal Ecology: Invertebrate Zoology (BIOL 3231), Vertebrate Zoology (BIOL 3233) or Mammalogy (BIOL 4235), Animal Behavior (BIOL 4243), Wildlife Biology (BIOL 4234), Microbiology (BIOL 4250), Advanced Ecotology (BIOL 4144), Field Entomology (BIOL 4000), Evolution (BIOL 4111).

• Environmental Assessment: Field Botany (BIOL 3229), Environmental Biotechnology (BIOL 4000), Microbiology (BIOL 4250), Wildlife Biology (BIOL 4234), Dendrology (BIOL 4229), Advanced Ecology (BIOL 4144), Soil Science (ESCI 3210), Hydrological Processes (ESCI 4140) or Fluvial Processes (ESCI 4155) or Ecotoxicology (BIOL 4000).

• Aquatic Ecology: Invertebrate Zoology (BIOL 3231), Microbiology (BIOL 4250), Advanced Ecology (BIOL 4144), Hydrological Processes (ESCI 4140) or Fluvial Processes (ESCI 4155), Quantitative Analysis (CHEM 3111), Ecotoxicology (BIOL 4000).

• General: Course program to be arranged in consultation with the Ecology/Environmental Biology Faculty.

BACHELOR OF SCIENCE WITH AN OPTION IN MICROBIOLOGY

A major in Biology leading to a B.S. degree with an option in microbiology includes the following coursework:

1) Core sequence of General Biology I (BIOL 2120) and General Biology II (BIOL 2130 and BIOL 2130L)
2) Four area courses:  Cell Biology (BIOL 3111 and BIOL 3111L), Ecology (BIOL 3144), Genetics (BIOL 3166), and Plant or Animal Physiology (BIOL 3272 or BIOL 3273, BIOL 3273L)
3) Senior Seminar (BIOL 4600)
4) Core of microbiology courses: Microbiology (BIOL 4250, BIOL 4250L), Microbial Physiology and Metabolism (BIOL 4257), Immunology (BIOL 4251), Pathogenic Bacteriology (BIOL 4256), and either Bacterial Genetics (BIOL 4255) or Molecular Biology (BIOL 4199)
5) Six credit hours from the following list of electives (at least one of which must include a laboratory): Virology (BIOL 4259), Parasitology (BIOL 4233), Advanced Immunology (BIOL 4291), Bacterial Genetics or Molecular Biology if not taken as part of the “core”, Recombinant DNA Techniques (BIOL 4168), Host-Parasite Interactions (BIOL 4000), Immunological Methods (BIOL 4000), Biotechnology at the Workbench (BIOL 4000), Honors Research (Microbiology) (BIOL 4700, BIOL 4701), and Undergraduate Research (Microbiology) (BIOL 3900)
6) CHEM 2132 with associated lab, PHYS 1101, PHYS 1102 and associated labs, and nine hours of mathematics including STAT 1221

MINOR IN BIOLOGY

A minor in Biology requires 18 hours, including the BIOL 2120 and BIOL 2130 sequence or the BIOL 1110 and BIOL 1115 sequence and associated labs (only one of these sequences is allowed), other courses at the 1000-level are acceptable; a total of three laboratory courses; at least one three-hour course (not necessarily with lab) at or above the 3000-level; and a GPA of at least 2.0 in the minor. Students are responsible for meeting all Biology course prerequisites and corequisites. At least six hours must be taken at UNC Charlotte.

MINOR IN BIOTECHNOLOGY

The Minor in Biotechnology Program is an interdisciplinary program housed within the College of Liberal Arts and Sciences and is designed for Biology and Chemistry majors interested in careers in the biotechnology field. To obtain a Minor in Biotechnology, students will complete a series of required and optional interdisciplinary courses offered in the Departments of Biology and Chemistry as well as complete a biotechnology-based internship in a regional government, industry, or academic laboratory. Students will have some flexibility to choose courses that reflect their specific area of emphasis within the biotechnology field.

Students must have at least an overall GPA of 3.0 and a 3.0 GPA in their major to participate in the program. The number of participating students will be determined by the number of available internship positions. Students will declare their intention to obtain this Minor by meeting with the Biotechnology Minor Program Head, typically at the beginning of their Junior year. A maximum of nine credit hours applied towards a major degree program can also be applied towards the Minor in Biotechnology.

TEACHER EDUCATION

The Department, in collaboration with the Department of Middle, Secondary, and K-12 Education, offers a program of biology and professional education courses to prepare students for 9-12 teacher licensure in North Carolina. Students interested in biology education should declare this interest during the first semester of the Sophomore year to obtain appropriate advising and prepare for formal admission to a teacher education program. Students should contact the secondary education advisor for teacher education within the Department, as well as the Office of Student Academic Services in the College of Education for
information about the requirements for admission to
teacher education, coursework, and the culminating
student teaching experience. Additional information
about teacher education may be found in the College
of Education section of this Catalog.

HONORS PROGRAM IN BIOLOGY

The Honors Program is a research program for
students majoring in Biology. Students interested in
this program and who meet the admissions
requirements should contact the Honors Coordinator
in the Department of Biology.

ADMISSION

Students are invited to participate in the program
during their Junior year by the Department Honors
Committee. To qualify, a student must have
completed 60 semester hours, including at least 15
hours at UNC Charlotte. At least 36 of the
completed hours must be in science and
mathematics. Students must have a 3.4 overall GPA
and a 3.4 GPA in Biology. An Honors advisor and a
supervisory committee are appointed for each
student.

REQUIRED COURSES

To graduate with Honors, a student must complete
BIOL 4601 (Honors Seminar), BIOL 4700 (Honors
Research I) and BIOL 4701 (Honors Research II)
with a B or above in each of the three courses.

CERTIFICATION REQUIREMENTS

A cumulative grade point average of 3.4 or greater
must be maintained. An Honors thesis is required
and the student must present the results of their
project in an appropriate forum.

COOPERATIVE EDUCATION PROGRAM

Students majoring in Biology may obtain practical
work experience while pursuing their degrees. The
Cooperative Education Program allows qualified
students either to alternate semesters of academic
study with semesters of full-time work experience or
to combine part-time academic study and part-time
work during the same semester. Students who are in
good standing with the University, have a minimum
overall GPA of 2.5, and have completed 30 credit
hours are eligible to apply. Transfer students are
required to complete 12 credit hours at the
University prior to application. The work experience
is arranged by the University Career Center and must
be approved by the Department of Biology.

Department of
Chemistry

Chair: B. Donovan-Merkert
Charles H. Stone Professors Emeritus: S. Burson, T.
DuBois
Professors Emeritus: C. Allen, S. Bush, J.
Crosthwiate, R. Gibson, J. Kuppers, T. Mattingly,
T. Walsh
Celanese Acetate Distinguished Professor: K.
Gonsalves
Professors: B. Donovan-Merkert, C. Ogle, D.
Rabinovich, J. Risley
Associate Professors: B. Brown, B. Cooper, M.
Etzkorn, D. Jones, J. Krueger, J. Poler, T.
Schmedake
Assistant Professors: M. Jones, J. Troutman
Undergraduate Coordinator and Lecturer: K. Asala
Lecturers: C. Carlin, R. Jew, J. Merkert, S. Michael,
M. Murphy, C. Striplin

Chemistry is a discipline fundamental to a wide
variety of careers in industry, research, and the allied
health fields. A strong foundation in chemistry is
necessary for careers in medicine, molecular biology,
biochemistry, industrial or government research,
pharmacy, high school teaching, and chemical
engineering. A background in chemistry may also be
useful for careers in chemical sales, industrial
management, business administration, and
environmental management.

DEGREE PROGRAMS

The Department of Chemistry offers two B.S. degree
programs approved by the American Chemical
Society (ACS), two non-
-ACS-certified B.S. degree
programs and a research-
based M.S. degree, which
provide the background
necessary for a career in
industry or for further
graduate studies in
chemistry and related
fields. In addition, a B.A.
degree in chemistry is
available for students who
plan to pursue a career in
chemical industry,
secondary education, or
professional studies in areas such as medicine,
dentistry, veterinary medicine, and optometry.
Degree requirements for the B.S., B.A., and
B.S./M.S. degree programs are available online at
chemistry.uncc.edu. A minimum chemistry GPA of
2.0 is required in the B.S. and B.A. degree
programs.

ACADEMIC ADVISING

Students are urged to consult with their academic
advisors every semester. Students should work with
their academic advisors to develop a long-range plan
for academic progress rather than merely selecting courses on a semester-by-semester basis.

OTHER PROGRAMS
Programs leading to careers in medical technology, pharmacy, and chemical engineering are available in cooperation with other institutions. Please see the “Preparation for Professional Schools” section in this Catalog for details.

BACHELOR OF SCIENCE IN CHEMISTRY

The B.S. degree is recommended for students planning to begin careers as chemists with the baccalaureate degree and those preparing for graduate study in chemistry.

COURSE REQUIREMENTS

A major in Chemistry leading to the ACS-certified B.S. degree consists of a minimum of 46 semester hours of chemistry, including CHEM 1251, 1251L, 1252, 1252L (or 1253L), 2131, 2131L, 2132, 2132L (or 2136L), 3111, 3141, 3141L, 3142, 3142L, 3695, 4111, 4121, 4133, 4165, 4695, 4696, and two semesters of 4900. (Note: Students may attempt CHEM 1251, 1251L, 1252, 1252L, 2131, 2131L, 2132, and 2132L a total of three times each. Withdrawing from the course after the Add/Drop deadline constitutes an attempt as does receiving any letter grade.) Students wishing to pursue the non-ACS-certified B.S. degree (minimum of 45 semester hours in chemistry) replace CHEM 4165 with two credits of 4000-level chemistry courses that must be approved by the Chemistry Department. Related work in mathematics and physics must include MATH 1241, 1242, PHYS 2101, 2101L, 2102, and 2102L and two additional math courses: MATH 2241, 2242, 2164, 2171, STAT 3128, or a Department-approved math course.

FOREIGN LANGUAGE REQUIREMENT

All students who earn a degree within the College of Liberal Arts and Sciences are required to demonstrate proficiency in the foreign language of their choice through the 1202 level. Proficiency in a foreign language can be demonstrated in the following ways: (1) completing the required coursework at UNC Charlotte; (2) completing three years of the same foreign language in high school through level three; (3) achieving a satisfactory score on the foreign languages placement test; (4) through approved transfer or transient credit earned at other accredited institutions; (5) by transferring in with an A.A., A.S. or A.F.A. degree; or (6) a combination of the above methods (e.g., placing out of or earning transfer or transient credit for 1201 and completing the 1202 course, completing 1201 and placing out of or earning transfer or transient credit for 1202).

This requirement will apply to all students entering any degree program within the College of Liberal Arts and Sciences Fall 2005 and beyond. Students enrolled in the University prior to Fall 2005 but not enrolled in a degree program in the College of Liberal Arts and Sciences Fall 2005 and beyond will be subject to this requirement.

Although all students in the College of Liberal Arts and Sciences are subject to the 1202 proficiency requirement, students in select departments will additionally have to satisfy a proficiency requirement through the intermediate (2000) level. All students in the College of Liberal Arts and Sciences should consult with their major department to determine whether or not they are required to complete the intermediate proficiency requirement as part of their major or related coursework. The B.S. degree in chemistry does not require proficiency in a foreign language at the intermediate level. However, all students majoring in the B.S. program are required to satisfy the UNC Charlotte General Education requirements.

It should also be noted that some graduate programs require a proficiency in a foreign language. Graduate programs in chemistry typically do not require proficiency in a foreign language.

BACHELOR OF SCIENCE WITH OPTION IN BIOCHEMISTRY

COURSE REQUIREMENTS

A major in Chemistry leading to the ACS-certified B.S. degree with an option in Biochemistry requires a minimum of 48 semester hours of chemistry, including CHEM 1251, 1251L, 1252, 1252L (or 1253L), 2131, 2131L, 2132, and 2132L a total of three times each. Withdrawing from the course after the Add/Drop deadline constitutes an attempt as does receiving any letter grade.) Students wishing to pursue the non-ACS-certified B.S. degree with an option in Biochemistry requirements.

A major in Chemistry leading to the ACS-certified B.S. degree with an option in Biochemistry requires a minimum of 48 semester hours of chemistry, including CHEM 1251, 1251L, 1252, 1252L (or 1253L), 2131, 2131L, 2132, and 2132L a total of three times each. Withdrawing from the course after the Add/Drop deadline constitutes an attempt as does receiving any letter grade.) Students wishing to pursue the non-ACS-certified B.S. degree with an option in Biochemistry requirements.

A major in Chemistry leading to the ACS-certified B.S. degree with an option in Biochemistry requires a minimum of 48 semester hours of chemistry, including CHEM 1251, 1251L, 1252, 1252L (or 1253L), 2131, 2131L, 2132, and 2132L a total of three times each. Withdrawing from the course after the Add/Drop deadline constitutes an attempt as does receiving any letter grade.) Students wishing to pursue the non-ACS-certified B.S. degree with an option in Biochemistry requirements.

A major in Chemistry leading to the ACS-certified B.S. degree with an option in Biochemistry requires a minimum of 48 semester hours of chemistry, including CHEM 1251, 1251L, 1252, 1252L (or 1253L), 2131, 2131L, 2132, and 2132L a total of three times each. Withdrawing from the course after the Add/Drop deadline constitutes an attempt as does receiving any letter grade.) Students wishing to pursue the non-ACS-certified B.S. degree with an option in Biochemistry requirements.

A major in Chemistry leading to the ACS-certified B.S. degree with an option in Biochemistry requires a minimum of 48 semester hours of chemistry, including CHEM 1251, 1251L, 1252, 1252L (or 1253L), 2131, 2131L, 2132, and 2132L a total of three times each. Withdrawing from the course after the Add/Drop deadline constitutes an attempt as does receiving any letter grade.) Students wishing to pursue the non-ACS-certified B.S. degree with an option in Biochemistry requirements.
2101, 2101L, 2102, and 2102L; and two additional math courses selected from MATH 2241, 2242, 2164, 2171, STAT 3128, or a department-approved math course. The Department of Chemistry recommends (but does not require) BIOL 2120, 2130, 2130L, and 3111.

FOREIGN LANGUAGE REQUIREMENT
All students who earn a degree within the College of Liberal Arts and Sciences are required to demonstrate proficiency in the foreign language of their choice through the 1202 level. Proficiency in a foreign language can be demonstrated in the following ways: (1) completing the required coursework at UNC Charlotte; (2) completing three years of the same foreign language in high school through level three; (3) achieving a satisfactory score on the foreign language placement test; (4) through approved transfer or transient credit earned at other accredited institutions; (5) by transferring in with an A.A., A.S. or A.F.A. degree; or (6) a combination of the above methods (e.g. placing out of or earning transfer or transient credit for 1201 and completing the 1202 course, completing 1201 and placing out of or earning transfer or transient credit for 1202).

This requirement will apply to all students entering any degree program within the College of Liberal Arts and Sciences Fall 2005 and beyond. Students enrolled in the University prior to Fall 2005 but not enrolled in a degree program in the College of Liberal Arts and Sciences Fall 2005 and beyond will be subject to this requirement.

Although all students in the College of Liberal Arts and Sciences are subject to the 1202 proficiency requirement, students in select departments will additionally have to satisfy a proficiency requirement through the intermediate (2000) level. All students in the College of Liberal Arts and Sciences should consult with their major department to determine whether or not they are required to complete the intermediate proficiency requirement as part of their major or related coursework. The B.S. degree in chemistry does not require proficiency in a foreign language at the intermediate level. However, all students majoring in the B.S. program (even those operating under the old general degree requirements) are required to satisfy the UNC Charlotte General Education language requirements.

It should also be noted that some graduate programs require a proficiency in a foreign language. Graduate programs in chemistry or biochemistry typically do not require proficiency in a foreign language.

BACHELOR OF ARTS IN CHEMISTRY

COURSE REQUIREMENTS
A major in Chemistry leading to the B.A. degree consists of a minimum of 32 semester hours of chemistry and must include the following core courses: CHEM 1251, 1251L, 1252, 1252L, 2125, 2131, 2131L, 2132, 2132L, 2141, 3111, 3695, 4695, and 4696. (Note: Students may attempt CHEM 1251, 1251L, 1252, 1252L, 2131, 2131L, 2132, and 2132L a total of three times each. Withdrawing from the course after the Add/Drop deadline constitutes an attempt as does receiving any letter grade.) Related work must include MATH 1241, 1242, and a complete sequence of physics courses selected from one of the following options: (A) PHYS 1101, 1101L, 1102, 1102L; (B) PHYS 2101, 2101L, 2102, 2102L; or (C) PHYS 2101, 2101L, 1102, 1102L. The remaining 3 chemistry elective hours may be selected from CHEM 3112, 3113, 3141, 3141L, 3142, 3142L, 4111, 4121, 4133, 4134, 4135, 4165, 4165L, 4166, 4167, 4171, 4175, and 4200. The B.A. curriculum can be tailored to fit the needs of students preparing for professional schools, a career in chemistry, and secondary teaching licensure.

PRE-PROFESSIONAL STUDIES
Students majoring in Chemistry who are planning future studies in medicine, dentistry, or other allied health professions should choose CHEM 4165 and take as electives BIOL 2120 and BIOL 2130. At least one additional biology course at the 3000 or 4000-level is recommended.

CAREERS IN CHEMICAL INDUSTRY
Students planning to pursue employment in chemical industry or other careers requiring a background in chemistry should choose CHEM 3113 (or 4111) as a chemistry elective.

BACHELOR OF ARTS
WITH AN OPTION IN MEDICAL TECHNOLOGY

3+1 PROGRAM
A student majoring in Chemistry may complete the departmental requirements for the B.A. degree in three years. Upon satisfactory completion of training in medical technology at Wake Forest University Baptist Medical Center School of Medical Technology, the student may receive a B.A. degree in Chemistry from UNC Charlotte. Gaining admission to an approved school of medical technology is the responsibility of the student. A maximum of 30 hours will be accepted from the school of medical technology. Four of these hours will apply toward the requirements for the major in Chemistry. The student must have at least a 2.0 grade point average, overall and in the major, at the end of the Junior year. The final 30 hours counted toward the degree and the last 12 hours counted toward the major prior to entering a school of medical technology must be taken at UNC Charlotte. The student may obtain information from the departmental advisor.
4+1 PROGRAM
Carolinas College of Health Sciences now accepts students who have earned a 4-year degree and have met prerequisites for entry into the medical technology program. The 4+1 option is available for students at any certified medical technology school. Additional information is available from the departmental advisor.

TEACHER LICENSURE IN CHEMISTRY
To meet North Carolina requirements to teach Chemistry at the secondary level (grades 9-12), students must complete a major in Chemistry and a minor in Secondary Education. The major in Chemistry leading to the B.A. degree consists of 32 hours in chemistry including: CHEM 1251, 1251L, 1252, 1252L, 2125, 2131, 2131L, 2132, 2132L, 2141, 3111, 3695, 4165, 4695, and 4696.

Note: Students may attempt CHEM 1251, 1251L, 1252, 1252L, 2131, 2131L, 2132, and 2132L a total of three times each. Withdrawing from the course after the Add/Drop deadline constitutes an attempt, as does receiving any letter grade.

Related work must include: MATH 1241, 1242, and a complete sequence of physics courses selected from one of the following options: (a) PHYS 1101, 1101L, 1102, 1102L; (b) PHYS 2101, 2101L, 2102, 2102L; or (c) PHYS 2101, 2101L, 1102, 1102L. In addition to completing all required chemistry, physics, and math courses for the B.A. in Chemistry degree, students must also complete CHEM 4165L, BIOL 1110 + 1110L, 1115, and two of the following three courses with corequisite laboratory: ESCI 1101 + 1101L, GEOL 1200 + 1200L, or GEOL 1210 + 1210L).

Students interested in pursuing teaching licensure should consult an undergraduate advisor in the College of Education's Teacher Education Advising and Licensure (TEAL) Office for admission requirements and a detailed planning sheet of their professional education coursework. Licensure applications also are the responsibility of TEAL.

MINOR IN CHEMISTRY
A minor in Chemistry consists of 23 semester hours of chemistry including CHEM 1251, 1251L, 1252, 1252L, 2131, 2131L, 2132, 2132L (or 2136L), 3111, and three additional semester hours at the 2000-level or above. (Note: Students may attempt CHEM 1251, 1251L, 1252, 1252L, 2131, 2131L, 2132, and 2132L a total of three times each. Withdrawing from the course after the Add/Drop deadline constitutes an attempt, as does receiving any letter grade.) A minimum GPA of 2.0 in the minor is required. Credit toward the 23 hour total will not be given for either CHEM 4695 or 4900. Special topics courses such as CHEM 3090 and CHEM 5090 may be included with prior departmental approval.

MINOR IN BIOTECHNOLOGY
The Minor in Biotechnology Program is an interdisciplinary program housed within the College of Liberal Arts & Sciences and is designed for Biology and Chemistry majors interested in careers in the biotechnology field.

COURSE REQUIREMENTS
To obtain a Minor in Biotechnology, chemistry majors must complete a minimum of 18 semester hours including: BIOL 3171, BIOL 4405, CHEM 4165, CHEM 4165L, CHEM 4166, CHEM 4167 or CHEM 4171, and at least one of the following biology courses: BIOL 4000, BIOL 4162, BIOL 4163, BIOL 4168, BIOL 4199, BIOL 4244, BIOL 4250, BIOL 4251, BIOL 4255, BIOL 4259, and complete a one semester biotechnology-based internship (BIOL 4405) in a regional government, industry, or academic laboratory.

Students must have at least an overall GPA of 3.0 and a 3.0 GPA in their major to participate in the program. The number of participating students will be determined by the number of available internship positions. Students will declare their intention to obtain this Minor by registering for the internship course, typically the beginning of their Senior year. A maximum of nine credit hours applied towards a major degree program can also be applied towards the Minor in Biotechnology.

HONORS PROGRAM IN CHEMISTRY
This program is intended primarily for chemistry majors. It is a research-oriented program. Details are available from the Chemistry Department and the department’s web page at chemistry.uncc.edu.

ADMISSION
Consideration for admission to the program may be initiated by the student or by any faculty member. The Honors Committee of the Chemistry Department will formally approve admission. The student will formally enter the Honors Program at the beginning or halfway through the student’s Senior year; however, students should inquire about the Honors Program prior to the end of their Junior year.

COURSES
Independent research and seminars.

CERTIFICATION REQUIREMENTS
To obtain a degree with Honors in Chemistry, a student must successfully complete at least three
hours of independent research at the Honors level, one semester of the Senior seminar at the Honors level, and prepare and successfully defend an Honors thesis based on research.

COOPERATIVE EDUCATION PROGRAM

Students majoring in Chemistry may obtain practical work experience in chemistry before graduation by participating in the Chemistry Cooperative Education Experience any time after the completion of Sophomore year and CHEM 2132. A minimum GPA of 2.5 overall and 2.5 in chemistry is required. At least two semesters of full-time work assignments on alternating semesters must be completed concurrent with enrollment in CHEM 3500. Advisors will assist students to design a schedule that accommodates both work assignments and the upper-division chemistry courses which are normally offered on alternate semesters. Experiences are arranged in coordination with the University Career Center.

EARLY-ENTRY INTO M.S. IN CHEMISTRY PROGRAM

The Early-Entry program leads to completion of all requirements for the B.S. and M.S. degrees in only five academic years and one or two summers. In this program, students complete requirements for the B.S. degree and begin graduate coursework and research in their Senior, or fourth, year. The Chemistry Early-Entry program is accelerated; that is, up to six credit hours may be taken at the graduate level and double counted towards both the undergraduate and graduate degrees. Students may leave the program after four years with the B.S. degree, or they may complete an additional academic year and summer of full-time study and research to earn both the B.S. and M.S. degrees in Chemistry.

ADMISSION REQUIREMENTS

B.S. students may be admitted to the M.S. program without entrance examinations if they have a 3.2 overall GPA and at least 3.0 in their chemistry, mathematics, and physics courses, have completed the standard B.S. curriculum through at least Physical Chemistry, and have taken the Graduate Record Examination. The application process and all required documentation (e.g., test scores, transcripts, letters of recommendation) are the same for Early-Entry students as for other applicants to the program. The status of the accepted early-entry applicant is provisional pending the award of the baccalaureate degree. Early-Entry M.S. students will be expected to complete the requirements for the undergraduate degree by the time they have completed 15 hours of graduate work. Students should consult with the Chemistry M.S. Graduate Coordinator about their eligibility for this program and to discuss requirements for selection of a research advisor during their Junior year.
Cognitive Science
cognisci.uncc.edu

Director: P. Goolkasian
Adjunct Professors: B. Chu, B. Davis, P. Foos, T. Jackson, Y. Kakad, Z. Ras, W. Ribarsky, J. Xiao

Cognitive science is the interdisciplinary study of intelligent systems, both human and artificial. It aims to understand the processes and representations that are the basis for intelligent actions. Research questions center on cognition, memory, problem solving, vision, and their computational embodiment. The interdisciplinary program in Cognitive Science is designed to provide students with an introduction to the questions of cognitive science and the variety of approaches used to answer those questions, including approaches drawn from Psychology, Computer Science, Philosophy, Linguistics, and cognitive neuroscience. Students completing a minor will add an interdisciplinary perspective to the training received in their major, better preparing them for employment or further study in a variety of sciences and social sciences.

MINOR IN COGNITIVE SCIENCE

The minor in cognitive science is awarded only to students completing an undergraduate major at UNC Charlotte. A minor in Cognitive Science consists of 18 semester hours: three hours of required coursework, nine hours of restricted electives outside of the student’s primary major, and the remaining six hours of unrestricted electives. To qualify for the Cognitive Science minor, students must have a grade point average of at least 2.0 in courses applied to the minor. Because additions and deletions of courses may be made to correspond to current University offerings, students are encouraged to consult with the Director as they plan their schedules.

A graduate certificate in Cognitive Science is also offered through the Graduate School. See the UNC Charlotte Graduate Catalog for more details.

Department of Communication Studies
communications.uncc.edu

Chair: S. Long
Professor: B. Hill, A. Freitag, D. Kruckeberg, R. Leeman
Associate Professors: J. Crane, C. Davis, D. Grano, L. Gossett, S. Long, C. Scott, C. Wolf Johnson
Assistant Professors: J. Cho, M. Jiang, M. Quinlan, A. Stokes, J. Tullis
Senior Lecturers: M. Dixon-Brown, S. Hanson, C. Leeman

The Communication Studies program offers training in the practice and theory of communication across a variety of contexts. Among these are public communication, health communication, organizational communication, public relations, and mass communication. In addition, students examine specific types of communication such as argumentation, debate, and persuasion.

BACHELOR OF ARTS

ADMISSION REQUIREMENTS

Students matriculated at UNC Charlotte and planning to change to or declare Communication Studies as their major must have an overall GPA of at least 2.0, met the foreign language requirement for the major, and received no grade less than C in COMM 1101, COMM 2100, and either STAT 1220 or STAT 1222. Students may attempt COMM 2100 a maximum of two times.

Transfer students from other institutions must meet all general requirements for admission to the University. Acceptance into the Communication Studies major requires that they have met the foreign language requirement for the major, and received no grade less than a C in COMM 1101 or its equivalent, COMM 2100 or its equivalent, and either STAT 1220 or STAT 1222. Students may attempt COMM 2100 a maximum of two times.

Matriculated and transfer students who do not meet requirements for admission to the program because of special circumstances may petition the Department of Communication Studies for acceptance into the program.

PRE-COMMUNICATION STUDIES

Students who apply for the Communication Studies major are initially classified as Pre-Communication Studies majors until they meet the following requirements: cumulative GPA of 2.0 or above; successful completion of a foreign language course at the 2000-level or higher in a Latin alphabet language or American Sign Language or 1202 in a non-Latin alphabet language; and successful (grade C or above) completion of COMM 1101, COMM 2100, and either STAT 1220 or STAT 1222.
Students matriculated at UNC Charlotte and planning to change or declare Pre-Communication Studies as their major must have an overall GPA of at least 2.0.

### DEGREE REQUIREMENTS

The program leading to the Bachelor of Arts degree in Communication Studies is a 120 semester hour program, including 54 hours in CORE, concentration, and related coursework requirements in the major, and 32-53 hours in General Education requirements for the baccalaureate degree.

Communication Studies majors must also complete either a 2000-level course in a foreign language course that uses the Latin Alphabet (e.g., French, German, Italian, Portuguese, Spanish) OR a 1202-level course in a language that is not written in the Latin Alphabet (e.g., Arabic, Chinese, Greek, Japanese, Russian). Intermediate American Sign Language is accepted. Non-native English speakers may complete the foreign language requirement by passing ENGL 1101 and ENGL 1102 or the equivalent.

### CORE COURSE REQUIREMENTS (24 hours)

All students complete 24 hours of CORE requirements designed to provide a thorough understanding of fundamental communication processes. The CORE requirements are structured into four major categories:

**General Theory/Skills (12 hours)**
- COMM 1101 Public Speaking (3)
- COMM 2100 Intro to Communication Theory (3)
- COMM 2101 Introduction to Rhetorical Theory (3)
- COMM 3101 Persuasion (3)

**Research Methodology (6 hours)**
- STAT 1222 Introduction to Statistics (3)
- COMM 3100 Communication Research Methods (3)

**Macro-Context (3 hours)**
- COMM 3120 Communication & Mass Media (3) or
- COMM 3130 Communication & Public Advocacy (3) or
- COMM 3141 Organizational Communication (3)

**Micro-Context (3 hours)**
- COMM 2103 Argumentation & Debate (3) or
- COMM 2105 Small Group Communication (3) or
- COMM 2107 Interpersonal Communication (3)

### B.A. CONCENTRATIONS

#### CONCENTRATION REQUIREMENTS (12-24 hours)

Students must also complete 12-24 hours of course work in a specific concentration of study. Courses that are required within a particular concentration or used as electives within the concentration cannot simultaneously be used to fulfill CORE requirements. The concentrations are designed to provide students with the opportunity to pursue more extensive study in the communication context most relevant to their professional and social goals. Five concentrations of study are offered:

**HEALTH COMMUNICATION CONCENTRATION (21 hours)**

The Health Communication concentration is designed for students interested in studying the relationship between communication and the quality of health care received by the patients. Emphasis will be placed on the promotion and maintenance of health, the prevention and treatment of illness, and the improvement of the health care system through effective communication.

Students choosing this concentration complete the following courses:

- COMM 3051 Topics in Health Communication (3)
- COMM 3115 Health Communication (3)
- COMM 4115 Seminar in Health Communication (3)
- COMM 4410 Professional Internship (3)

Students select nine (9) hours from the following:

- ANTH 3124 Food, Nutrition and Culture
- ANTH 3122 Culture, Health and Disease
- COMM 3051 Topics in Health Communication*
- NURS/GRNT 3115 Health and the Aging Process
- HLTH 2101 Healthy Lifestyles
- KNES 3260 Nutrition and Health Fitness
- NURS 3104 Nutrition in Health and Illness
- NURS 4000 Topics in Nursing*
- NURS/WGST 4191 Women’s Health Issues
- PHIL 3230 Healthcare Ethics
- PSYC 2160 Intro to Health Psychology
- PSYC 3130 Social Psychology
- SOCY 4130 Sociology of Health and Illness
- SOCY 4168 Sociology of Mental Health & Illness

*with approval of advisor

**MASS MEDIA CONCENTRATION (12 hours)**

The Mass Media concentration is designed for students interested in the development and critical analysis of the media as a cultural force. Contemporary issues in media criticism are explored. Students may also receive limited exposure to media production.

Students choosing this concentration complete the following courses:

- COMM 3120 Communication and Mass Media (3)
COMM 4101  Media and the Law (3)

Students will complete six hours selected from the following courses:

ARTH 3393  History of Photography (3)
COMM 2120  Black Images in the Media (3)
COMM 3052  Topics in Mass Media (3)
COMM 3121  Mass Communication and Society (3)
COMM 3125  New Media for Communications (3)
COMM 3126/INTL 3115  Globalization and Digital Media (3)
COMM 3127  Global Media (3)
COMM 3880  Independent Study (1-3)*
COMM 4102  Federal Interpretation of the First Amendment (3)
COMM 4410  Professional Internship (3)*

COMM 4102  Federal Interpretation of the First Amendment (3)
COMM 4410  Professional Internship (3)*

COMMUNICATION AND PUBLIC ADVOCACY CONCENTRATION (12 hours)
The Communication and Public Advocacy concentration is designed for those students desiring a well-developed background in the use, theory, construction, and analysis of public messages. The course of study provides training in individual public communication skills and provides a foundation for the analysis and evaluation of advocacy discourse.

All students choosing this concentration complete the following courses:

COMM 2102  Advanced Public Speaking (3)
COMM 2103  Argumentation & Debate (3)
COMM 3130  Communication & Public Advocacy (3)

Students select three hours from the following:

COMM 3051  Topics in Health Communication (3)
COMM 3052  Topics in Mass Media (3)
COMM 3054  Topics in Organizational Comm (3)
COMM 3055  Topics in Public Relations (3)
COMM 3131  African-American Oratory (3)
COMM 3403  Debate Practicum (2)**
COMM 3880  Independent Study (1-3)*
COMM 4410  Communication Internship (3)*

* with approval of advisor
**may be repeated but no more than 3 hours will apply to meeting this elective requirement

PUBLIC RELATIONS CONCENTRATION (24 hours)
The Public Relations concentration is designed to provide students with a general background in public relations. Students examine both the theory and practice of public relations.

Students choosing this concentration complete the following courses:

JOUR 2100  Language Craft (2)
JOUR 2160  Introduction to Journalism (3) (W)
COMM 2145  Principles of Public Relations (3)
COMM 3245  Public Relations Writing (3)
COMM 3246  Public Relations Strategy (3)
COMM 4145  Communication Campaigns (3)
COMM 4410  Professional Internship (3)

Students select at least four hours from the following:

ANTH 4120  Intercultural Communication (3)
COMM 2105  Small Group Communication (3)
COMM 2107  Interpersonal Communication (3)
COMM 3054  Topics in Organizational Comm (3)
COMM 3160  Business Communication (3)
COMM 3880  Independent Study (1-3)*
COMM 4410  Professional Internship (3)*

ENGL 2116  Technical Communication (3)
PSYC 2171  Intro to Industrial/Org Psych (3)
PSYC 3114  Motivation (3)
SOCY 4112  Sociology of Work (3)

* with approval of advisor

ORGANIZATIONAL COMMUNICATION CONCENTRATION (12 hours)
The Organizational Communication concentration is designed for students whose careers will benefit from an understanding of the communication processes that occur within organizational contexts. Students explore both the theory and practice of organizational communication.

All students choosing this concentration complete the following courses:

COMM 3141  Organizational Communication (3)
COMM 3142  Applications in Org. Comm (3)
COMM 4141  Advanced Org. Communication (3)

Students select three hours from the following:

ANTH 4120  Intercultural Communication (3)
COMM 2105  Small Group Communication (3)
COMM 2107  Interpersonal Communication (3)
COMM 3054  Topics in Organizational Comm (3)
COMM 3160  Business Communication (3)
COMM 3880  Independent Study (1-3)*
COMM 4410  Professional Internship (3)*

ENGL 2116  Technical Communication (3)
PSYC 2171  Intro to Industrial/Org Psych (3)
PSYC 3114  Motivation (3)
SOCY 4112  Sociology of Work (3)

* with approval of advisor

PUBLIC RELATIONS CONCENTRATION (24 hours)
The Public Relations concentration is designed to provide students with a general background in public relations. Students examine both the theory and practice of public relations.

Students choosing this concentration complete the following courses:

JOUR 2100  Language Craft (2)
JOUR 2160  Introduction to Journalism (3) (W)
COMM 2145  Principles of Public Relations (3)
COMM 3245  Public Relations Writing (3)
COMM 3246  Public Relations Strategy (3)
COMM 4145  Communication Campaigns (3)
COMM 4410  Professional Internship (3)

Students select at least four hours from the following:

ANTH 4120  Intercultural Communication (3)
COMM 2102  Advanced Public Speaking (3)
COMM 3055  Topics in Public Relations (3)
COMM 3141  Organizational Communication (3)
COMM 3880  Independent Study (3)*
COMM 4101  Media and the Law (3)
COMM 4141  Advanced Organization Communication (3)

COMM 4147  International Public Relations (3)
COMM 4410  Professional Internship (3)*
ENGL 2116  Technical Communication (3)
JOUR 3160  Advanced News Reporting and Writing (3)
JOUR 3161  News Editing (3)
JOUR 3162  Feature Writing (3)

* with approval of advisor

RELATED COURSEWORK (6-18 hours)
All students in the Mass Media, Organizational Communication, and Public Advocacy tracks must complete 18 hours of related course work excluding any courses applied to Core Requirements or Track requirements. Students in the Health Communication track must complete nine hours of related course work excluding any courses applied to Core Requirements or requirements within that track. Students in the Public Relations track must complete six hours of related coursework, excluding any courses applied to Core Requirements or requirements within that track. All related course work must be approved by the student’s advisor. An approved second major or a minor may be used to satisfy this requirement.

CERTIFICATE IN INTERNATIONAL PUBLIC RELATIONS

Students electing the certificate in International Public Relations must be enrolled as majors in the Public Relations track. In addition to completing the standard core and required track courses, students must complete the following elective track work, related course work, and language requirements:

ELECTIVE TRACKWORK (6 credit hours)
Students must complete COMM 4147, International Public Relations and either COMM 4410, Professional Internship (with international focus) or ANTH 4120, Intercultural Communication.

RELATED COURSEWORK (9 credit hours)
Students may either complete a semester of study abroad earning at least 9 credit hours at a non-American university OR complete an additional 9 credit hours of related course work selected from the following courses. At least 3 credit hours must be taken at the 3000-level or above.

ANTH 2010  Topics in Ethnography (3)
ANTH 2111  Peoples of Africa (3)
ANTH 2115  Culture and Society in the Middle East (3)
ANTH 2116  Contemporary Latin America (3)
ANTH 4120  Intercultural Communications (3)*
COMM 3127  Global Media (3)
HIST 2200  Asian Civilization (3)
HIST 2201  History of Modern Asia / INTL 2201 Introduction to Asian Studies (3)
HIST 2207  Modern Latin America / INTL 2401 Introduction to Latin American Studies (3)
HIST 2211  Modern Africa / INTL 2101 Introduction to African Studies (3)
HIST 3116  Twentieth Century Europe / INTL 2301 Introduction to European Studies (3)
INTL 1101  Introduction to International Studies (3)
INTL 3000  Topics in International Studies (3)
POLS 1130  Comparative Politics (3)
POLS 1150  International Politics (3)
POLS 3141  European Politics (3)
POLS 3143  African Politics (3)
POLS 3144  Latin American Politics (3)
POLS 3148  Chinese Politics (3)
POLS 3164  U.S.-Latin American Relations (3)
POLS 3165  East Asia in World Affairs (3)
POLS 3169  African International Relations (3)
SPAN 3029  Cultural Dimensions of Doing Business with Spanish-Speaking Countries (3)

FOREIGN LANGUAGE REQUIREMENT
In addition to department and university foreign language requirements, students must complete one additional 2000-level foreign language course beyond the departmental foreign language requirement. The following courses would meet this requirement:

French 2202 or 2210
German 2202 or 2210
Spanish 2202 or 2205
Italian 2202
Portuguese 2202
Japanese 2201
Russian 2201

International, non-native English speakers must score a minimum of 550 on the TOEFL, a minimum of 85 on the MELAB.

CERTIFICATE IN LEADERSHIP STUDIES

Students electing the certificate in Leadership Studies may be enrolled in any undergraduate major. In addition to completing the standard core and required track courses for their majors, students must complete 18 hours of course work as listed:

REQUIRED COURSES (9 credit hours)
COMM 3135  Leadership Theory and Group Dynamics (3)
COMM 3136  Leadership, Service and Ethics (3)
COMM 4410  Professional Internship (3)

ETHICS COURSES (3 credit hours)
One course from the following:
PHIL 3210  Ethical Theory (3)
PHIL 3340  Business Ethics (3)
POLS 3175  Philosophy of Law (3)

ELECTIVE COURSES (6 credit hours)
AERO 3101  Leadership and Management (3)
AERO 3102  Defense Administration and Military Management (3)
COMM 2105  Small Group Communication (3)
COMM 2107  Interpersonal Communication (3)
EXER 1231  Introduction to Outdoor Adventure (1)
EXER 1235  Challenge Course Activities (1)
EXER 2232  Wilderness Trip Leading (1)
EXER 2234  Challenge Course Facilitation (1)
MGMT 3140  Management and Organizational Behavior (3)
MGMT 3287  Managerial Leadership (3)
PSYC 2171  Introduction to Industrial/Organizational Psychology (3)
POLS 3112  The Presidency (3)
POLS 4110  North Carolina Student Legislature (3)

MINOR IN COMMUNICATION STUDIES

The minor in Communication Studies consists of 18 semester hours of COMM courses, including COMM 1101 (Public Speaking) and COMM 2100 (Communication Theory), and at least 6 credit hours taken at the 3000-level and above. Students must attain an overall GPA of 2.0 in all coursework within the minor.

Students matriculated at UNC Charlotte and planning to declare Communication Studies as their minor must have an overall GPA of at least 2.0.

MINOR IN JOURNALISM

The minor in Journalism provides an introduction to journalism areas such as writing, editing, feature writing, layout and design, and related communication and media issues. The minor consists of 20 hours of coursework including:

JOUR 2100  Language Craft (2)
JOUR 2160  Introduction to Journalism (3) (W)
JOUR 3160  Advanced News Reporting and Writing (3)
JOUR 3162  Feature Writing (3)

The nine (9) hours of elective coursework needed to complete the minor may be chosen from:

ENGL 4204  Expository Writing (3)
ENGL 4182  Information Design & Digital Publishing (3)
JOUR 3050  Topics in Journalism (3)
JOUR 3161  News Editing (3)
JOUR 3163  Visual Communication in the Media (3)
JOUR 3401  Journalism Practicum (2)
ARTG 2181  Graphic Design I (3)
ARTG 3183  Graphic Design II (3)
ARTT 2191  Photographic Media I (3)
COMM 3120  Communication and the Mass Media (3)
COMM 3127  Global Media (3)

*With approval of advisor*

With their advisor's approval, students in the Communication Studies major may count as related course work any course used to fulfill requirements for the Journalism minor as long as that course is not simultaneously being used to fulfill either CORE or TRACK requirements of the major.
Department of Criminal Justice and Criminology
criminaljustice.uncc.edu

Chair and Professor: B. Bjerregaard
Professors Emeritus: J.D. Hirschel
Professors: B. Arrigo, R. Brame, P. Friday, V. Lord
Associate Professors: K. Blevins, A. Blowers, C. Coston, L. Exum, J. Hartman, J. Kuhns, M. Turner
Assistant Professor: S. Listwan
Lecturers: S. Hodge, J. Marinello, K. Nicolaides

The undergraduate program in Criminal Justice addresses issues confronting the entire criminal justice system, from the nature of crime and delinquency, to society’s varied responses to it. A major in Criminal Justice provides a broad educational background emphasizing social science and basic knowledge regarding crime and social control. Students at UNC Charlotte learn about crime as a social problem, develop a critical understanding of the criminal justice system, address problems faced by the victim, and study the principles involved in achieving planned change.

Undergraduate students pursuing the academic study of the criminal justice system, a career in the criminal justice field, or preparation for graduate study may select the criminal justice curriculum leading to a Bachelor of Arts degree. Transfer students must complete 37 hours of criminal justice course work unless they have completed the equivalent of STAT 1222 (or STAT 1220 or 1221), LACS 2201, CJUS 1100, CJUS 2000, CJUS 2102, CJUS 2120, or CJUS 2154 at another institution. In this case, credit will be awarded for courses completed with a grade of C of above. Students may enroll in the B.A. program on either a full-time or part-time basis. Evening classes are scheduled to accommodate part-time students. All students must take and pass an upper-level foreign language conversation course.

Transfer students who have an A.A.S. degree in Criminal Justice will receive General Education exemption and may be awarded up to 15 semester hours of credit for criminal justice coursework completed with a grade of C or above. However, students are required to complete an additional 15 semester hours of upper-level criminal justice coursework after an evaluation of the transcript.

Current UNC Charlotte students interested in declaring a major in Criminal Justice should submit a Declaration of Program form and unofficial transcript to the department for evaluation. Completion of CJUS 1100 and STAT 1222, with a C or above in both courses, and a GPA of 2.0 or higher are required to become a major. Criminal Justice majors must declare an approved minor or second major to graduate with a Criminal Justice degree.

The department also offers a minor in Criminal Justice and a Master of Science degree program in Criminal Justice. Please see the UNC Charlotte Graduate Catalog for details on the M.S. degree.

BACHELOR OF ARTS IN CRIMINAL JUSTICE

A major in Criminal Justice requires STAT 1222 (or 1220 or 1221) and 31 semester hours of criminal justice courses, including CJUS 1100 (Introduction to Criminal Justice), CJUS 3100 (Criminal Justice Theory), CJUS 3101 (Research Methods in Criminal Justice) or its equivalent (SOCY 4155/4155L, POLS 2220, or PSYC 2101/2103), and one course from each of the following areas:

LAW ENFORCEMENT AREA
CJUS 2000  Introduction to Law Enforcement
CJUS 3141  Law Enforcement Behavioral Systems
CJUS 3200  Security and Loss Prevention

CORRECTIONS AREA
CJUS 2154  Introduction to Corrections
CJUS 3150  Community Corrections
CJUS 3151  Institutional Corrections
CJUS 3153  Juvenile Corrections

LEGAL AREA
CJUS 3102  American Criminal Courts
CJUS 3110  Criminal Justice and the Law
CJUS 3111  Criminal Procedure
CJUS 3121  Juvenile Law
CJUS 3152  Correctional Law

A minimum of a C average in all criminal justice coursework and at least a C in CJUS 1100, 3100, 3101, (or SOCY 4155/4155L, POLS 2220, or PSYC 2101/2103), and STAT 1222 (or 1220 or 1221) are required.

Criminal Justice majors must also satisfy the foreign language requirement by completing the 2201 level course (or course with emphasis on conversation) in a modern language other than English that uses the Latin alphabet (e.g., French, German, Italian, Portuguese, Spanish) OR the 1202 course (or the
equivalent) in a modern language that does not use the Latin alphabet (e.g., Arabic, Chinese, Greek, Japanese, Russian). Approved American Sign Language courses may be substituted with permission of the department prior to enrolling in such courses.

While not required, students are encouraged to participate in internship programs available through the department. Internships provide opportunities to combine theory and practice in a realistic setting, and to make more judicious career decisions. Consult the Department of Criminal Justice and Criminology’s Academic Advisor for a suggested schedule to complete the B.A. degree with a major in Criminal Justice.

**Suggested Curriculum: B.A. in Criminal Justice**

### First Year

#### Fall Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tr>
<td>CJUS 1100</td>
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<tr>
<td>ENGL 1101</td>
<td>3</td>
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<td>LBST 1000-series</td>
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<td>MATH 1100</td>
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**Spring Semester**

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<thead>
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<th>Course</th>
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<tr>
<td>Elective Course with (O) goal</td>
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</tr>
<tr>
<td>ENGL 1102</td>
<td>3</td>
</tr>
<tr>
<td>Science (with Lab)</td>
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<tr>
<td>Social Science requirement</td>
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<tr>
<td>STAT 1222 (or 1220 or 1221)</td>
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### Second Year

#### Fall Semester

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<thead>
<tr>
<th>Course</th>
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<td>3</td>
</tr>
<tr>
<td>Science (no lab)</td>
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</tr>
<tr>
<td>LACS 1201</td>
<td>3</td>
</tr>
<tr>
<td>LBST 2101</td>
<td>3</td>
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<tr>
<td>Elective course with (W) goal</td>
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**Spring Semester**

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<thead>
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<th>Course</th>
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</thead>
<tbody>
<tr>
<td>CJUS 2102 or 2120</td>
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</tr>
<tr>
<td>CJUS 2154 (or other Corrections course)</td>
<td>3</td>
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<tr>
<td>LACS 1202</td>
<td>4</td>
</tr>
<tr>
<td>LBST 2102</td>
<td>3</td>
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<tr>
<td>LBST 2210-series</td>
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**General Education Goals complete**

### Third Year

#### Fall Semester

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<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CJUS 3100</td>
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</tr>
<tr>
<td>CJUS 3102 (or other Courts course)</td>
<td>3</td>
</tr>
<tr>
<td>LACS 2201 (or other Conversation course)</td>
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<td>2nd Major/Minor Requirement</td>
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#### Spring Semester

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<td>CJUS Elective</td>
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<td>Elective</td>
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**Criminal Justice requirements complete**

### Fourth Year

#### Fall Semester

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<td>CJUS Elective</td>
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<td>CJUS Elective</td>
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<td>2nd Major/Minor Requirement</td>
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<tr>
<td>2nd Major/Minor Requirement</td>
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</table>

#### Spring Semester

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<thead>
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<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
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<tr>
<td>2nd Major/Minor Requirement</td>
<td>3</td>
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<tr>
<td>2nd Major Requirements/Elective</td>
<td>3</td>
</tr>
<tr>
<td>2nd Major Requirements/Elective</td>
<td>3</td>
</tr>
<tr>
<td>2nd Major Requirements/Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

**B.A. requirements complete**

**MINOR IN CRIMINAL JUSTICE**

A minor in Criminal Justice is available to all undergraduates except Criminal Justice majors and requires 18 approved semester hours including: CJUS 1100 and 3100, and 12 semester hours of upper-division criminal justice electives (3000- and 4000-level courses). A GPA of at least 2.0 is required to graduate, including at least a grade of C in CJUS 1100 and 3100.
Department of English

Chair: M. Pereira
Bonnie E. Cone Distinguished Professor in Teaching: B. Davis

BACHELOR OF ARTS IN ENGLISH

A major in English leading to the B.A. degree consists of 33 semester hours of coursework beyond the General Education requirements. Required courses include ENGL 2100 and 3100, which are prerequisites for any other 3000- or 4000-level literature courses; three courses in American and British Literature surveys selected from ENGL 3300 or 2400 (but not both), ENGL 3301 or 2401 (but not both), and ENGL 3302 or 2402 (but not both); one course in applied linguistics (above the 2000-level); and five elective courses in English, two of which may be at the 2000-level and two of which must be at the 4000-level. A GPA of 2.0 or above in all English courses above the 1000-level is required for graduation.

The English major also requires completion of COMM 1101; competency in a foreign language at the intermediate level, certified either through placement exam or coursework (2000-level); and either a minor established at UNC Charlotte or an individually designed course of study consisting of a minimum of 18 semester hours in coursework selected from English and/or other departments, approved by the student’s English Department advisor and undergraduate coordinator. Students with a second major in another department will be considered to have satisfied the minor requirement.

INTERNSHIPS
Internships in the community and at the University are available for upper-level English majors. Contact the Department of English for further information.

CLASS ATTENDANCE POLICY
Students are expected to attend all scheduled Department of English classes. Specific attendance policy for each section is left to the teacher.

AWARDS
The Department gives awards each spring (usually to Senior English majors). These include: the Margaret Bryan Award for excellence in scholarship; the Gray’s Creative Writing Awards; the Julian Mason Award for excellence in the study of Southern literature; the Glenn Burne award for excellence in Children’s Literature Scholarship; the Garland Keever Memorial Award for humorous writing; the Kay Horne Public Service Award; The Blair Rudes Award for Excellence in Linguistics; and the Robert M. Wallace Award for excellence in the study of English. The Department also sponsors the Loch Walker Writing Competition annually.

WRITING ASSISTANCE
The Writing Resources Center and The Writing Project are available to students who want to become more effective writers, as well as to those studying to be K-12 writing teachers, respectively. For more information, please see the Student Life, Resources, and Services section of this Catalog.

MINOR IN ENGLISH

Students who do not major in English but plan to take courses in English, for pleasure or in order to build their skills with language, should consult the Department about the possibility of a minor in English, Technical/Professional Writing, or African-American Literature.

A minor in English consists of 18 hours in English at the 2000-level or above. Students must take ENGL 2100 and 3100 and at least six additional hours in courses at the 3000-level or above to complete the minor. A GPA of 2.0 or above in all English courses taken is required for graduation.

MINOR IN DIVERSE LITERATURES AND CULTURAL STUDIES

The minor in Diverse Literatures and Cultural Studies provides students with an opportunity to study literatures and cultures in more contexts and forms of diversity. Students explore the ways in which the
academic study of diverse literatures and cultures is linked to other disciplines that focus on particular aspects of diversity. Students may select from a wide range of courses in African American Literature and Culture, Africana Studies, American Indian Literature and Culture, Anthropology, Latino/Latina Literature and Culture, Women’s and Gender Studies, and History.

A minor in Diverse Literatures and Cultural Studies consists of 18 hours at the 2000-level and above. Students must take ENGL 2100 (Writing About Literature), and they must select one course from the following:

- ENGL 2301 Introduction to African American Literature
- ENGL 3050 Introduction to American Indian Literary Studies
- ENGL 3050 U.S. Latino/Latina Writers
- ENGL 4104 Multicultural Children’s Literature

Students must also take one additional course in Diverse Literatures and Cultural Studies offered by the Department of English.

For the remaining 9 hours, students select courses pertaining to topics in Diverse Literatures and Cultural Studies from an approved distribution list (see below). Other courses that do not appear on the list, especially topics courses and independent study courses, may be approved if they pertain to diversity-related topics.

Listed below are elective courses that are approved for the minor. The topics courses (2050 / 3050 / 4050) are approved with the permission of the undergraduate coordinator.

**ONE COURSE IN AFRICAN AMERICAN LITERATURE**
- ENGL 3050 Early Black American Literature
- ENGL 3157 Twentieth-Century Black American Literature: Prose
- ENGL 3158 Gender in African American Literature
- ENGL 3159 African American Poetry

**ONE COURSE IN GENDER AND SEXUALITY**
- ENGL 4002 Women and Literature
- ENGL/AMST 4050 Multicultural Women Writers Imagining America
- ENGL 4050 Modernism, Gender, and Sexuality
- HIST 2151 US Women’s History since 1877
- WGST 2050 Introduction to Lesbian and Gay Studies
- WGST 2050 Women of the Middle East
- WGST 2120 African American Women
- WGST 4050 Queer Theory
- WGST 4120 Women’s Studies International

**ONE ADDITIONAL COURSE IN A DIVERSITY SUBJECT AREA**
- AFRS 2105 Black Images in the Media in the US
- AFRS 2120 African American Women
- AFRS 2160 The African American Experience through Civil War

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**AFRS 2161 The African American Experience: Civil War**
- AFRS 2215 Black Families in the United States
- AFRS 3101 Perspectives on Race and Ethnicity in the US
- AFRS 3158 Gender and African-American Literature
- AFRS 3179 African American Political Philosophy
- AFRS 3240 African Americans and the Legal Process
- AFRS 3280 Blacks in Urban America
- AMST 3000 Appalachian Literature and Culture
- ANTH 2112 North American Indians
- ENGL 3050 American Indian Fiction and Community
- ENGL 3050 American Indian Women’s Literature
- ENGL 3050 Jewish Identity and the Graphics Novel
- ENGL 3050 Linguistic Diversity in North America
- ENGL 4050 American Indian and Children’s Literature
- ENGL 4111 Ancient World Literatures
- ENGL 4112 Modern World Literatures
- HIST 2000 Topics in US History: American Indian History 1400-Present
- HIST 2000 Topics in US History: Latino/a History
- HIST 2150 U.S. Women’s History to 1877
- HIST 2161- African American History Survey
- HIST 2162 African American History Survey

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**MINOR IN CHILDREN’S LITERATURE AND CHILDHOOD STUDIES**

The minor in Children’s Literature and Childhood Studies (CLCS) provides students with an opportunity to study children’s literature within the context of the interdisciplinary field of childhood studies. The minor recognizes that the academic study of children’s literature is intrinsically linked to other disciplines that focus on particular aspects of childhood. In addition to taking courses in children’s literature, students participating in this minor select courses pertaining to such child-related topics as language acquisition, child psychology, education, juvenile law, pediatric nursing, and the history and culture of childhood.

A minor in Children’s Literature and Childhood Studies consists of 18 hours at the 2000-level and above. Students must take ENGL 3103 (Children’s Literature) and at least two other children’s literature courses offered by the Department of English. For the remaining 9 hours, students will select courses pertaining to child-related topics from an approved list. At least 6 hours must be in courses that do not focus on children’s literature. Other courses that do not
appear on the list, especially topics and independent study courses, may be approved if they pertain to child-related topics. Students majoring in Elementary Education may not apply any of their required professional education courses toward this minor. Listed below are the courses that are approved for this minor:

**CHILDREN’S LITERATURE COURSES**
- ENGL 3103 Children’s Literature
- ENGL 2090 Disney and Children’s Literature
- ENGL 3102 Literature for Young Children
- ENGL 3104 Literature for Adolescents
- ENGL 4102 Classics in British Children’s Literature
- ENGL 4103 Classics in American Children’s Literature
- ENGL 4104 Multiculturalism and Children’s Literature

**OTHER CHILD-RELATED COURSES**
- AMST 3210 Childhood in America (recommended)
- ANTH 2090 Topics in Anthropology – related to CLCS
- CHFD 2111 Child Study: Interpreting Children’s Behavior
- CHFD 2113 Infant and Early Years
- CHFD 2115 Education of the Young Child
- CJUS 2120 Juvenile Justice
- CJUS 3153 Juvenile Corrections
- EDUC 2100 Intro to Education and Diversity in Schools
- EDUC 2150 Human Development Across the Life Span
- ENGL 4263 Linguistics and Language Learning
- MUSC 2191 Incorporating Music into the Elementary Classroom
- NURS 2200 Human Growth and Development
- PHIL 3940 Philosophy of Education
- PSYC 2120 Child Psychology
- PSYC 2121 Adolescent Psychology
- SOCY 2132 Sociology of Marriage and the Family
- SPED 2100 Introduction to Students with Special Needs
- THEA 4160 Theatre for Youth
- WGST 3130 Perspectives on Motherhood

**MINOR IN TECHNICAL/PROFESSIONAL WRITING**
A minor in Technical/Professional Writing consists of 21 hours; required courses are English 4180 and ENGL 4410. Also required are two courses above the 1000-level in a technical or scientific discipline that cannot also count towards General Education requirements. The remaining courses can be selected from ENGL 4008, 4181, 4182, and 4183. Students may request permission to take other appropriate courses from the Coordinator of the Technical/Professional Writing Program. ENGL 1101/1102 (1103) and 2116 are prerequisites for courses in the minor. Students should declare the minor before trying to enroll in ENGL 2116 to assure a place in the course.

*Note: The Department of English allows English majors who minor in African-American Literature, Children’s Literature and Childhood Studies, or Technical Writing to count only two courses from the minor toward fulfillment of the major degree requirements.*

**TEACHER LICENSURE IN ENGLISH**
Students seeking licensure to teach English in grades 9-12 should consult with their advisors in the Office of Teacher Education Advising and Licensing (TEAL) in the College of Education regarding education courses that are required for licensure. Such students must fulfill all the requirements of the English major and the following additional requirements and expectations: at least 39 hours in English above the 1000-level with a GPA of at least 2.75 for those courses taken at UNC Charlotte; and a GPA of at least 2.75 for all courses taken at UNC Charlotte.

Required courses are: ENGL 2100 (and/or additional approved coursework in writing), 3100; ENGL 3132; ENGL 3104; two 2000- or 3000-level survey courses in British literature, one in American literature; one additional course focusing on language or literacy above the 2000-level (starting Fall 2010: ENGL 4405 Literacy and Language); ENGL 4254; a course in World Literature at the 2000-level or above; ENGL 4116 or 4117 (or an approved 4000-level course in Shakespeare); one course in minority literature(s) (ENGL 2301, 3157, 3158, 3159, 4104, 4155, or an approved special topic course in multicultural literature(s) such as ENGL 3050), and one elective at the 4000-level.

Also required, and not counted toward the 39 hours of English coursework, are COMM 1101 and competency in a foreign language at the intermediate level. Students who complete the requirements for teaching licensure must have a minor in Secondary Education. Students should consult early with their departmental advisors in English and Education regarding these requirements and expectations. Licensure applications are the responsibility of the student and the Office of Teacher Education Advising and Licensing (TEAL) in the College of Education.
Film Studies

Director: Robert C. Reimer, Professor of German

The interdisciplinary minor in Film Studies is designed to allow students to develop knowledge of film and video as an art form while fulfilling the requirements for one of the approved degree programs at the University. The College of Liberal Arts and Sciences courses that satisfy the minor represent different aspects of film and video art: (1) Culture, (2) History, (3) Theory, and (4) Production.

MINOR IN FILM STUDIES

The minor in Film Studies requires the completion of 18 hours of approved courses as follows: (1) FILM 2201 Introduction to Film Studies and (2) at least five additional courses representing at least three of the departments offering the minor. Courses that satisfy the minor are as follows:

AFRS 2105 Black Images in the Media
ARTM 3105 Video Art
ARTT 3891 Time Arts Workshop
COMM 3050 Topics in Communication Studies: Film
ENGL 2106 Film Criticism
ENGL 3050 Topics in English: Film
FILM 3050 Topics in Film
FILM 3051 Topics in Film (W)
FILM 3120 Fundamentals of Video/Film Production
FORL 3160 European Cinema
FREN 3160 Topics in French: Film
GERM 3160 Survey of German Film
HIST 3310 History and Culture through Film
LACS 3160 European Cinema
RELS 3212 Film and Identity
THEA 2640 Playwriting/Screenwriting
THEA 4001 Topics (Fundamentals of Film Production and other topics)

In addition, topics courses offered by American Studies and departments not presently associated with the minor in Film Studies may be applied to the minor upon approval of the Director.

Students may elect as one of their courses an internship that focuses on a video or film project in any of the participating departments. Students who choose this option will sign up under the internship course number of the department that seems most appropriate. If no department designation is available, students will sign up for ARSC 3400, the internship course in the College of Liberal Arts and Sciences.

Department of Geography and Earth Sciences

Chair: C. Allan
Emeritus Faculty: D. Hartgen, D. Lord, N. Nunnally, N. Schul, J. Sommer, A. Stuart, W. Walcott
Knight Distinguished Professor: J. Thill
Professors: C. Allan, J. Bender, J. Diemer, O. Furuseth, E. Hauser, G. Ingalls, T. Moore, W. Xiang
Associate Professors: C. Allan, A. Bobyarchick, H. Campbell, M. Eppes, B. Graves, S. Hippensteel, S. Ives, W. Martin, R. Meentemeyer, H. Smith, Q. Wang
Adjunct Faculty: I. Heard, E. Klingel, B. Strickland, J. Wendel
Executive in Residence: J.D. Rash

The Department of Geography and Earth Sciences is a cross-disciplinary unit offering different but related programs of study. Geography emphasizes the locational aspects of human activities as they are distributed over the Earth. Earth Sciences includes the study of the hydrosphere, atmosphere, and surficial materials of the Earth. Geology examines the composition, history, and structure of the whole earth. Meteorology provides a more rigorous study of the fundamental atmospheric processes that lead to weather and climate. A unique advantage of the Department’s interdisciplinary curriculum is that all four programs of study are inter-related in many ways. For example, a geography student interested in land use planning might gain important experience and knowledge from coursework in soil science or hydrology. An Earth Sciences major might better understand soil formation and chemical weathering with courses in petrology and optical mineralogy. Emphasis in one area should not preclude class work or interest in another, and in fact, this type of interdisciplinary work will often be critical to the student’s program of study.

GEOGRAPHY

The Geography curriculum is oriented toward the methodologies of social science in which the importance of location is stressed. Traditional regional studies and conceptual courses that deal with land use patterns, transportation systems, industrial...
location, the distribution of retail activities, city planning, and urban systems are augmented by technique-oriented courses such as map design and compilation, computer mapping, analysis of satellite images, statistical methods, and geographic information systems (GIS). These courses prepare students in both the concepts and methods of contemporary spatial analysis.

Geography majors find careers open to them in urban and regional planning, cartography, GIS, marketing research, transportation planning, real estate development and teaching. While a wide range of career options are available to undergraduate geography majors, graduate studies provide additional options. (See the UNC Charlotte Graduate Catalog regarding the M.A. in Geography program.)

EARTH SCIENCES

The Earth Sciences program focuses on the suite of dynamic processes acting at or near the surface of the Earth. Study spotlights the composition and dynamics of the atmosphere, hydrosphere and/or surficial materials including environmental applications of these fields of study. Course work covers areas such as environmental geology, hydrology, remote sensing, surfaces processes, soil science, and Environmental Information Systems. This program also prepares students for graduate studies in hydrology and remote sensing.

Students majoring in Earth Sciences pursue careers in environmental consulting, environmental planning, meteorology, land development planning, site analysis, terrain analysis, and teaching. There are employment opportunities in both government and private industry with the greatest range of positions available to students who earn graduate degrees. (See the UNC Charlotte Graduate Catalog regarding the M.S. in Earth Sciences program.)

GEOLOGY

The Geology program examines the entire Earth as a dynamic natural system by focusing on its composition, history and structure. Students pursuing a B.S. degree take coursework in areas of Earth Sciences and Geology such as mineralogy, geochemistry, structural geology, hydrogeology, sedimentology, stratigraphy and petrology, and optical mineralogy.

Students majoring in Geology pursue careers in geotechnical engineering, environmental consulting, mining, oil and gas exploration, site analysis, and teaching. There are employment opportunities in both government and private industry with the greatest range of positions available to students who earn graduate degrees. (See the UNC Charlotte Graduate Catalog regarding the M.S. in Earth Sciences program.)

METEOROLOGY

The Meteorology program focuses on the atmosphere. Students pursuing the B.S. degree will take courses describing and explaining processes in the atmosphere, with traditional coursework in synoptic, dynamic, physical and boundary layer meteorology. Ancillary coursework in oceanography, applied climatology, and air quality modeling are also available. Students majoring in meteorology pursue employment in weather forecasting – private and public, air quality, climatology or atmospheric research. Students majoring in meteorology pursue employment in government with the National Weather Service or through service in the United States Air Force and careers in industry either through broadcasting or with consulting companies and public utilities.

FACILITIES

The Department of Geography and Earth Sciences is housed in modern, well-equipped facilities. Extensive rock, mineral and fossil holdings are available for instructional purposes. The optical mineralogy laboratory features high-quality petrographic microscopes linked with image analysis and cathodoluminescence systems. Analytical facilities also include a geochemical sample preparation laboratory, a plasma emission spectrometer, IC, TOC/TN, Microwave Digestion, XRD, XRF, ICP-MS analytical units, and rapid sediment analyzers. The petrology lab employs a precision thin section machine and an automated photomicrographic unit that is attached to a research-grade polarizing microscope. A proton magnetometer and ground penetrating radar systems are available for ground-based field surveys. Frequent field trips are facilitated by the Department's vans, extensive field instruments and camping gear.

The atmospheric-hydrology laboratories house the Department's Meteorology Data Acquisition System (McIDAS), a geographic information systems package that provides "real time" meteorological data via links to weather satellites. Stream gauges, ground water monitoring equipment, and soil analysis instruments are on hand for use in fluvial processes, hydrogeology, and soils labs.

Students have access to a Departmental computer lab equipped with networked Macintosh and PC workstations, a file server, and printer. These facilities are networked to other labs on campus and to the University's Novell servers. A separate geographic information system (GIS) and remote sensing lab houses PC and Unix workstations, digitizers, and a large format color inkjet plotter. ArcGIS, ArcView and Erdas software packages run on the workstations and are used to support courses in GIS, remote sensing and image processing, and spatial decision support systems. The Department also maintains a large collection of geographically-referenced data for use by students and staff in the lab. These data sets include satellite imagery, U.S. Census Bureau files, and U.S. Geological Survey map data, as well as locally-developed data sets.
The UNC Charlotte Cartography Laboratory has earned a national reputation for its high quality production cartography. This cutting edge facility contains high-end Macintosh workstations, one 1200 dpi scanner, a 35 mm slide scanner and a slide processing unit, high-resolution laser printers and a large format color printer. Software include Adobe Illustrator, Photoshop, PageMill, Authorware, Director, PowerPoint and Astound.

**BACHELOR OF ARTS IN GEOGRAPHY**

A major leading to a B.A. degree consists of 36 hours in geography and earth sciences and includes GEOG 1101, 1105, 2103, 2110, and ESCI 1101 with the lab. Except for required courses, all work offered for the major must be numbered 2000 or above, with at least six hours in coursework at the 4000-level. Up to three elective courses may be selected from courses with the ESCI, GEOL, and METR prefix. Students are encouraged to take additional coursework in related disciplines or to select a second major. Consult the Department of Geography and Earth Sciences for a suggested schedule to complete the B.A. degree with a major in Geography.

**BACHELOR OF SCIENCE IN GEOGRAPHY**

A major leading to a B.S. degree consists of 44 hours in geography and earth sciences and will include 21 hours of major requirements listed below. In addition, students must complete ENGL 2116 (Introduction to Technical Communication) as well as General Education English requirements, and one mathematics course above MATH 1103. Options are available within the major in Economic Geography, Community and Regional Planning, and GIS. Other concentrations can be developed. Students should contact their advisors about these. Except for required courses, all work offered for the major must be in courses numbered 2000 or above. Consult the Department of Geography and Earth Sciences for a suggested schedule to complete the B.S. degree with a major in Geography.

**MAJOR REQUIREMENTS (21 hours)**

GEOG 1101 World Regional Geography (3)
GEOG 1105 Location of Human Activity (3)
GEOG 2103 Elements of GIScience & Technologies (4)
GEOG 2110 Introduction to Geographic Research (3)
GEOG 4120 Fundamentals of Geographic Information Systems (4)
ESCI 1101 Earth Science-Geography (3)
ESCI 1101L Earth Science-Geography Lab (1)

**COMMUNITY & REGIONAL PLANNING OPTION (select 5 courses)**

GEOG 3200 Land Use Planning (3)
GEOG 3205 Internal Structure of the City (3)
GEOG 3210 Regional Planning (3)
GEOG 3215 Environmental Planning (3)
GEOG 4210 Urban Planning Methods (3)

**ECONOMIC GEOGRAPHY OPTION (select 5 courses)**

GEOG 3000 Topics in Regional Geography (3)
GEOG 3105 Geography of Global Economy (3)
GEOG 3150 Manufacturing Geography (3)
GEOG 3205 Internal Structure of the City (3)
GEOG 3605 Geography of Europe (W) (3)
GEOG 4000 Selected Topics in Geography (3)
GEOG 4108 Sport, Place & Development (3)
GEOG 4155 Retail Location (3)
GEOG 4160 Geography of Transportation Systems (3)
GEOG 4255 Applied Population Analysis (3)

**OPTION-RELATED ELECTIVES TO COMPLETE B.S. DEGREE MAY BE SELECTED FROM:**

GEOG 3100 The City and Its Region (3)
GEOG 3115 Urban Transportation Problems (3)
GEOG 3205 Internal Structure of the City (3)
GEOG 3265 Behavioral Geography (3)
GEOG 4103 Computer Programming for GIS Applications (3)
GEOG 4130 Advanced GIS (4)
GEOG 4155 Retail Geography (3)
GEOG 4209 Small Town Planning (3)
GEOG 4255 Applied Population Analysis (3)
GEOG 4400 Internship in Geography (3-6)

**GEOGRAPHIC INFORMATION SYSTEMS OPTION (select 5 courses)**

GEOG 4101 Cartographic Techniques (3)
GEOG 4102 Cartographic Design & Map Construction (3)
GEOG 4103 Computer Programming for Geographic Information Systems Applications (3)*
GEOG 4120 Fundamentals of Geographic Information Systems (5)
GEOG 4130 Advanced Geographic Information Systems (4)*
ESCI 4170 Fundamentals of Remote Sensing (4)
ESCI 4180 Digital Image Processing in Remote Sensing (4)

*Required

Note: It is recommended that students supplement these courses with computer programming and database courses such as ITCS 1214 and ITCS 3160.

**TEACHER LICENSURE**

The Department of Geography and Earth Sciences, in collaboration with the College of Education and the Department of Middle, Secondary, and K-12 Education, offers a program of geography and professional education courses to prepare students for a North Carolina (9-12) teaching license. Students interested in teaching social studies in the
public schools should declare this interest during the first semester of the Sophomore year to obtain appropriate advising and prepare for formal admission to the Minor in Secondary Education. Students should contact the advisor for teacher education within the Department, as well as the Office of Teacher Education Advising and Licensure in the College of Education, for information about the requirements for admission to teacher education, coursework, and the culminating student teaching experience. Additional information about teacher education may be found in the College of Education section of this Catalog.

Students seeking teacher licensure in Comprehensive Social Studies must complete the requirements for the BA in Geography, including seventeen hours in required coursework and 12 elective hours. Licensure in Comprehensive Social Studies requires an additional 18 hours consisting of: HIST 1160 and 1161, HIST 1121, HIST 2000 or above (one Topics Course: Africa, Asia, or Latin America), POLS 1110 and POLS 1130 or POLS 1150.

In addition to requirements set by the College of Education, students must have earned a GPA of 2.5 or better in all social studies courses for admission to student teaching and ultimately for licensure.

MINOR IN GEOGRAPHY

A minor in Geography consists of 19 hours, including GEOG 1101 and 1105 and ESCI 1101/1101L, and nine additional hours in geography. The minor can be tailored to support a number of majors, such as business, computer science, political science, and architecture.

MINOR IN URBAN STUDIES

For details on the minor in Urban Studies, please refer to the Urban Studies heading later in the College of Liberal Arts and Sciences section of this Catalog.

BACHELOR OF ARTS IN EARTH SCIENCES

A major in Earth Sciences leading to a B.A. degree consists of a minimum of 40 hours of required Earth Science (ESCI) and Geology (GEOL) courses and 10 hours of elective courses.

**REQUIRED COURSES (40 hours)**

- ESCI 1101 Earth Science-Geography (3)
- ESCI 1101L Earth Science-Geography Lab (1)
- GEOL 1200 Physical Geology (3)
- GEOL 1200L Physical Geology Lab (1)
- GEOL 1210 Earth History (3)
- GEOL 1210L Earth History Lab (1)
- ESCI 2101 The Environmental Dilemma (3)
- ESCI 3105 Oceanography (3)
- ESCI 4140 Hydrologic Processes (4)
- ESCI 4210 Soil Science (4)
- ESCI 4600 Earth Sciences Seminar (1)
- GEOL 3115 Mineralogy (4)
- GEOL 3190 Environmental Geology (3)
- GEOL 4105 Geomorphology (3)
- METR 3140 Intro to Meteorology & Climatology (3)

**ELECTIVE COURSES (10 hours)**

Ten hours of elective coursework may be selected from additional ESCI and GEOL courses, GEOG 2103, 3200, 3215 or 4120, CHEM 1251, 1252, and associated labs, PHYS 1101, 1102 or PHYS 2101 and 2102 and associated labs, MATH 1241, 1242, and STAT 2122.

BACHELOR OF ARTS IN EARTH SCIENCES: SECONDARY TEACHING OPTION

Students preparing to teach high school earth science may become licensed by earning the B.A. degree including the Secondary Teaching Option. This program consists of a minimum of 38 hours in geography and earth science, including ESCI 1101, 1101L, 2101, 3105; GEOL 1200, 1200L, 1210, 1210L, 3115, 3190, 3190L; and GEOG 2103; 11 elective hours selected from earth science courses of which at least 4 hours are in courses numbered 3000 or above. Also required for this option are CHEM 1251, 1251L; PHYS 1101, 1101L; MATH 1241; Minor in Secondary Education; PHYS 1130, 1130L; and one additional physical of life science elective. Licensure applications are the responsibility of the student and the Office of Teacher Education, Advising, and Licensure (TEAL) in the College of Education.

BACHELOR OF SCIENCE IN EARTH SCIENCES

A major in Earth Sciences leading to a B.S. degree consists of a minimum of 30 hours of required Earth Science (ESCI) and Geology (GEOL) courses, 15 hours of elective courses and 21 hours of required extra departmental courses.

Students considering a career as a licensed professional soil scientist should complete the Bachelor of Science degree with 15 hours of soil science course work as well as meet the work experience and examination requirements of the NC licensure board.

**REQUIRED COURSES (30 hours)**

- ESCI 1101 Earth Science-Geography (3)
- ESCI 1101L Earth Science-Geography Lab (1)
- GEOL 1200 Physical Geology (3)
- GEOL 1200L Physical Geology Lab (1)
- GEOL 3115 Mineralogy (4)
- ESCI 3140 Intro to Meteorology and Climatology (3)
- GEOL 3190 Environmental Geology (3)
- ESCI 4210 Soil Science (4)**
**Courses approved for NC Soil Scientist licensure**

**ELECTIVE COURSES (15 hours)**
Students can choose a minimum of 15 hours of earth sciences, geology and pre-approved geography courses numbered 3000 or above from the areas below.

**Hydrology Electives**
- ESCI 3105 Oceanography (3)
- ESCI 4155 Fluvial Processes (4)
- ESCI 4222 Watershed Science (3)
- GEOL 4145 Fundamentals of Hydrogeology (4) (W)
- GEOL 4165 Aqueous Geochemistry (4)

**Surficial Materials Electives**
- GEOL 3124 Sedimentology (4)
- GEOL 4105L Geomorphology Laboratory (1)
- GEOL 4115 Applied Geophysics (4)
- GEOL 4120 Geochemistry (3)
- GEOL 4410 Applied Soil Science (3)

**Atmospheric Sciences Electives**
- METR 3220 Physical Meteorology (3)
- METR 3240 Boundary-Layer Meteorology (4)
- METR 3245 Synoptic Meteorology (4)
- METR 3250 Dynamic Meteorology (4)
- METR 3252 Weather Analysis Lab (1)
- METR 4150 Applied Climatology (3)

**Environmental Information Systems Electives**
- ESCI 2101 Environmental Dilemma (3)
- ESCI 3170 Environmental Quality Management (3)
- ESCI 4170 Fundamentals of Remote Sensing (4)
- ESCI 4180 Digital Image Processing in Remote Sensing (4)
- GEOG 3215 Environmental Planning (3)
- GEOG 4120 Fundamentals of Geographic Information Systems (4)
- GEOG 4130 Adv Geographic Information Systems (4)

**ADDITIONAL REQUIRED COURSES (21 hours)**
- CHEM 1251 Principles of Chemistry (3)
- CHEM 1251L Principles of Chemistry Lab (1)
- PHYS 1101 Introductory Physics I (3)
- PHYS 1101L Introductory Physics I Lab (1)
- MATH 1241 Calculus I (3)
- MATH 1242 Calculus II (3)
- STAT 2122 Introduction to Probability & Statistics (3)

**AND:**
- CHEM 1252 Principles of Chemistry (3)
- CHEM 1252L Principles of Chemistry Lab (1)

**BACHELOR OF SCIENCE IN GEOLOGY**

A major in Geology leading to a B.S. degree consists of a minimum of 45 hours in geology and earth sciences and 18 hours of extradepartmental courses in chemistry, physics and mathematics.

**REQUIRED COURSES (28 hours)**
- ESCI 1101 Earth Sciences – Geography (3)
- ESCI 1101L Earth Sciences - Geography Lab (1)
- GEOL 1200 Physical Geology (3)
- GEOL 1200L Physical Geology Laboratory (1)

**RECOMMENDED ELECTIVE COURSES (Select 12 hours)**
- ESCI 3105 Oceanography (3)
- ESCI 3170 Environmental Quality Management (3)
- ESCI 4140 Hydrologic Processes (4)
- ESCI 4155 Fluvial Processes (4)
- ESCI 4210 Soil Science (4)
- GEOL 1210 Earth History (3)
- GEOL 1210L Earth History Laboratory (1)
- GEOL 3190 Environmental Geology (3)
- GEOL 4105 Geomorphology (3)
- GEOL 4105L Geomorphology Laboratory (1)
- METR 3140 Intro to Meteorology & Climatology (3)
- METR 3240 Boundary Layer Meteorology (4)
- METR 3245 Synoptic Meteorology (4)

**MINOR IN EARTH SCIENCES**

A minor in Earth Sciences consists of 20 hours of Earth Sciences (ESCI) courses. Requirements include: ESCI 1101 and ESCI 1101L (Earth Sciences Geography) and GEOL 1200 and 1200L (Physical Geology), and 12 additional hours in Earth Sciences and Geology courses. The minor can be tailored to support a number of majors, such as education, engineering, biology, chemistry, or physics.

**REQUIRED COURSES (8 hours)**
- ESCI 1101 Earth Sciences – Geography (3)
- ESCI 1101L Earth Sciences - Geography Lab (1)
- GEOL 1200 Physical Geology (3)
- GEOL 1200L Physical Geology Laboratory (1)

Consult the Department of Geography and Earth Sciences for a suggested schedule to complete the B.S. degree with a major in Earth Sciences or see the Department website at geoearth.uncc.edu for further information.
GEOL 3124  Sedimentology (4)
GEOL 3130  Structural Geology (4)
GEOL 4130  Optical Mineralogy (4)

**ELECTIVE COURSES (Select 17 hours)**
ESCI 4140  Hydrologic Processes (4)
ESCI 4155  Fluvial Processes (4)
ESCI 4170  Fundamentals of Remote Sensing (4)
ESCI 4210  Soil Science (4)
GEOL 3120  Geochemistry (3)
GEOL 3120L  Geochemistry Lab (1)
GEOL 3140  Paleontology (3)
GEOL 3190  Environmental Geology (3)
GEOL 3190L  Environmental Geology Lab (1)
GEOL 4100  Igneous & Metamorphic Petrology (4)
GEOL 4105  Geomorphology (3)
GEOL 4105L  Geomorphology Lab (1)
GEOL 4110  Stratigraphy (4)
GEOL 4115  Applied Geophysics (4)
GEOL 4120  Geologic Mapping & Interpretation (4)
GEOL 4135  Tectonics (4)
GEOL 4145  Fundamentals of Hydrogeology (3) (W)
GEOL 4145L  Hydrogeology Lab (1)
GEOL 4165  Aqueous Geochemistry (4)
GEOL 4800  Individual Study in Geology (1)

**REQUIRED EXTRA-DEPARTMENTAL COURSES**
CHEM 1251  Principles of Chemistry (3)
CHEM 1251L Principles of Chemistry Lab (1)
PHYS 1101  Introductory Physics I (3)
PHYS 1101L Introductory Physics I Lab (1)
MATH 1241  Calculus I (3)
MATH 1242  Calculus II (3)
AND:
CHEM 1252  Principles of Chemistry (3)
CHEM 1252L Principles of Chemistry Lab (1)
OR:
PHYS 1102 Introductory Physics II (3)
PHYS 1102L Introductory Physics II Lab (1)

**COURSES RECOMMENDED FOR STUDENTS PLANNING TO ATTEND GRADUATE SCHOOL**
GEOL 4125  Field Camp (6)
GEOL 4800  Individual Study in Geology (3)
STAT 2122  Intro to Probability & Statistics (3)

**MINOR IN GEOLOGY**
A minor in Geology consists of a minimum of 20 semester hours in Geology courses. The minor can be tailored to support a number of majors, such as engineering, biology, chemistry, or physics. Upper division earth sciences courses can be applied to the minor with permission of the department.

**REQUIRED COURSES (8 hours)**
GEOL 1200  Physical Geology (3)
GEOL 1200L  Physical Geology Lab (1)
GEOL 1210  Earth History (3)

GEOL 1210L  Earth History Laboratory (1)

**ELECTIVE COURSES (Select 12 hours)**
GEOL 3115  Mineralogy (4)
GEOL 3120  Geochemistry (3)
GEOL 3124  Sedimentology (4)
GEOL 3130  Structural Geology (4)
GEOL 3140  Paleontology (3)
GEOL 3190  Environmental Geology (3)
GEOL 3190L  Environmental Geology Lab (1)
GEOL 4410  Applied Soil Science (4)
GEOL 4100  Igneous & Metamorphic Petrology (4)
GEOL 4105  Geomorphology (3)
GEOL 4105L  Geomorphology Lab (1)
GEOL 4110  Stratigraphy (4)
GEOL 4115  Applied Geophysics (4)
GEOL 4120  Geologic Mapping & Interpretation (4)
GEOL 4125  Geologic Summer Field Camp (6)
GEOL 4130  Optical Mineralogy (3)
GEOL 4135  Tectonics (4)
GEOL 4145  Fundamentals of Hydrogeology (3) (W)
GEOL 4145L  Hydrogeology Lab (1)
GEOL 4165  Aqueous Geochemistry (4)
GEOL 4400  Internship in Geology (3-6)
GEOL 4800  Individual Study in Geology (1-4)

**EARTH SCIENCES COURSES THAT MAY BE APPLIED TO THE MINOR IN GEOLOGY WITH DEPARTMENTAL PERMISSION**
ESCI 4210  Soil Science (3)
ESCI 3105  Oceanography (3)
ESCI 4140  Hydrologic Processes (4)
ESCI 4600  Earth Sciences Seminar (1)
ESCI 4155  Fluvial Processes (4)
ESCI 4170  Fundamentals of Remote Sensing (4)
ESCI 4233  Geoenvironmental Site Characterization (4)

**BACHELOR OF SCIENCE IN METEOROLOGY**
The primary goal of the Bachelor of Science in Meteorology is to advance our understanding of the atmospheric processes that influence weather and climate. This pursuit inherently involves an interdisciplinary approach through the combination of advanced coursework in mathematics, chemistry, physics, statistics, computer science, geology, earth sciences, and meteorology with emphasis on recent basic and applied research. The program is designed to provide the next generation of meteorologists with sufficient knowledge and skills to: (1) effectively monitor and analyze the atmospheric state across a spectrum of temporal and geospatial scales; (2) provide accurate and timely forecasts of ordinary and severe weather; and (3)
address relevant contemporary challenges such as global and region climate change, human interactions with the natural environment, and the development of sustainable communities. To this end, the core meteorological curriculum is composed of courses that collectively provide a broad treatment of multi-scale atmospheric processes, including atmospheric thermodynamics and physics as well as synoptic, dynamic, and mesoscale meteorology.

The major comprises a minimum of 70 total hours with 31 hours of required departmental courses, 9 hours of elective departmental courses, and 30 hours of required extra-departmental courses. An outline of the program appears below. Students are also encouraged to take additional coursework in related disciplines. Students enrolled in the program must complete a total of 120 hours, and fulfill the general education requirements applicable to all baccalaureate degrees at UNC Charlotte. Consult the Department of Geography and Earth Sciences for a suggested schedule to complete a B.S. degree in Meteorology.

REQUIRED COURSES (31 hours)
ESCI 1101 Earth Sciences – Geography (3)
ESCI 1101L Earth Sciences – Geography Lab (1)
GEOL 1200 Physical Geology (3)
GEOL 1200L Physical Geology Lab (1)
METR 3140 Introduction to Meteorology and Climatology (3)
METR 3210 Atmospheric Thermodynamics (3)
METR 3220 Physical Meteorology (3)
METR 3245 Synoptic Meteorology (4)
METR 3250 Dynamic Meteorology (4)
METR 4245 Advanced Synoptic Meteorology (3)
METR 4250 Advanced Dynamic Meteorology (3)

ELECTIVE COURSES (Select 9 hours)
ESCI 3105 Oceanography (3)
ESCI 4140 Hydrological Processes (4)
ESCI 4155 Fluvial Processes (4)
ESCI 4170 Fundamentals of Remote Sensing (4)
ESCI 4180 Advanced Remote Sensing (4)
GEOG 2103 Elements of GIScience and Technologies (4)
GEOG 3215 Environmental Planning (W) (3)
GEOG 4120 Fundamentals of GIS (4)
GEOG 4131 Environmental Modeling with GIS (4)
METR 3252 Weather Analysis Laboratory (1)
METR 3330 Forecasting (3)
METR 3340 Weather Communications (3)
METR 4150 Applied Climatology (W) (3)
METR 4240 Boundary Layer Meteorology (3)
METR 4320 Tropical Meteorology (3)
METR 4350 Mesoscale Meteorology (3)

REQUIRED EXTRA-DEPARTMENTAL COURSES (30 hours)
CHEM 1251 Principles of Chemistry (3)
CHEM 1251L Principles of Chemistry Lab (1)
ITCS 1212 Introduction to Computer Science (3)
ITCS 1212L Introduction to Computer Science Lab (0)
MATH 1241 Calculus I (3)
MATH 1242 Calculus II (3)
MATH 2171 Differential Equations (3)
MATH 2241 Calculus III (3)
PHYS 2101 Physics for Science I (3)
PHYS 2101L Physics for Science I Lab (1)
PHYS 2102 Physics for Science II (3)
PHYS 2102L Physics for Science II Lab (1)
STAT 2122 Introduction to Probability and Statistics (3)

HONORS IN GEOGRAPHY AND EARTH SCIENCES

To graduate with Honors in Geology, Geography, Earth Sciences, or Meteorology, a student must meet the following requirements:

1.) Satisfy all the requirements for the degree sought and the major in Geography, Geology, Earth Sciences, or Meteorology.

2.) Complete at least two courses designated as Honors in the UNC Charlotte course schedule. These may be offered through the University Honors Program or from any of the individual departments that have Honors designated courses. Honors work may be undertaken as early as the first semester of the Freshman year.

3.) Maintain at least a 3.2 GPA in all Honors work, 3.25 GPA overall, and 3.2 GPA in all geography, geology, and earth sciences courses taken at UNC Charlotte to satisfy major requirements.

As part of the final 15 hours of course work, the student must (1) register for the Honors section of GEOG 4800/GEOL 4800/ESCI 4800/METR 4800, Individual Study in Geography/Geology/Earth Sciences/Meteorology, and (2) complete a research project to be submitted to a faculty department Honors committee that will certify that the project merits Honors distinction. The candidate must earn the grade A on the thesis research. To be certified as Honors quality, a project must contain original research and demonstrate a high degree of scholarship. Students seeking the Honors designation must notify the Honors Committee no later than the second week of classes that the project will be evaluated for Honors. Faculty members who serve on the Honors Committee will not evaluate projects completed under their supervision. Instead, another faculty member will be asked to evaluate the project in question along with the other members of the Committee. Should the Committee decide that the project does not warrant Honors, the student will still receive whatever grade the faculty member supervising the project assigns.

COOPERATIVE EDUCATION PROGRAM

Students in the Geography and Earth Sciences programs may obtain practical work experience while pursuing their degrees by participating in the Cooperative Education program. The work experience is approved by the department and is closely related to the student’s field of study. The
Cooperative Education Program allows qualified students either to alternate semesters of academic study with semesters of full-time work experience or to combine part-time academic study and part-time work during the same semester. Students who are in good standing with the University, have a minimum overall GPA of 2.5, and have completed 30 credit hours are eligible to apply. Transfer students are required to complete 12 credit hours at the University prior to application. Students interested in learning more about participating in this program should contact the Department of Geography and Earth Sciences or the University Career Center.

Gerontology

Gerontology.uncc.edu

Director and Graduate Coordinator: D. Shenk
Undergraduate Advisor and Coordinator: C. Hancock

The Interdisciplinary Program in Gerontology is designed to provide students with academic and field experiences in the area of aging. An understanding of the basic processes of aging and of its social consequences is valuable not only for students who wish to pursue careers directly related to gerontology but also for students interested in traditional careers in other areas and interested in their own aging. As the number of older persons in our society continues to increase, it will be important for people in every occupation and profession to have a basic understanding of the aging process. The goal of the program is to provide students with that basic understanding.

Gerontology is both an interdisciplinary and a multidisciplinary field. Invariably, the best research, training, and service programs in gerontology have developed when professionals from a variety of traditional academic disciplines have been afforded the opportunity to work together, each contributing a unique expertise while benefiting from the expertise of others. The minor in Gerontology is built around a core sequence of interdisciplinary and multidisciplinary courses that are taught from a variety of different academic disciplines. This approach is designed to bring together information from multidisciplinary sources, integrate theoretical and applied concepts in gerontology, and communicate to students the need for an integrated approach to meeting the needs of older persons.

A minor in Gerontology can be useful in combination with a broad range of majors. With the aging population growing rapidly in the U.S. and globally, there are consequences that translate into diverse career options. Projections indicate opportunities in city planning, administration, management, recreation, counseling, physical therapy, social work, program development, research, long-term care administration and healthcare, for example.

MINOR IN GERONTOLOGY

The minor in Gerontology is awarded only to students completing an undergraduate major at UNC Charlotte. A total of 18 hours in gerontology courses with an overall GPA of 2.5 in those courses is required. Students must earn a C or above in courses that are counted toward the major.
REQUIRED COURSES
GRNT/SOCY 2100  Aging and the Lifecourse (3)
GRNT 3600  Senior Seminar and Field Experience in Aging (W) (3)

PRIMARY ELECTIVES
Select at least two of the following:
GRNT/PSYC 2124  Psychology of Aging (3)
GRNT/HLTH 3115  Health and the Aging Process (3)
GRNT/SOCY 4110  Sociology of Aging (3)
GRNT 4250  Aging Programs and Services (3)

SECONDARY ELECTIVE COURSES
Secondary elective courses may be chosen from the following list of approved courses related to gerontology in consultation with the Gerontology Undergraduate Coordinator. Other appropriate courses may be chosen as electives in consultation with the Gerontology Undergraduate Coordinator.

ANTH/GRNT 3132  Aging and Culture (W) (3)
GRNT/SOCY 3267  Sociology of Dying, Death & Bereavement
GRNT 3800  Independent Study in Gerontology (1-8) (total of 3 credits can be counted toward minor)
GRNT 4050  Topics in Gerontology (1-4)
GRNT/SOCY 4134  Families and Aging (3)
GRNT/SOCY 4150  Older Individual & Society (3)
GRNT/HLTH/WGST 4260  Women: Middle Age and Beyond (3)
GRNT 4270  Intergenerational Relationships and Programs (3)
GRNT 4280  The Experience of Dementia (3)
LBST 1102-425  Arts & Society Film (GRNT): Aging & the Lifecourse in Film (3)
PHIL 3230  Healthcare Ethics (3)
PSYC 3125  Older Worker and Retirement (W) (3)
SOCY 4130  Sociology of Health and Illness (3)
SOWK 4101  Social Work Practice with Elderly (3)

Because this is designed to be an interdisciplinary minor, no more than three courses in the student’s major may count toward the minor.

Students who have earned a bachelor's degree from UNC Charlotte may be readmitted to pursue a minor in Gerontology, just as they may be readmitted to pursue a second major. (For further information on readmission, see the Admission to the University section of this Catalog.)

Students who have earned a bachelor's degree from an institution other than UNC Charlotte may not receive a minor in Gerontology from UNC Charlotte (unless they earn a second baccalaureate degree from UNC Charlotte). Such students may request a letter from the program and/or a transcript notation that acknowledges completion of courses specified for the minor but indicates that the minor can only be awarded upon completion of a degree.

The Gerontology Program offers both a Master's degree and a graduate certificate program in Gerontology. See the UNC Charlotte Graduate Catalog for more details.

Department of Global, International, and Area Studies

gias.uncc.edu

Chair: H. Chernotsky
Faculty: J. Dalsheim, G. Green, C. Houck

The Department of Global, International and Area Studies brings together a number of interdisciplinary programs: International Studies; Islamic Studies; Judaic Studies; and Holocaust, Genocide, and Human Rights Studies. It promotes global awareness and knowledge of cultural, economic, geographic, political and social issues around the world. Through its various programs, the department seeks to prepare students for the challenges of the 21st century.

BACHELOR OF ARTS IN INTERNATIONAL STUDIES

International Studies draws upon the faculty and courses of a number of departments and is structured to give students skills and knowledge to understand and analyze societies outside the United States in the context of the rapidly changing and increasingly interdependent world. By integrating courses on area studies and world affairs from a variety of departments, the program allows students interested in studying other cultures and societies to focus attention across traditional disciplinary boundaries. International Studies is of particular value to those with career objectives in government, law, journalism, teaching, business, trade, or military service. It also serves those who will seek employment with international organizations such as the United Nations or with non-governmental agencies with an international or cross-cultural focus.

International Studies graduates work for employers such as local, state, and federal governments; international organizations; private sector businesses; nonprofit organizations; colleges and universities; elementary and secondary schools; think tanks; the military; newspapers and magazines; law firms; financial institutions; public relations firms; and the travel industry. They also find careers as foreign service officers, policy analysts, international trade specialists, diplomats, United Nations staffers, lobbyists, intelligence specialists, translators/interpreters, US Customs officers, cultural liaisons, journalists, business managers, government or business consultants, ESL administrators/instructors, professors, teachers, travel/tourism promoters, military officers, and missionaries.
A major in International Studies requires a minimum of 30 semester hours in courses approved for International Studies credit to include:

- **INTL 1101** (Introduction to International Studies)
- one course from each of the three Advanced Core areas designed to enhance global economic, geo/political, and social/cultural awareness
- one required course and four elective courses from within one of the area concentrations offered - African, Asian, European, Latin American, or Comparative Studies *(Note: no new students admitted to Latin American Studies concentration)*
- **INTL 4601** (International Studies Seminar)

Majors must also complete related work in foreign language and an international experience as stipulated in the core curriculum. Each student, in consultation with an advisor, will prepare a Plan of Study for completion of these requirements upon declaration of the major.

**CURRICULUM**

1.) **INTL 1101.** Intro to International Studies (3)

2.) **Advanced Core (9).** Select one course from each of the following categories. Other courses may be considered if approved by the Director.

- **Economic Awareness**
  - INTL 3151 International Political Economy *(or POLS 3151)*
  - ECON 2101 Principles of Macroeconomics
  - ECON 3171 International Business Economics *(Prerequisites ECON 2101, 2102)*
  - GEOG 3105 Geography of the Global Economy
  - HONR 1702 Economic Welfare and International Communities *(or LBST 2102-equivalent Honors Section)*

- **Geo/Political Awareness:**
  - INTL 3111 Politics & Culture in Literature*
  - INTL 3131 Diplomacy in a Changing World
  - INTL 3135 Origins of Globalization
  - INTL 3136 Globalization & Resistance
  - GEOG 2165 Patterns of World Urbanization
  - HONR 1701 War, Peace, Justice and Human Survival *(or LBST 2101-equivalent Honors Section)*
  - POLS 3135 Terrorism
  - POLS 3152 International Organization
  - POLS 3162 International Law
  - POLS 4163 Model United Nations

- **Social/Cultural Awareness:**
  - INTL 3111 Politics & Culture in Literature*
  - INTL 3112 Globalization and Culture *(or ANTH 3112)*
  - INTL 3115 Globalization and Digital Media *(or COMM 3126)*
  - INTL 3120 Women’s Studies International *(or WGST 4120)*
  - INTL 3127 Global Media
  - ANTH 2121 Comparative Family Systems

- ANTH 2122 Beliefs, Symbols and Rituals
- ANTH 2123 Women in Cross Cultural Perspective
- ANTH 3111 Culture Change and Applied Anthropology
- ANTH 3122 Culture, Health and Disease
- ANTH 3124 Food, Nutrition and Culture
- ANTH 4120 Intercultural Communication
- CJUS 4103 International Criminal Justice
- COMM 4147 International Public Relations
- HONR 3702 Human Rights and Social Justice
- RELS 2131 Islam

*INTL 3111 may be used for either the Geo/Political Awareness requirement or the Social/Cultural Awareness requirement.

3.) **Foreign Language**

Students are expected to demonstrate competency in a foreign language appropriate to the area studies concentration they have selected by completing the equivalent of two courses at the 3000-level or above. Language courses at the 3000-level offered in English do not apply to the foreign language requirement.

4.) **Concentration (15)**

(a) **Area Studies:** Each student will select an area of concentration and will complete the required course designated.

- **Africa:** INTL 2101 Introduction to African Studies *(3)*
- **Asia:** INTL 2201 Introduction to Asian Studies *(3)*
- **Europe:** INTL 2301 Introduction to European Studies *(3)*
- **Latin America:** INTL 2401 Introduction to Latin American Studies *(3)*

An additional 12 hours of elective credit from courses approved within the selected area studies concentration must be completed *(see list of recommended courses).* While there is no formal requirement as to the distribution of courses across departments, the Plan of Study for area studies must address issues that will further economic, geo/political, and social/cultural awareness.

(b) **Comparative Studies.** Students seeking to focus their study around the comparative analysis of a particular issue or theme may do so with the advice and permission of an advisor. Students seeking to pursue this option must submit a written proposal to the Director describing the intended course of study. Approval will be based on the merit of the proposal and the anticipated availability of sufficient courses on a regular basis. A total of 15 credit hours from courses approved for the concentration must be completed. An international experience appropriate to the concentration is required. Competency in a foreign language appropriate to the concentration equivalent to the completion of two courses at the 3000-level or above is also required.
5.) International Experience
Students are required to complete an international experience related to the area studies concentration they have selected. This may be fulfilled through participation in a formal education abroad program or through foreign-based work, service, or internship activities. This experience must be specified and approved by an advisor. Academic credits earned may be applied to the requirements of the major. A U.S.-based experience of an international nature or prior international experience may be considered in certain circumstances, subject to the approval of an advisor.

6.) INTL 4601 International Studies Seminar (3)
Students pursuing a second major may apply up to nine (9) hours of credit from courses in that major toward the requirements for the major in International Studies. Exceptions may be approved by an advisor upon consultation with the other program in question. Without exception, courses that are used to fulfill the foreign language requirement for International Studies cannot be used to fulfill other requirements for the major.

MINOR IN INTERNATIONAL STUDIES
A minor in International Studies requires completion of 18 semester hours (and 6 to 8 hours of foreign language at the 2000-level) with a GPA of 2.5 or above. Students will complete 6 hours of introductory course work and 12 hours from courses in a selected concentration. Students will choose a concentration in African Studies, Asian Studies, European Studies, or Latin American Studies (Note: no new students admitted to Latin American Studies concentration). A self-designed concentration focusing on a particular issue, theme, or region is also available. All students pursuing the minor must have their curriculum approved by an advisor.

CURRICULUM

1) Core courses: Six hours of introductory course work selected from:
- INTL 1101 Introduction to International Studies (3)
- and one of the following:
  - ANTH 1101 Introduction to Anthropology (3)
  - GEOG 1101 World Regional Geography (3)
  - POLS 1130 Introduction to Comparative Politics (3)
  - POLS 1150 Introduction to International Politics (3)

2) Foreign Language: Six to eight hours of foreign language at the 2201 and 2202 level in a language appropriate to the selected concentration. If 2201 and 2202 courses are not available, 1201 and 1202 in a second appropriate language may be presented.

3) Area Concentration: Twelve hours of related course work appropriate to the selected concentration in African, Asian, European or Latin American Studies (see list of recommended courses). All courses must be chosen from outside the student’s major and from at least two departments.

Self Designed Concentration: Students choosing to focus their study around a particular issue, theme, or region not covered by the other area concentrations may do so with the prior advice and permission of an advisor and subject to the regular availability of sufficient courses and an appropriate foreign language.

4) Education Abroad: Although not required for the minor, education abroad is encouraged and recommended. The Office of International Programs offers a range of programs of varying duration. Academic credits earned may be applied to the requirements of the minor, subject to approval by the Director.

RECOMMENDED AREA STUDIES COURSES FOR MAJOR AND MINOR

Note: List subject to additions and deletions. Other courses may be considered, subject to approval of an advisor.

AFRICAN STUDIES
- INTL 2101 Introduction to African Studies (or HIST 2211)*
- AFRS 2206 African Literature, Music and Art
- AFRS 2207 Introduction to Pan Africanism
- AFRS 3265 African Economic Development
- AFRS 4101 Modern African Literature in English
- AFRS 4105 African International Relations (or POLS 3169)
- ANTH 2111 Peoples of Africa
- ENGL 4155 Pan African Literature
- HIST 2210 Pre-Colonial Africa
- POLS 3143 African Politics
- POLS 3169 African International Relations (or AFRS 4105)

ASIAN STUDIES
- INTL 2201 Introduction to Asian Studies (or HIST 2201)*
- ARTA 2112 Asian Art
- HIST 2200 Asian Civilization
- HIST 3161 History of Modern China
- HIST 3162 Revolutionary Movements in Modern China
- HIST 3165 History of Modern Japan
- HIST 3168 Women and the Family in Modern East Asia
- HIST 3170 Vietnam: Century of Conflict
JAPN 3209  Japanese Civilization and Culture
POLS 3148  Chinese Politics
POLS 3165  East Asia in World Affairs
RELS 2102  Introduction to Asian Religions
RELS 2169  Mahāyāna Buddhism in East Asia
RELS 3154  Hinduism
RELS 3157  Buddhism
RELS 3163  Religious Art & Architecture of India
RELS 3166  Taoism

EUROPEAN STUDIES
INTL 2301  Introduction to European Studies (or HIST 1121)*
ARTA 3120  20th Century Art in Europe
ENGL 3128  British Literature Since WWI
ENGL 4123  The Modern British Novel
LACS 3160  European Cinema
FREN 2209  French Civilization
FREN 3209  France Today
FREN 4003  Studies in French Literature
FREN 4007  Studies in French Culture and Civilization
FREN 4202  Survey of French Literature II
GERM 3030  Studies in German Culture
GERM 3050  Studies in German Literature
GERM 3160  Survey of German Film
GERM 4204  Survey of German Literature II
HIST 2152  European Women’s History
HIST 2252  Russian History From 1917 to the Present
HIST 2261  Britain Since 1688
HIST 2271  Modern France
HIST 2281  Twentieth Century Germany
HIST 3140  Irish History
HIST 3147  The Third Reich
HIST 3148  The Holocaust
PHIL 3020  Modern Philosophy
POLS 3141  European Politics
POLS 3153  European Union
RELS 2101  Introduction to Western Religions
RELS 4101  Religion and Modern Thought
RUSS 3203  Russian Civilization and Culture
SPAN 3209  Spanish Civilization and Culture
SPAN 4202  Twentieth Century Spanish Literature

LATIN AMERICAN STUDIES
INTL 2401  Intro to Latin American Studies (or HIST 2207)*
AFRS 3190  Political Economy of the Caribbean (or LTAM 3190)
ANTH 2116  Contemporary Latin America (or LTAM 2116)
ANTH 4116  Culture & Conflict in the Amazon (or LTAM 4116)
ARTA 3112  Pre-Columbian Art (or LTAM 3313)
HIST 2206  Colonial Latin America (LTAM 2206)
HIST 3174  Resistance and Adaptation (or LTAM 3274)
HIST 3175  Reform, Riots, Rebellions (or LTAM 3275)
HIST 3176  History of Mexico (or LTAM 3276)
HIST 3177  The Cuban Revolution (or LTAM 3277)
HIST 3178  History of Brazil (or LTAM 3278)
HIST 3179  Authoritarianism in Latin America (or LTAM 3279)
HIST 3260  U.S. and Latin America (or LTAM 3260)
POLS 3144  Latin American Politics (or LTAM 3144)
POLS 3154  Political Economy of Latin America (or LTAM 3154)
POLS 3164  U.S.-Latin American Relations (or LTAM 3164)
SPAN 3019  Hispanic Women Writers in English Translation (or LTAM 3319)
SPAN 3029  Cultural Dimension of Business with Spanish-Speaking Countries (or LTAM 3129)
SPAN 3160  Studies in Hispanic Film (or LTAM 3360)
SPAN 3210  Spanish American Civilization and Culture (or LTAM 3310)
SPAN 3212  Introduction to Spanish American Literature (or LTAM 3312)
SPAN 4120  Advanced Business Spanish I (or LTAM 4120)
SPAN 4121  Advanced Business Spanish II (or LTAM 4121)
SPAN 4210  Studies in Spanish American Poetry (or LTAM 4310)
SPAN 4211  Studies in Spanish American Prose Fiction (or LTAM 4311)
SPAN 4212  Studies in Spanish American Theater (or LTAM 4312)

MINOR IN HOLOCAUST, GENOCIDE, & HUMAN RIGHTS STUDIES

The interdisciplinary minor in Holocaust, Genocide, & Human Rights Studies consists of 18 hours, including a 3-hour introductory course and 15 hours divided among Subjects in Holocaust Studies; Subjects in Genocide, Violence, and Slavery; and Subjects in Civil and Human Rights. A student must have at least one course from each subject area. Alternate arrangements may be made by an advisor for the minor.

INTRODUCTORY COURSE (3 hours)
HGHR 2100  Introduction to Holocaust, Genocide, & Human Rights Studies: War Peace, Justice, & Human Survival (3)

HOLOCAUST STUDIES (at least 3 hours)
Students may choose from the following courses to satisfy the requirement of subjects in this area. An advisor for the minor in HGHR may give permission for other courses to count as fulfilling this requirement.

GERM 3050  Studies in German Literature (3)
HIST 3147  The Third Reich (3)
HIST 3148  The Holocaust (3)

GENOCIDE, VIOLENCE, AND SLAVERY (at least 3 hours)
Students may choose courses from the following to satisfy requirements of subjects in this area. An advisor for the minor in HGHR may give permission for other courses to count as fulfilling this requirement.
AFRS 3220  The Caribbean from Slavery to Independence (3)
AFRS 3260  Slavery, Racism, & Colonialism in the African Diaspora
ANTH 4616  Culture & Conflict in the Amazon (3)
CJUS 4161  Violence & the Violent Offender (3)
HIST 2105  American Slavery & Emancipation (3)
HIST 2216  The Modern Middle East (3)
HIST 3174  Resistance & Adaptation: Indian Peoples Under Spanish Rule (3)
HIST 3175  Reform, Riots, & Revolutions in Colonial Spanish America, 1692-1825 (3)
HIST 3218  Racial Violence, Colonial Times to Present (3)
POLS 3133  Middle East Politics (3)
RELS 3150  The Black Church/Civil Rights Movement (3)
SOCY 3175  Crowds, Riots, & Disasters (3)
WGST 3140  Domestic Violence (3)

CIVIL AND HUMAN RIGHTS (at least 3 hours)
Students may choose courses from the following to satisfy requirements of subjects in this area. An advisor for the minor in HGHR may give permission for other courses to count as fulfilling this requirement.

AFRS 3230  Poverty & Discrimination in African Diaspora in the Modern Era (3)
GEOG 3250  World Food Problems (3)
HIST 3179  Authoritarianism in Latin America (3)
LTAM 4600  Seminar in Latin American Studies (3)
PHIL 3910  Philosophy of War & Peace (3)
WGST 3140  Domestic Violence (3)

MINOR IN ISLAMIC STUDIES

The interdisciplinary minor in Islamic Studies is designed to allow students to develop an understanding of Islamic culture, history, philosophy, and religion, and to appreciate the role of Islamic traditions in the development of world civilizations.

The minor requires the completion of 18 hours, including 9 hours in designated core courses. The remaining courses should be chosen in consultation with the student's adviser in order to best reflect his/her academic interests. Though it is not a requirement, minors are strongly urged to begin gaining proficiency in Arabic. Up to 6 hours of Arabic may be counted toward the minor.

CORE REQUIRED COURSES (9 hours)
RELS 2131  Islam (3)
HIST 2215  History of Muslim Societies (3)
POLS 3133  Politics of the Middle East (3)
or
POLS 3166  Politics of the Islamic World (3)

ELECTIVE COURSES (9 hours)
Anthropology
ANTH 2115  Culture and Society in the Middle East (3)
ANTH 4090  Readings in Middle East Ethnography (3)
ANTH 4090  Readings in the Anthropology of Religion: Islam (3)
ANTH 4090  Remembering God: Religion and the Senses in the Muslim World (3)

History
HIST 2216/RELS 2216  History of the Modern Middle East (3)
HIST 3169  Central Asia (3)

Languages and Culture Studies
LACS 1201  Arabic (4)
LACS 1202  Arabic (4)

Political Science
POLS 3133  Politics of the Middle East (3)
POLS 3166  Politics of the Islamic World (3)
HONR 3700  Understanding Central Asia: Society, Culture and Politics in Iran and Afghanistan (3)

Religious Studies
RELS 2216/HIST 2216  The Modern Middle East (3)
RELS 4000  Modern Islam: The Quest for Identity (3)

Select special topics courses, certain pre-approved Study Abroad programs, and other courses that may subsequently be included in the Catalog, may also be added to the approved list of electives. Students should consult with an advisor.

MINOR IN JUDAIC STUDIES

An interdisciplinary minor in Judaic Studies allows students to cultivate a knowledge of the breadth of Jewish culture, history, literature, and religion. College of Liberal Arts and Sciences courses that satisfy the minor address different aspects of Judaism, Jewish history, Jewish literature, and Jewish contributions to global cultures.

The minor requires the completion of 18 hours of approved courses offered by at least two departments. At least 9 hours must be in courses at the 3000-level or above. Though it is not a requirement, minors are strongly encouraged to take at least 3 hours in ancient or modern Hebrew and RELS 2110 Judaism.

Below is a representative list of courses that have
recently been offered. The complete list of approved courses is updated each semester to reflect the actual course offerings of the participating departments and is available online.

**ARTH 4609** Representations of the Holocaust
**ENGL 4002** Women in Literature: Jewish Women Writers
**ENGL 4050** Topics in English: Literary Responses to the Holocaust
**GERM 3150** The Holocaust through German Literature and Film
**HIST 2216** History of the Modern Middle East
**HIST 3148** The Holocaust
**LACS 1201** Biblical Hebrew I
**LACS 1202** Biblical Hebrew II
**RELS 2104** Hebrew Scriptures
**RELS 2110** Judaism
**RELS 3000** Women in the Bible
**RELS 3104** Prophecy & Prophetic Literature in Ancient Israel
**RELS 3107** Psalms and Wisdom Literature
**RELS 3111** Women in Judaism
**RELS 4000** Advanced Biblical Hebrew
**RELS 4107** Early Judaism
**RELS 4108** Medieval Judaism
**RELS 4109** Modern Judaism
**RELS 4110** Contemporary Jewish Thought

**Department of History**

**Chair:** J. Buchenau  
**Professors:** J. Buchenau, J. Dávila, L. Johnson, D. Morrill, J. Smail
**Robert Lee Bailey Distinguished Professor:** D. Goldfield
**Charles H. Stone Distinguished Professor:** J.D. Smith
**Professors Emeritus:** R. Rieke, E. Perzel
**Associate Professors:** K. Cox (Director, Center for the Study of the New South), D. Dupre, K. Flint (Director of Public History), C. Haynes, C. Hicks, J. Hogue, J. Laurent, G. Mixon (Director of Graduate Studies), H. Perry, S. Ramsey, S. Sabol, P. Thorsheim, M. Wilson
**Assistant Professors:** B. Andres, C. Cameron, M. Ehlers, D. Johnson, J. Massino, A. Pipkin, R. Prasad
**Senior Lecturer:** O. Lansen (Director of Undergraduate Studies)
**Lecturer:** S. McKinley
**Affiliate Faculty:** A. Rauch (ENGL), J. Robinson-Harmon (RELS), T. Rogers (AFRS)

History is the broadest and most integrative of all disciplines concerned with human beings and society. Today's historians use the research tools of the social sciences to understand and explain major events and changes in human experience over time. Yet history has always been considered one of the humanities, and it remains so because historians are concerned with issues of value and meaning, with the significance that historical events had for the lives of individuals and groups. Students of history gain an understanding of people, groups, and society and a sensitivity both to detailed research and the “big picture.” Through the study of history, students can become better prepared for life in a rapidly changing world and a rapidly evolving economy.

Professions like law and medicine have always considered history an ideal undergraduate major because it emphasizes the essential intellectual skills: critical thinking, research, writing, and speaking. For these reasons history also remains a sound preparation for almost any undergraduate and a good choice for the typical student in America, who graduates with a basic education rather than specific job training. Whether you plan to teach, work in archives or museums, or pursue a career in government, law, international organizations, or
business, the skills you learn as a historian will prove invaluable. The Department offers majors the premier track in Comprehensive Social Studies Teacher Licensure and opportunities in public history. Through the master's program history majors can pursue their interests at the graduate level. (See the UNC Charlotte Graduate Catalog.)

STUDY ABROAD
Arrangements can be made for study abroad in Asia, Africa, Europe, Latin America or Canada.

BACHELOR OF ARTS IN HISTORY
A major in History leading to the B.A. degree requires a minimum of 30 hours in History meeting the requirements for A) Foundations, B) Elective Coursework, and C) Senior Seminar outlined below. In addition there is D) a related work requirement in a foreign language. The student must achieve a cumulative GPA of 2.0 in all history courses. Transfer students are required to take at least fifteen hours of history major course work at UNC Charlotte.

A) Foundations (9 hours)
HIST 1121  European History since 1660
HIST 1160 or 1161  US History to or since 1865
HIST 2600  History Skills Seminar

Note: HIST 1121 and 1160/1161 are normally taken in the Freshman or Sophomore year; HIST 2600 is normally taken in the Sophomore year or as soon as possible after declaring the major.

B) Elective Coursework (18 hours)
  a) No more than 3 hours are at the 1000-level; at least 6 hours at the 3000-level; and 3 hours at the 4000-level. Students seeking secondary certification in History Education must take both HIST 1160 and 1161.
  b) Of the elective coursework, at least 6 hours must be in Non-Western History (Asia, Africa, Latin America, Middle East).

C) Senior Seminar (3 hours)
HIST 4600  Senior Research Seminar

Note: Students must score a C or above in both HIST 2600 and 4000-4004. Students must complete HIST 2600 before taking HIST 4000-4004; and complete HIST 4000-4004 before taking HIST 4600.

D) Related Work
Students majoring in History must complete either a 2000-level course in a foreign language that uses the Latin alphabet (French, German, Italian, Spanish, etc.) or a 1202-level course in language that is not written in the Latin alphabet (Greek, Hebrew, Japanese, Russian etc.), or demonstrate proficiency at that level. Intermediate American Sign Language (at the 2000 equivalency level) is accepted.

E) Additional Stipulations
Students doing a second major may count up to nine (9) hours of credit from courses fulfilling requirements in that major towards requirements for the History degree. Students doing a major/minor combination may count up to six (6) hours credit from courses used in the minor towards requirements for the major in History. These stipulations include cross listed courses regardless of program designation under which the course was taken. Exceptions may be approved by the Department Chair upon consultation with the other program.

Note: Students exercising this option should be aware that the accuracy of the on-line degree audit may be affected.

TEACHER LICENSURE
The department, in collaboration with the College of Education, offers the premier track to a North Carolina Professional I status Teaching License in History and Social Studies. The coursework for this licensure includes nearly equal numbers of content area courses in history and affiliated social studies supervised by the Department of History, and education courses supervised by the Department of Middle, Secondary, and K-12 Education. Students interested in teacher licensure should declare their intent with the Department of History as soon as possible to prevent unnecessary delays.

Students seeking teacher licensure in History and Social Studies must complete the requirements for the History major, 12 additional hours in Social Studies consisting of: POLS 1110; POLS 1130 or 1150; one ECON course, and LBST 2102-GEOG, and 33 additional hours in Education (please contact the Teacher Education, Advising, and Licensure Office (TEAL) in the College of Education for details). Students must obtain a grade of C or above for all History, Social Studies, and Education courses, as well as a cumulative GPA of 2.5 or above for admission to the College of Education, and a 2.75 GPA in History and Social Studies to be eligible for licensure.
MINOR IN HISTORY

A minor in History consists of 18 semester hours including HIST 1121; no more than six additional hours at the 1000-level; and at least nine semester hours selected from courses above the 1000-level. The student must achieve a minimum grade point average of 2.0 in all history courses.

BACHELOR OF ARTS WITH HISTORY HONORS

HONORS PROGRAM
The Department of History offers an Honors Program that consists of a two-course sequence: HIST 4797 (Honors Methods and Practice) and HIST 4799 (Honors Research and Thesis). HIST 4797 is normally taken in the semester before graduation. Students considering Honors in History should note that HIST 4797 will fulfill the requirement for HIST 4000, and completion of HIST 4799 will fulfill the requirement for HIST 4600. Successful candidates will receive a B.A. in History with Honors in History upon graduation.

ADMISSION
Entry into all honors courses is by permission of the department only, and requires the completion of HIST 2600 (Historical Skills Seminar) with a grade of A, as well as a GPA of 3.50 in History and 3.0 overall. Because History 4797 is taught in the fall only, students must complete their application to the History Honors Program well before their expected graduation. For this reason, qualified students are urged to discuss the History Honors Program with the Department’s Honors Director early in their career. Students must also formally apply and be approved for Honors Candidacy by the University Honors Council, a process which will be initiated as part of the HIST 4797 course.

CERTIFICATION REQUIREMENTS
To be awarded a degree in history with Honors in History, candidates must write an Honors thesis of A quality (and thus a grade of A for HIST 4799) as judged by a committee of readers. In addition, the student must complete HIST 4797 and 4799 with a 3.50 GPA or above, obtain a GPA of 3.50 or above in History courses, and an overall GPA of at least 3.0.

BACHELOR OF ARTS IN LATIN AMERICAN STUDIES

Latin American Studies involves a variety of fields, including African-American Studies, anthropology, Spanish and Portuguese language, literature and culture, history, philosophy, and political science. It also includes substantial training and education in Spanish and/or Portuguese. Students may either earn a major (Bachelor of Arts) or a minor in Latin American Studies.

Graduates of Latin American Studies (1) pursue graduate study in the humanities, social sciences, and law; (2) work for companies and agencies serving the growing Hispanic population of our region; and (3) find careers in the foreign service, the military, and other governmental agencies; in nongovernmental organizations with an international or cross-cultural orientation; and in international business.

ADMISSION REQUIREMENTS
Students declaring a Latin American Studies major must meet all requirements for undergraduate admission to the university. Students matriculated at UNC Charlotte and planning to change to or declare Latin American Studies as their major must have an overall GPA of at least 2.0. Transfer students from other institutions must meet all general requirements for admission to the University. Matriculated and transfer students who do not meet requirements for admission to the program because of special circumstances may petition the coordinator for acceptance into the program.

DOCUMENT REQUIREMENTS
Students applying for admission to the University and acceptance into the Latin American Studies program must submit all documents specified in the current Catalog. Matriculated students requesting acceptance into the Latin American Studies program must complete the University Declaration of Major form. Students seeking to apply course work taken at other institutions to the Latin American Studies major must provide a copy of the official course description for each course requested for consideration.

DEGREE REQUIREMENTS

TOTAL HOURS REQUIRED
The program leading to the Bachelor of Arts degree in Latin American Studies is a 120 semester-hour program, including completion of all General Education Requirements and at least 30 semester hours in courses approved for Latin American Studies credit.

GRADE REQUIREMENTS
To graduate, students majoring in Latin American Studies must have an overall GPA of at least 2.0, including a GPA of at least 2.0 in the major.

AMOUNT OF CREDIT ACCEPTED FOR TRANSFER
Up to 64 semester hours may be accepted from a two-year institution. There is no limit on the number of hours that may be accepted from four-year institutions. All students must complete their last
30 semester hours in residence at UNC Charlotte, including the last twelve hours of the major.

STUDY ABROAD OR WORK EXPERIENCE
Students are required to complete a study abroad or work experience in Latin American Studies. This may be fulfilled through participation in a formal study abroad program, through foreign-based work, service or internship activities; through an internship in the United States involving work with Latino populations; or through completing 6 credit hours in a second foreign language current in Latin America such as Spanish, Portuguese, French, or 3 hours in an indigenous language such as Yucatec Maya, Náhuatl, or Quechua. Academic credits earned may be applied to the requirements of the major. At the discretion of an advisor, prior international experience may be considered.

FOREIGN LANGUAGE REQUIREMENTS
Students are expected to demonstrate competency in Spanish by completion of two courses at the 3000-level or above, or a combination of Portuguese through the 2000-level and reading knowledge in Spanish equivalent to the completion of SPAN 2050.

CURRICULUM

INTRODUCTORY COURSE
LTAM 1100  Introduction to Latin America (3 hours)

THEMATIC COURSES
Two to three courses from each of the following three perspectives (minimum of 24 hours):

Economy and Society (6-9 hours)
Courses in this perspective emphasize social science approaches to the study of contemporary Latin America such as anthropology, political science, and business language. Economy and Society courses are designated in the LTAM course catalog by the numbers 21xx, 31xx, 41xx, for example, LTAM 2116 (Contemporary Latin America), LTAM 3144 (Latin American Politics), and LTAM 4120 (Advanced Business Spanish).

Historical Context (6-9 hours)
Courses in this perspective focus on the historical development of Latin America since Pre-Columbian times, and they include courses in History and Archaeology. Students must take at least one course on pre-Columbian and/or colonial Latin America. Historical Context courses are designated in the LTAM course catalog by the numbers 22xx, 32xx, and 42xx, for example, LTAM 2206 (Colonial Latin America) and LTAM 3276 (History of Mexico). One of these courses must focus on the pre-colonial and/or colonial periods.

Literature and the Arts (6-9 hours)
Courses in this perspective study the cultural production of Latin American peoples such as the arts, literature and film, and they include courses in Art History, Spanish, and film studies. Literature and the Arts courses are designated in the LTAM course catalog by the numbers 23xx, 33xx, and 43xx, for example, LTAM 3360 (Studies in Hispanic Film) and LTAM 4313 (Studies in Spanish American Prose Fiction).

Students doing a second major may count up to nine (9) hours of credit from courses fulfilling requirements in that major towards requirements for the Latin American Studies degree. Students doing a major/minor combination may count up to six (6) hours credit from courses used in the minor towards the requirements for the major in Latin American Studies. These stipulations include cross listed courses regardless of program designation under which the course was taken. Exceptions may be approved by an advisor upon consultation with the other program or department. Note: Students exercising this option should be aware that the accuracy of the on-line degree audit may be affected.

Students may take LTAM 2000 (Topics in Latin American Studies); or LTAM 3000 (Advanced Topics in Latin American Studies) to help fulfill these requirements. As the topics of these courses vary, students may repeat them for credit. The Director of Latin American Studies will determine which perspective(s) a given section of LTAM 2000 or LTAM 3000 fulfills. With the approval of an advisor, students may also apply up to three hours of LTAM 3800 (Independent Study) toward these requirements.

CAPSTONE SEMINAR
LTAM 4600 (Seminar in Latin American Studies) may only be taken after completion of at least 18 hours in the major, including LTAM 1100, and fulfillment of the language requirement. As the topic of this course varies, it may be taken more than once to fulfill an elective requirement. In that case, the first LTAM 4600 will fulfill a thematic requirement, and the second course will fulfill the capstone requirement.

FOREIGN LANGUAGE REQUIREMENT
Students are expected to demonstrate competency in Spanish by completion of two courses at the 3000-level or above; or a combination of Portuguese through the 2000-level and reading knowledge in
Spanish equivalent to the completion of SPAN 2050.

EXPERIENTIAL LEARNING
Students are required to complete a study or work experience in Latin American Studies. This may be fulfilled through participation in any one of the following:

A formal study-abroad program of at least 45 contact hours equaling three hours of academic credit.

At least 135 hours of work, service or internship activities in Latin America or with Latino populations in the United States. 3 hours of academic credit for this option are available by enrolling in LTAM 3400 Internship in Latin American Studies.

Course work in another Latin American language in addition to the foreign language requirement above. This option may be fulfilled by completing 6 credit hours in Spanish, Portuguese, or French. Students may also elect to complete 3 hours in an indigenous language such as Yucatec Maya, Nahua, or Quechua. As the latter languages are currently not taught at UNC Charlotte, interested students would need to enroll in an off-campus program.

Academic credits earned in the course of fulfilling this requirement may be applied to the requirements of the major.

At the discretion of an advisor, prior life, study, or work experience may be considered in exempting a student from this requirement.

HONORS IN LATIN AMERICAN STUDIES
This optional credential may be awarded to students with a minimum overall GPA of 3.25 and a GPA of at least 3.25 in Latin American Studies courses. To receive honors in Latin American Studies, a student must be approved by the Latin American Studies Honors Committee as well as the University Honors Council. Students who plan to graduate with “Honors in Latin American Studies” must apply for, and be approved for “Honors Candidacy” during the semester prior to the semester they plan to graduate. They must register for three hours of LTAM 4700: Honors in Latin American Studies, during their Senior year and present an honors thesis based on in-depth research in primary sources to a committee composed of three members of the Latin American Studies faculty. One of these faculty members will serve as the student’s primary honors thesis adviser. Following an oral defense of the thesis, the committee shall award a grade. A thesis awarded a grade of A is acceptable for curricular honors. Students may also obtain honors through the University Honors Program (details available at uhonors.uncc.edu).

MINOR IN LATIN AMERICAN STUDIES
A minor in Latin American Studies consists of 15 semester hours as follows.

<table>
<thead>
<tr>
<th>COURSE REQUIREMENTS</th>
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<tbody>
<tr>
<td>INTRODUCTORY COURSE (3 hours)</td>
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<tr>
<td>LTAM 1100 Introduction to Latin America</td>
</tr>
<tr>
<td>ECONOMY AND SOCIETY (6-9 hours)</td>
</tr>
<tr>
<td>Courses in this perspective emphasize social science approaches to the study of contemporary Latin America such as anthropology, political science, and business language. Economy and Society courses are designated in the LTAM course catalog by the numbers 21xx, 31xx, 41xx, for example, LTAM 2116 (Contemporary Latin America), LTAM 3144 (Latin American Politics), and LTAM 4120 (Advanced Business Spanish).</td>
</tr>
<tr>
<td>HISTORICAL CONTEXT (6-9 hours)</td>
</tr>
<tr>
<td>Courses in this perspective focus on the historical development of Latin America since Pre-Columbian times, and they include courses in History and Archaeology. Students must take at least one course on pre-Columbian and/or colonial Latin America. Historical Context courses are designated in the LTAM course catalog by the numbers 22xx, 32xx, and 42xx, for example, LTAM 2206 (Colonial Latin America) and LTAM 3276 (History of Mexico). One of these courses must focus on the pre-colonial and/or colonial periods.</td>
</tr>
<tr>
<td>LITERATURE AND THE ARTS (6-9 hours)</td>
</tr>
<tr>
<td>Courses in this perspective study the cultural production of Latin American peoples such as the arts, literature, and film, and they include courses in Art History, Spanish, and film studies. Literature and the Arts courses are designated in the LTAM course catalog by the numbers 23xx, 33xx, and 43xx, for example, LTAM 3360 (Studies in Hispanic Film) and LTAM 4313 (Studies in Spanish American Prose Fiction).</td>
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</tbody>
</table>

Note: Among the 15 hours required for the minor, not more than six (6) hours may be double counted with another major or minor. This stipulation includes cross-listed courses, regardless of program designation under which the course was taken. Exceptions may be approved by an advisor upon consultation with the other program or department. Students exercising this option should be aware that the accuracy of the online degree audit may be affected.

Students may take LTAM 2000 (Topics in Latin American Studies) or LTAM 3000 (Advanced Topics in Latin American Studies) to help fulfill these requirements. As the topics of these courses vary, students may repeat them for credit. The Director of the Latin American Studies program will determine...
which perspective(s) a given section of LTAM 2000 or LTAM 3000 fulfills. With the approval of an advisor, students may also apply up to three hours of LTAM 3800 (Independent Study) toward these requirements.

FOREIGN LANGUAGE REQUIREMENT
Students are expected to demonstrate competency in Portuguese or Spanish by completion of two courses at the 2000-level or above. Additional language training and/or study-abroad is strongly recommended.

Humanities, Technology, and Science

MINOR IN HUMANITIES, TECHNOLOGY, AND SCIENCE

The interdisciplinary minor in Humanities, Technology, and Science examines the interrelationships among three of the major dimensions of our culture: its science, its technology, and its humanistic orientation.

A minimum of 18 credit hours are required for this minor, including:

INTRODUCTORY COURSE (3 hours)
HTAS 2100 Introduction to Humanities, Technology, & Science (3)

SUBJECTS IN THE AREAS OF HISTORY AND/OR PHILOSOPHY OF SCIENCE OR TECHNOLOGY (6 hours)
HIST 2110 Technology & Science in Society I (3)
HIST 2111 Technology & Science in Society I (3)
PHIL 3520 Philosophy of Science (3)
PHIL 3920 Philosophy of Technology (3)

ELECTIVES (9 hours)
ANTH 2151 Intro to Archaeology (3)
ANTH 3122 Culture, Health, & Disease (3) (W)
ANTH 3124 Food, Nutrition, & Culture (3)
ANTH 3152 Early Civilizations (3)
ANTH 3222 Culture, Health, & Disease (3)
ARCH 4213 Architectural History Elective (3)
CJUS 3310 Punishment & Freedom (3)
CJUS 4110 Computer Crime (3)
COMM 3052 Topics in Mass Media (3)
COMM 3120 Communication & Mass Media (3)
COMM 3121 Mass Communication & Society (3)
ENGL 2116 Intro to Technical Communication (3) (W)
ENGL 3110 Literature & Science (3)
ENGL 4008 Topics in Advanced Technical Communication (3)
ENGL 4180 Theories of Technical Communication (3)
ESCI 2101 The Environmental Dilemma (3)
GEOG 3250 World Food Problems (3)
HIST 2120 American Military History 1607-Present (3)
HIST 2140 Disease & Medicine in History (3)
HIST 3155 Health & Healing in Africa (3)
HONR 3701  Science, Technology & Human Values
(3)
HTAS 3800  Independent Study in Humanities, Technology, & Science (3)
ITCS 3688  Computers & Their Impact on Society
(3)
ITIS 3130  Human Computer Interaction (3)
POLS 3154  Cyberspace & Politics (3)

Other courses that do not appear on the above list, especially topics and independent study courses, will be approved if they are pertinent to the student's program and deal with an HTAS topic. Examples of such courses approved by their departments for enrollment by HTAS students are:

ARCH 4050  Architecture Elective – Topics (3)
HIST 3001  Topics in European History (3)
HIST 3002  Topics in Non-Western History (3)
POLS 3030  Topics in Comparative or Int’l Politics
(3)
THEA 4001  Topics in Theater (3) (W)

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**Department of Languages and Culture Studies**

Chair: R. Reimer  
Associate Chair and Professor: A. González
Professors: M. Doyle, M. Miller, M. Noiset, R. Reimer
Professors Emeritus: P. Saman, J. Suther

Associate Professors Emeriti: S. Cernyak-Spatz, R. Gleaves, C. Merrill, R. Rose

Assistant Professors: B. Ambury, J. Batista, A. Pujol, J. Wang

Assistant Professor Emeritus: R. McLeod

Teaching Professor: A. Koralova

Lecturers: M. McDermott-Castro, E. Jardines, C. Mori, S. Shoji, S. Smith, A. Vega, S. Watts, S. Wright

The Department of Languages and Culture Studies has designed its programs to develop language skills and to provide insights into foreign cultures through the study of language, culture, literature, and translation. The Department offers the Bachelor of Arts degree with majors in French, German, Japanese, and Spanish, and minors in French, German, Japanese, Russian, Spanish and Classical Studies. Certificates are offered in Translating and Business Language. Arabic, Chinese, Italian, and Portuguese are offered regularly, and Classical Greek, Hebrew, and other languages are offered on demand. The Department also offers Yoruba and Swahili through its self-instructional program and modern Greek.

Students interested in foreign language study are encouraged to explore the following options:

- A single major in French, German or Spanish, based on the standard liberal arts model, with or without teaching licensure
- A double major in a foreign language and another discipline or in two languages
- A foreign language minor
- A concentration in one or more languages to complement a major in another academic area
- A concentration of courses leading to a Certificate in Translating or Business Language

**SCHOLARSHIPS, STUDY ABROAD, AWARDS**

Scholarships for summer study and employment abroad are available to UNC Charlotte students of French, German, Japanese, Russian, and Spanish. As a rule, applicants are required to be language majors or minors, or students in a departmental certificate program, to be eligible, and they must
have completed the equivalent of at least two years of study in the language they propose to use abroad. The Department strongly encourages all students to participate in a study abroad program and sponsors exchange programs with universities in Brazil, Chile, China, France, Germany, Japan, Mexico, Poland, Russia, and Spain. The Department regularly presents the following awards: the Mary Jim Whitlow Award for Outstanding Student Achievement in Language Study; the Pierre Macy Award for Excellence in French; the Karl Gabriel, Robert Reimer, Charles Merrill, and Susan Cernyak-Spatz Scholarships for Excellence in German and Service to the German Program; and La Noticia Scholarship for Spanish. For detailed information, contact the Department of Languages and Culture Studies.

BEGINNING AND INTERMEDIATE SPANISH

Beginning and Intermediate Spanish language courses are offered for prospective majors and non-majors. SPAN 1201 and SPAN 1202 make up the first-year Spanish language sequence (first and second semester). A number of courses are then offered at the intermediate level (that is, the third and fourth semesters). The following courses satisfy the first semester of the Intermediate level: SPAN 2200 Spanish for Reading Knowledge; SPAN 2201 Intermediate Spanish I; SPAN 2105 Communication Skills Development I; SPAN 2210 Spanish for Commerce, SPAN 2211 Spanish for Criminal Justice Professionals, and SPAN 2212 Spanish for Health Care Professionals. All of these courses satisfy a first semester intermediate language course required by many majors in the College of Liberal Arts and Sciences as well as some other Colleges. Different majors may require a specific course from those listed above. Students should check carefully with an advisor in their own major to determine which third semester course is preferred by their major. All students are also encouraged to study abroad to finish their intermediate language sequence.

BACHELOR OF ARTS

GENERAL REQUIREMENTS FOR ALL MAJORS

All students are required to fulfill General Education requirements described in the Degree Requirements and Academic Regulations section of this Catalog, in addition to coursework specified below.

Note: Introductory language courses may not be taken on a pass/no credit basis if they are being used to fulfill a college or departmental foreign language requirement. Students majoring or minoring in Language may not take required courses in the Department on a pass/no credit basis.

PLACEMENT

All incoming students may take a UNC Charlotte Placement Exam in the language they wish to study if they have had previous experience with that language. Foreign language majors and minors may also take a placement exam to help them determine at what level they should begin studying their chosen language. The placement test costs $10. Students should consult the departmental web page for more specific guidelines regarding placement.

WRITING-INTENSIVE COURSES (W)

All foreign language majors must take at least one W course offered within the department. Such courses include, but are not limited to: LACS 3050, LACS 3160, FREN 2209, GERM 3160, RUSS 3050, RUSS 3203, SPAN 2009, SPAN 3009, and SPAN 3019. Any W course offered within the department counts as a writing intensive course in the major required by General Education.

TEACHER LICENSURE

The Department of Languages and Culture Studies, in collaboration with the Department of Middle, Secondary, and K-12 Education, offers a program to prepare students for K-12 teacher licensure in North Carolina. The student seeking licensure to teach a foreign language must fulfill the General Education requirements, the foreign language major, two foreign language teaching methods courses, and satisfy all other requirements specified by the College of Education. Students planning to specialize in foreign language education should apply through the Coordinator for Foreign Language Education during the first semester of the Sophomore year to obtain appropriate advising. Licensure applications are the responsibility of the student and the Office of Student Academic Services in the College of Education.

BACHELOR OF ARTS IN FRENCH

The French major offers two options:

OPTION A

Requires FREN 2201, 2202, 2207, 3201, 3202, 3203, 3209, and four additional courses at the 4000-level. Related work is to be approved by the Department. Students seeking teacher licensure take this option.

OPTION B

For students with a double major, this option requires FREN 2201, 2202, 2207, 3201, 3202, 3203, 3209, two additional courses at the 4000-level, and all courses required for the second major.

Students majoring in French may substitute two TRAN-F courses for 4000-level French courses for Option A and one TRAN-F course for a 4000-level course for Option B.
BACHELOR OF ARTS IN GERMAN

A major in German leading to a B.A. degree requires GERM 2201, 2202 or 2210, 3201, 3202, 3030, 3050 (two courses under different topics; 3160 may be substituted for one 3050), 4203 or 4204, 4010 or 4020, and one additional 3000- or 4000-level German course. German majors must enroll concurrently for one hour of GERM 4050 for each GERM 3030 or 3050 course they take, unless that course was offered in the German language. In addition, 15 hours of related work (or a declared minor), approved by the German language staff, will be required. Candidates for teacher licensure must also take two foreign language teaching methods courses offered jointly between the Department of Languages and Culture Studies and the College of Education, and satisfy all other requirements specified by the College of Education.

Students majoring in German and seeking a Certificate in Translating in German must also take one of 4050, 4150, or TRAN 4402-J; and six credits at the 2000-, 3000-, or 4000-level (approved by advisor).

An oral exam is administered by the staff and based on the proficiency standards of the American Council on the Teaching of Foreign Language (ACTFL). Reading, writing, and listening competencies, as well as Japanese grammatical knowledge, will be assessed according to internationally accredited Japanese Proficiency Language Test (JLPT) standards.

BACHELOR OF ARTS IN SPANISH

The B.A. degree in Spanish offers two tracks: 1) literature/culture emphasis and 2) applied language emphasis (Business Spanish and Translating). Each track consists of 30 hours of courses in Spanish, plus a one-hour Senior Seminar (LACS 4690). Students majoring in Spanish are strongly encouraged to take courses in another language at least through the Intermediate level. Both tracks require a core of 3 courses:

- SPAN 3201*
- SPAN 3202*
- SPAN 3208

*Note: SPAN 3203 plus one additional 3000/4000-level SPAN course may substitute for both SPAN 3201 and 3202

The literature/culture emphasis then requires:

- SPAN 3209 or 3210
- SPAN 3211
- SPAN 3212
12 hours (4 courses) of Spanish at the 4000-level (at least three of these courses must be in literature/culture); for example: SPAN4201, 4202, 4205, 4206, 4210, 4211, 4212, 4213, 4214, 4215, 4216, 4217)
- LACS 4690

The applied language emphasis requires, in addition to the three core courses:

- SPAN 3209 or SPAN 3210
- SPAN 3211 or SPAN 3212
- SPAN 3220
12 hours (4 courses) of additional SPAN or TRAN 4000-level courses (at least three of these courses must be in applied Spanish; for example: SPAN 4120, 4121, 4122, 4231, 4232, 4233, TRAN 4402, 4403, 4404)
- LACS 4690

TEACHER LICENSURE

The student seeking licensure to teach a foreign language must fulfill the General Education requirements, the foreign language major, two foreign language teaching methods courses, and satisfy all other requirements specified by the College of Education.

SPANISH HONORS

For those students who maintain a 3.5 GPA after 21 hours in either of these major tracks, the Department offers an Honors option. Students who choose to participate in the Spanish Honors Program must complete an additional 6 hours by having a 6-hour or longer study abroad experience or a professional internship experience of 6 hours (SPAN 4410) or both a 3-hour study abroad and a 3-hour internship or service experience. Honors students must also
take SPAN 4400, where they will write an Honors thesis that must be defended before the departmental Honor’s Committee. In addition, students in the Honors option must also study another language at least through 2202 (the end of the Intermediate level).

LATIN AMERICAN STUDIES
Students pursuing a degree in Latin American Studies should consult the LTAM program in the Department of History section of this Catalog for a description of their language requirements.

MINOR IN CLASSICAL STUDIES

The minor in Classical Studies focuses a student’s interest in ancient Mediterranean history and provides a foundation for advanced work in other academic disciplines as well as professional programs in law, medicine and finance. The minor gives students an opportunity to develop a keener perception and better understanding of the cultural forces at work in the contemporary world. By presenting a broad selection of courses in the various disciplines of literature, philosophy and history, the minor provides students with a sound overview of Western antiquity.

REQUIREMENTS
The minor requires a minimum of 18 hours of course work distributed over at least three of the following five areas of study:

1) Languages: LATN 1202 or higher, or GREK 1202 or higher.

2) Ancient Material Culture: For example, ARTH 3320 - Egypt and Ancient Near Eastern Art; ARTH 3322 - Ancient Greek Art; ARTH 3323 - Ancient Roman Art; ANTH 2152 - Introduction to Archaeology; ANTH 3152 - Early Civilizations; any pre-approved, structured tour of Italy or Greece granting official academic credit from a recognized post-secondary institution.

3) Ancient History: For example, HIST 3101 History of Greece, HIST 3102 History of Rome

4) Greek and Roman Literature: For example, RELS 3101 Greek Myths and Religion, ENGL 4111 Ancient World Literature

5) Greek and Roman Thought: For example, POLS 3171 History of Classical Political Philosophy, PHIL 3010 Ancient Philosophy, PHIL 3110 Medieval Philosophy.

This is not an exhaustive list of courses that may be applied to the degree. There are many LBST 2101 and LBST 2212 courses that may be appropriate for the Ancient History. Other courses, such as topics courses and private readings that focus on subjects from Western antiquity may be approved in any of the categories by the classics coordinator in the Department of Languages and Culture Studies. To make a request for course approval, submit the syllabus to the coordinator.

MINOR IN FRENCH
A minor in French requires FREN 2201, 2202, 2207, 3201, 3202, 3203, and 3209. Students who wish to count FREN 2210 toward the minor may take it in lieu of FREN 2207 or 3203.

MINOR IN GERMAN
A minor in German requires 18 hours, as follows: GERM 2201, 2202, 3201, 3202 and six additional hours at the 3000 or 4000-level. A student waived from GERM 2201 and/or 2202 must take the equivalent number of hours in 3000- or 4000-level courses.

MINOR IN JAPANESE
A minor in Japanese requires six courses and at least 20 hours above the 1202 level, as follows: JAPN 2201, 2202, 3201, 3202, 3209, and 3800.

MINOR IN RUSSIAN
A minor in Russian consists of seven courses above the 1202 level, as follows: RUSS 2201, 2202, 3201, 3050, 3202, 3203, and 3800.

MINOR IN SPANISH
A minor in Spanish consists of 15 hours above the 2202 level as follows: SPAN 3201 and SPAN 3202 (or SPAN 3203 plus one additional SPAN course at the 3000/4000-level), and SPAN 3208, plus 6 additional hours at either the 3000 or 4000-level.

CERTIFICATE IN BUSINESS LANGUAGES
The Certificate in Business Language program (CBL) provides classroom, overseas (optional), and practical training in French, German, or Spanish for international business, which may also be recognized by international examinations. Beginning with an alternative fourth-semester course, the sequence continues with advanced-level course work that includes a two-semester component in advanced business French, German, or Spanish. In order to be awarded the CBL, each course that counts for the certificate must be completed with at least a grade of B. Majors in any field are welcome.

CERTIFICATE IN TRANSLATING
A Certificate in Translating (CT) in the French-English, German-English, Russian-English, or
Spanish-English sequences may be earned by completion of TRAN 3401, 4402 F/G/R/S, 4403 F/G/R/S and 4404 F/G/R/S, with a grade of B or above in each course. The CT is not equivalent to a major in a foreign language; rather, it represents a theory-based skill developed at the bachelor’s degree level. The CT may complement a major in any field, and is especially recommended for majors and minors in French, German, Russian, Spanish, International Studies, or International Business. All courses for the CT involve, but are not limited to, translating into English from the source text.

Department of Mathematics and Statistics

Chair: A. Dow
Associate Chair: M. Kazemi
Bonnie E. Cone Distinguished Professor in Teaching Emerita: M. Leiva
Assistant Professors Emeritus: W. Roth, M. Stewart, H. Wright
Coordinator of Graduate Program: J. Avrin
Coordinator of Undergraduate Program: K. Harris
Coordinator of Mathematics Education: V. Cifarelli

Mathematics has important applications to numerous areas ranging from economics and other social sciences to physics and engineering. It is a challenging and interesting area to study in its own right with a broad and varied curriculum. Of course, graduates with a major in mathematics can become teachers and are in very high demand. However, according to a recent national survey, the majority are employed in careers with private for profit employers. The leading occupations include:

- Accounting and Finance
- Computer Programming
- Sales and Marketing
- Management and Related Positions
- Actuarial
- Computer Systems Analysis
- Statistical and Mathematical Modeling
- Health and Social Services

Career choices for students who concentrate in Statistics would also include those related to the environment, food and drug industry, and the energy sector. Mathematics majors rank the highest in performance on both the LSAT and the GMAT standardized tests for law school and graduate level business programs respectively.
The department offers graduate programs leading to master's and doctoral degrees. The Ph.D. degree is available in Applied Mathematics. The M.A. degree is available in Mathematics Education. The M.S. degree in Mathematics has tracks in General Mathematics, Applied Mathematics, and Applied Statistics. Additional information on these programs can be found in the UNC Charlotte Graduate Catalog.

**BACHELOR OF ARTS IN MATHEMATICS**

A major in Mathematics for the B.A. degree consists of a minimum of 34 hours of approved mathematics, operations research or statistics courses, including MATH 1241, 1242, 2241, 2242, 2164, 2171, 3163, and 3688; 12 additional hours of approved courses numbered 3000 or above; and MATH 3689 or 3791.

A major in Mathematics also requires ITCS 1212, ITCS 1212L, and related work consisting of 18 hours of approved courses in an area outside the Department of Mathematics and Statistics. All students must meet the General Education requirements of the University.

**CONCENTRATION IN ACTUARIAL SCIENCE**

A Bachelor of Arts degree in Mathematics with an option in Actuarial Science consists of a minimum of 37 hours of mathematics and statistics courses including MATH 1241, 1242, 2241, 2242, 2164, 2171, 2428, 3163, 3688, and 3689. Upper-division courses must include MATH 3122, 3123, 3128, and 3129. It is strongly recommended that students also take STAT 3110 or 3150.

The program also requires ITCS 1212 and ITCS 1212L and at least 18 hours of related work consisting of ACCT 2121, 2122, ECON 2101, 2102, FINN 3120, and 3271. In addition, it is strongly recommended that students take FINN 3272 or 3273. All students must meet the General Education requirements of the University.

**CONCENTRATION IN STATISTICS**

A Bachelor of Arts degree in Mathematics with a Concentration in Statistics consists of a minimum of 34 hours of mathematics and statistics courses including MATH 1241, 1242, 2241, 2242, 2164, 3688, 3689, STAT 2122, STAT 2223 and STAT 3110. Upper level courses must include three courses from STAT 3140, 3150, 3160, and 4116.

A Bachelor of Science degree in Mathematics with a Concentration in Statistics consists of a minimum of 40 hours of mathematics and statistics courses including MATH 1241, 1242, 2241, 2242, 2164, 3688, 3689; STAT 2122 and STAT 3110. Upper level courses must include MATH 3141, STAT 3122, 3123, and any three courses from STAT 3140, 3150, 3160, and 4116.

It is strongly recommended that students in the Statistics Concentration Program take ITCS 3160 Data Design and Implementation.

**BACHELOR OF ARTS IN MATHEMATICS FOR BUSINESS**

A major in Mathematics for Business for the B.A. degree consists of a minimum of 36 hours of approved mathematics, operations research, or statistics courses, including MATH 1120, MATH 2120, STAT 2223, MATH 2428, STAT 3110, OPRS 3111, and MATH 4051; and 9 additional hours of MATH, STAT, or OPRS numbers 3000 and above.

Additionally required are ITCS 1212, ITCS 1212L and related work consisting of 18 hours of approved courses in an area outside the Department of Mathematics and Statistics or an officially approved University minor. All students must meet the General Education requirements of the University.

*Students applying for either the B.A. or B.S. degree in Mathematics or Mathematics for Business must have a grade point average of at least 2.0 in each of the following categories: (1) all MATH, STAT, and OPRS courses taken and (2) all 2000-level and above MATH, STAT, and OPRS courses taken.

**BACHELOR OF SCIENCE IN MATHEMATICS**

A major in Mathematics for the B.S. degree consists of a minimum of 40 semester hours of approved MATH, STAT or OPRS courses. In addition to the requirements for the B.A. degree, the major in Mathematics for the B.S. degree requires the completion of six additional hours of approved mathematics, operations research, or statistics courses numbered 3000 or above (exclusive of MATH 3163), as well as a minimum of 11 hours of science courses. Upper-division courses must include MATH 3141, 3142, and at least one course from among STAT 3123 and MATH 4163, 4164, 4181, and 5143.
BACHELOR OF SCIENCE IN MATHEMATICS FOR BUSINESS*

A major in Mathematics for Business for the B.S. degree* consists of a minimum of 45 hours of approved mathematics, operations research, or statistics courses, including in its core: MATH 1241, MATH 1242, MATH 2241, MATH 2164, MATH 2171, STAT 2122, STAT 2223, MATH 2428, STAT 3110, OPRS 3111, and MATH 4051. It is recommended and permitted that students take MATH/STAT 3122 and MATH/STAT 3123 in place of STAT 2122 and STAT 2223. Additionally, ITCS 1212, ITCS 1212L, and related work consisting of 18 hours of approved courses in an area outside the Department of Mathematics and Statistics or an officially approved University minor are required. Furthermore, all students must meet the General Education requirements of the University.

Students majoring in Mathematics for Business must select from one of three concentrations:

CONCENTRATION IN ECONOMICS/FINANCE
A BS degree in Mathematics for Business requires MATH 4122, MATH 4128, STAT 3150, and an additional 3000 or 4000-level course in MATH, STAT, or OPRS.

CONCENTRATION IN ACTUARIAL SCIENCE
A BS degree in Mathematics for Business requires MATH 3128, MATH 3129, STAT 3150, and an additional 3000 or 4000-level course in MATH, STAT, or OPRS.

CONCENTRATION IN OPERATIONS RESEARCH
A BS degree in Mathematics for Business requires OPRS 3112, OPRS 4113, OPRS 4114, and an additional 3000 or 4000-level course in MATH, STAT, or OPRS.

*Students applying for either the B.A. or B.S. degree in Mathematics or Mathematics for Business must have a grade point average of at least 2.0 in each of the following categories: (1) all MATH, STAT, and OPRS courses taken and (2) all 2000-level and above MATH, STAT, and OPRS courses taken.

TEACHER LICENSURE IN MATHEMATICS

Students preparing for licensure to teach mathematics in secondary school (grades 9-12) must major in Mathematics. They may select either the B.A. or the B.S. degree track, but their coursework must include MATH 3181 and 4109; MAED 3103, 3105, and 3252; and a STAT course together with a minor in Secondary Education. Before the end of the Sophomore year, students should complete MDSK 2100 and obtain an application for formal admission to the teacher education program in the Department of Middle, Secondary, and K-12 Education. Detailed information is available in the Department of Mathematics and Statistics office. Licensure applications are the responsibility of the student and the Office of Teacher Education, Advising, and Licensure in the College of Education.

MINOR IN MATHEMATICS

A minor in Mathematics requires 18 semester hours including MATH 1241 and 1242; at least one of MATH 2164 and 2171; one additional course from MATH 2241, 2242, 2164 and 2171, STAT 2122, or any three-hour MATH, STAT, or OPRS 3000 or above; two three-hour MATH, STAT, or OPRS course numbered 3000 or above; and an average GPA of at least 2.0 in these courses.

MINOR IN ACTUARIAL MATHEMATICS

A minor in Actuarial Mathematics requires MATH 1241, 1242, 2241, 2164, 2428, 3128, and MATH/STAT 3122; and a minimum average GPA of 2.0 in these courses.

Completion of these courses will help prepare the student for the first two actuarial examinations administered by the Society of Actuaries and the Casualty Actuarial Society. The first actuarial exam should be taken after completing MATH 3122/3123, and the second examination after completing MATH 3128. Further examinations cover material contained in MATH 3129.

HONORS PROGRAM IN MATHEMATICS

The purpose of the Honors Program in mathematics is to stimulate the imagination and deepen the understanding of students by encouraging independent study and to provide recognition of exceptional achievements in mathematics. Students who complete the requirements of the program graduate with Honors in mathematics.

ADMISSION

Entrance to the Department of Mathematics and Statistics Honors Program is granted by the Department of Mathematics and Statistics, based on the following minimum requirements: (1) Junior or Senior standing; (2) at least 20 hours in mathematics, including MATH 1241, 1242, 2241, 2171, 2164, and 3163; and (3) a grade point average of not less than 3.0 in mathematics courses and in all University courses.

Students must apply to the Department of Mathematics and Statistics for admission to the program and, if admitted, must select a mathematics faculty member who is willing to serve as an Honors advisor. The Department recommends students admitted to the program to the University Honors Council for formal admission to Honors candidacy. (In order to graduate with Honors the University
requires that students be admitted to Honors candidacy at least two semesters before graduation.

HONORS COURSES
A Junior Honors Seminar (MATH 3790) and a Senior Honors Tutorial (MATH 3791) are offered, both of which may be repeated for credit.

CERTIFICATION REQUIREMENTS
The requirements for graduation with Honors are: (1) completion of all requirements for a Bachelor of Science degree in Mathematics with a grade point average of 3.00 or above; (2) a grade point average of 3.25 or above in all mathematics, operations research and statistics courses and a GPA of 3.5 or above in all mathematics Honors courses; (3) completion of at least six hours of Senior honors tutorial (MATH 3791) with a GPA of 3.5 or above, culminating in an Honors thesis approved by the Department of Mathematics and Statistics; and (4) recommendation by the Department of Mathematics and Statistics to the University Honors Council that the student graduate with Honors.

Either the student or the department may withdraw the student from the Department Honors Program. If the date for dropping courses has passed when the student leaves the program, the student must complete any courses currently in progress in order to receive passing grades in the courses.

COOPERATIVE EDUCATION PROGRAM
A student may participate in the Mathematics Cooperative Education Program in either the parallel or alternate track. The parallel track combines part-time academic study and part-time cooperative experience during the same semester, while the alternate track alternates semesters totally devoted to work with semesters totally devoted to academic study. Students in the Mathematics Cooperative Education Program must participate in a minimum of two semesters in the program. Students who are in good standing with the University, have a minimum overall GPA of 2.5, and have completed 30 credit hours are eligible to apply. Transfer students are required to complete 12 credit hours at the University prior to application. Students interested in participating in the program should contact the Coordinator of Undergraduate Programs in the Department of Mathematics and Statistics or the University Career Center for information.

Department of Philosophy

Chair: M. Croy
Mecklenburg County Medical Society Distinguished Professor in Healthcare Ethics: R. Tong
Professors: M. Croy, W. Gay, M. Kelly
Associate Professors: E. Souffrant
Assistant Professors: E. Bianchi, G. Hull, R. James, L. Rasmussen
Lecturers: D. Boisvert, M. Sanders, J. Tristan
Professors Emeritus: S. Fishman, L. Kaplan, J. Lincourt, J. Presler, W. Shumaker

Philosophy is reasoned inquiry about the nature of persons, reality, thought, knowledge, values, and beauty. It seeks to establish standards of evidence, to provide rational methods of resolving conflicts, and to create techniques for evaluating fundamental ideas, principles and arguments in all areas of human existence and knowledge. Equally concerned with human endeavor in both the arts and the sciences, philosophy continues to reside at the core of a liberal education.

Students major or minor in philosophy because of their desire to pursue fundamental ideas, principles, and arguments in general or in relation to other disciplines. Philosophy helps students develop strong skills in writing, critical thinking, reading, and understanding complex texts. These skills are indispensable for any committed and concerned citizen. The study of philosophy also provides a deeper understanding and enjoyment of the challenges and issues people face throughout their personal and professional lives.

Students may choose to major solely in philosophy, or to pursue it as a second major or as a minor. As several members of the department teach regularly within interdisciplinary studies, many philosophy courses introduce a wide range of ethical, political, scientific, technological, literary, and aesthetic ideas into discussions of philosophical issues. Courses in critical thinking and logic are a benefit to students in all their coursework and can be especially useful to students who plan to enter graduate school law school, or other professional schools. Given the Department of Philosophy’s association with the Center for Professional and Applied Ethics, many philosophy courses give students a deeper understanding of contemporary issues in business, law, medicine, public policy, information technology, and environmental studies.
BACHELOR OF ARTS IN PHILOSOPHY

A major in philosophy leading to a B.A. degree consists of a minimum of 33 semester hours in philosophy, at least 18 of which are earned at UNC Charlotte with a grade of C or above, with no more than six hours below the 3000-level counting toward the major. A GPA of 2.5 is required for all philosophy courses applied to the major. Majors are strongly encouraged (but not required) to take the Senior Seminar, a capstone course, in one of their last three semesters.

FOREIGN LANGUAGE REQUIREMENT

Students majoring in philosophy must complete either a 2000-level course in a foreign language that uses the Latin alphabet (French, German, Italian, Spanish, etc.) or a 1202-level course in a foreign language that is not written in the Latin alphabet (Greek, Hebrew, Japanese, Russian, etc.), or demonstrate proficiency at that level. Intermediate American Sign Language is accepted. Non-native speakers of English may complete the foreign language requirement by passing ENGL 1101 and ENGL 1102 or the equivalent.

MAJOR REQUIREMENTS

Students who major in philosophy are required to take the following courses and types of courses:

INTRODUCTION TO PHILOSOPHY (3 hours)
PHIL 2101 Introduction to Philosophy or PHIL 2102 Introduction to Philosophy—Writing Intensive

LOGIC (3 hours)
PHIL 2105 Deductive Logic
(PHIL 1105 Critical Thinking is not required, but strongly recommended)

HISTORY/GENEALOGY (9 hours)
PHIL 3010 Ancient Philosophy and
PHIL 3020 Modern Philosophy and one of the following:
PHIL 3030 Twentieth Century Philosophy
PHIL 3110 Medieval Philosophy
PHIL 3120 Nineteenth Century Philosophy
PHIL 3130 American Philosophy
PHIL 3140 Existentialism
PHIL 3170 Major Figure
PHIL 3190 Topics in History/Genealogy

ETHICS/AESTHETICS (6 hours)
PHIL 3210 Ethical Theory and one of the following:
PHIL 3220 Health Ethics
PHIL 3230 Healthcare Ethics
PHIL 3310 IT Ethics
PHIL 3320 Engineering Ethics
PHIL 3330 Philosophy and Literature
PHIL 3340 Business Ethics
PHIL 3390 Topics in Ethics/Aesthetics

KNOWLEDGE/LANGUAGE (6 hours)
PHIL 3410 Knowledge and Reality and one of the following:
PHIL 3420 Philosophy of Language
PHIL 3430 Mind, Cognition, and Behavior
PHIL 3510 Advanced Logic
PHIL 3520 Philosophy of Science
PHIL 3530 Philosophy of Religion
PHIL 3590 Topics in Knowledge/Language

IDENTITY/SOCIETY (6 hours)
PHIL 3810 Social and Political Philosophy and one of the following:
PHIL 3820 Feminist Philosophy
PHIL 3830 Philosophy and Race
PHIL 3910 Philosophy of War and Peace
PHIL 3920 Philosophy of Technology
PHIL 3930 Philosophy of Body
PHIL 3940 Philosophy of Education
PHIL 3990 Topics in Identity/Society

MINOR IN PHILOSOPHY

A minor in Philosophy consists of 18 semester hours in philosophy, at least twelve of which are earned at UNC Charlotte with a grade of C or above, with no more than six hours below the 3000-level counting toward the minor. Students who elect the minor are required to take the following courses and types of courses:

INTRODUCTION TO PHILOSOPHY (3 hours)
One course from the following:
PHIL 2101 Introduction to Philosophy
PHIL 2102 Introduction to Philosophy—Writing Intensive

LOGIC (3 hours)
One course from the following:
PHIL 1105 Critical Thinking
PHIL 2105 Deductive Logic
PHIL 3510 Advanced Logic

HISTORY/GENEALOGY (6 hours)
Two courses from the following:
PHIL 3010 Ancient Philosophy
PHIL 3020 Modern Philosophy
PHIL 3030 Twentieth Century Philosophy
PHIL 3110 Medieval Philosophy
PHIL 3120 Nineteenth Century Philosophy
PHIL 3170 Major Figure

ETHICS/AESTHETICS OR KNOWLEDGE/LANGUAGE OR IDENTITY/SOCIETY (6 hours)
Two additional courses selected from among those listed above in the following categories:
- Ethics/Aesthetics or
- Knowledge/Language or
- Identity/Society
HONORS PROGRAM IN PHILOSOPHY

Students seeking a greater academic challenge may contact the Department Chair with a request to pursue the Honors Track within the philosophy major. Honors work may be undertaken as early as the first semester a student is enrolled at the University. Graduation with Honors will be noted on the student’s transcript and the phrase “Honors in Philosophy” inscribed on the student’s diploma.

To qualify for graduation with Honors in Philosophy a student must receive the recommendation of the Honors Committee in Philosophy. The Honors Committee will consider as candidates for graduation with Honors in Philosophy students who have completed the standard philosophy major and the following requirements: (a) one three-hour course chosen by the student from University Honors Program courses; (b) a grade of A for three hours of Honors Thesis research (which count toward the 33-hour major requirement); (c) oral presentation of the Honors Thesis before the Department of Philosophy Honors Committee, other faculty, and students; (d) GPA of at least 3.5 in all Philosophy courses counted toward the major; and (e) GPA of at least 3.5 for all departmental and University Honors Program courses submitted towards graduation with Honors.

Department of Physics and Optical Science

Chair: G. Boreman
Professors Emeritus: R. Vermillion, J. Werntz
Professors: T.M. Corwin, F. Farahi, M. Fiddy, E. Johnson, Y. Raja
Associate Professors Emeritus: T. Mayes, W. Melton, E. Oberhofer, H. Simpson
Assistant Professors: A. Baumketner, G. Gbur, A. Jofre, Y. Nesmelov
Lecturers: E. Benchich, P. Leilabady, A. Sharma
Adjunct Professors: D. Duggar, J. Gaiser, R. Ingel, S. Mosier, E. Track, R. Tsu

A physics major can lead to many challenging, exciting, and productive careers. Students majoring in physics enter a variety of technical fields, attend medical school, teach in high school, or attend graduate school. Research physicists work in industry and government, in laboratories and hospitals, and on university campuses. The Department offers programs leading to the Bachelor of Arts and Bachelor of Science degrees with additional concentrations in astrophysics and optical science. In addition, the Department offers dual degree programs in Physics and Computer, Electrical, or Mechanical Engineering.

BACHELOR OF ARTS IN PHYSICS

The Bachelor of Art degree is appropriate for students seeking an in-depth understanding of physics within the context of a broader education. This curriculum allows the greatest freedom in choosing electives offered by other departments, and is ideal for students wishing to pursue double majors, matching physics with another discipline. A major in Physics leading to the B.A. degree consists of at least 33 semester hours of physics with an average of C or above. The 33 hours of physics must include eight hours in an introductory sequence of either PHYS 1101, 1102, 1101L, and 1102L or PHYS 2101, 2102, 2101L, and 2102L. The remaining 25 hours must include PHYS 1000, PHYS 3101, PHYS
3121, PHYS 3141, PHYS 4231, PHYS 4241, either PHYS 3282 or PHYS 3283, plus six additional hours at the 3000-4000-level. Also required are CHEM 1251, 1251L and MATH 1241, 1242, 2171, 2241, and 2242. Students may substitute PHYS 3220 for MATH 2242. PHYS 3000, 3900, 4000, or 4800 may be used to fulfill the 33-semester hour requirement only if approved in advance for this purpose by the Undergraduate Studies Committee. Freshmen should complete MATH 1241 before the beginning of their second year.

TEACHER LICENSURE

Students interested in teaching physics in high school should take both PHYS 3282 and PHYS 3283. In addition to meeting the requirements for the physics degree, students who plan to become licensed teachers must minor in Secondary Education. These students should contact the Office of Teacher Advising and Licensure (TEAL) in the College of Education regarding teacher licensure.

BACHELOR OF SCIENCE IN PHYSICS

The Bachelor of Science degree is appropriate for students planning to pursue physics as a professional career, either immediately after graduation in a physics-related industry or after graduate study in physics or a related field. A major in Physics leading to the B.S. degree consists of at least 48 semester hours of physics with an average of C or above. The 48 hours of physics must include eight hours in an introductory sequence of PHYS 2101, 2102, 2101L, and 2102L. Under special circumstances, and with the approval of the Undergraduate Studies Committee, PHYS 2101, 2102, 2101L, and 2102L may be substituted for the PHYS 2101-2102 sequence. The remaining 40 hours must include PHYS 1000, PHYS 3101, PHYS 3121, PHYS 3141, PHYS 3151, PHYS 3210, PHYS 3282, PHYS 3283, PHYS 4222, PHYS 4231, PHYS 4232, PHYS 4241, and at least six additional hours at the 3000-4000-level. PHYS 3000, 3900, 4000, or 4800 may be used to fulfill the 48-semester hour requirement only if approved in advance for this purpose by the Undergraduate Studies Committee. Also required are CHEM 1251, 1251L, MATH 1241, 1242, 2171, 2241, and 2242. Students may substitute PHYS 3220 for MATH 2242. Freshmen should complete MATH 1241 before the beginning of their second year. Students planning for graduate study in physics are strongly advised to take PHYS 4242 as part of their 3000-4000-level elective hours.

BACHELOR OF SCIENCE IN PHYSICS WITH A CONCENTRATION IN PHYSICS TEACHER LICENSURE

In addition to meeting the requirements for the physics degree, students who plan to become licensed teachers must minor in Secondary Education. These students should contact the Office of Teacher Advising and Licensure (TEAL) in the College of Education regarding teacher licensure.

BACHELOR OF SCIENCE IN PHYSICS WITH A CONCENTRATION IN ASTROPHYSICS

The Bachelor of Science with a Concentration in Astrophysics degree is appropriate for students who wish to pursue careers and/or graduate study in astrophysics. A major in Physics leading to the B.S. degree with a concentration in astrophysics option consists of at least 48 semester hours of physics with an average of C or above. The 48 hours of physics must include eight hours in an introductory sequence of PHYS 2101, 2102, 2101L, and 2102L. Under special circumstances, and with the approval of the Undergraduate Studies Committee, PHYS 1101, 1102, 1101L, and 1102L may be substituted for the PHYS 2101-2102 sequence. The remaining 40 hours must include PHYS 1000, PHYS 3101, PHYS 3121, PHYS 3141, PHYS 3151, PHYS 3160, PHYS 3161, PHYS 3210, PHYS 3282, PHYS 3283, PHYS 4231, PHYS 4241, PHYS 4242, and at least three additional hours at the 3000-4000-level. PHYS 3000, 3900, 4000, or 4800 may be used to fulfill the 48-semester hour requirement only if approved in advance for this purpose by the Undergraduate Studies Committee. Also required are CHEM 1251, 1251L, MATH 1241, 1242, 2171, 2241, and 2242. Students may substitute PHYS 3220 for MATH 2242. Freshmen should complete MATH 1241 before the beginning of their second year.

BACHELOR OF SCIENCE IN PHYSICS WITH A CONCENTRATION IN OPTICAL SCIENCE

The Bachelor of Science with a Concentration in Optical Science degree is appropriate for students who wish to pursue careers and/or graduate study in the discipline of optical science. Students are required to complete courses in addition to those in the traditional branches of physics that will broaden their understanding of waves and optics, electrodynamics, and modern optics. A major in Physics leading to the B.S. degree with a concentration in optical science consists of at least 48 semester hours of physics and engineering with an average of C or above. The 48 hours must include eight hours in an introductory sequence of PHYS 2101, 2102, 2101L, and 2102L. Under special circumstances, and with the approval of the
Undergraduate Studies Committee, PHYS 1101, 1102, 1101L, and 1102L may be substituted for the PHYS 2101-2102 sequence. The remaining 40 hours must include PHYS 1000, PHYS 3101, PHYS 3121, PHYS 3141, PHYS 3210, PHYS 3282, PHYS 4231, PHYS 4232, PHYS 4241, PHYS 4271, PHYS 4281, at least six additional hours at the 3000-4000-level, and EGR 4125. Also required are CHEM 1251, 1251L, MATH 1241, 1242, 2171, 2241, and 2242. Students may substitute PHYS 3220 for MATH 2242. PHYS 3000, 3900, 4000, or 4800 may be used to fulfill the 48-semester hour requirement only if approved in advance for this purpose by the Undergraduate Studies Committee. Freshmen should complete MATH 1241 before the beginning of their second year.

**DUAL DEGREE PROGRAMS WITH ELECTRICAL & COMPUTER ENGINEERING**

The Department of Physics and Optical Science offers two dual degree opportunities with the Department of Electrical and Computer Engineering. These dual degrees are designed to broaden and enhance the education of students in engineering degree programs. Students can obtain a B.S. Physics and B.S. Electrical Engineering dual degree or a B.S. Physics and B.S. Computer Engineering dual degree. Students completing the dual degree can complete the “W” in the major requirement by taking 3 credit hours chosen from the following engineering courses: ECR 2155, ECR 2156, ECR 3155, ECR 3156, ECR 3253, or ECR 3254. Students in this dual degree program are not required to fulfill the College of Liberal Arts and Sciences foreign language requirement (see the CLAS General Education section in this Catalog for additional information).

**B.S.E.E. OR B.S. IN PHYSICS**

To obtain a dual B.S. degree in Electrical Engineering and Physics, an undergraduate student must complete all requirements for the B.S.E.E. degree as established by the Department of Electrical and Computer Engineering. In addition, the student must complete 12 hours of upper division physics courses specified by the Department of Physics and Optical Science. To meet the upper division physics requirements, students must complete the following courses: PHYS 3121 (Classical Mechanics), PHYS 4241 (Quantum Mechanics), and 6 elective hours chosen from a list of approved courses available from the Department of Physics and Optical Science. A B.S. in Physics under this program will be awarded at the same time as the B.S.E.E. The B.S. Physics degree will not be awarded in advance of the engineering degree.

**B.S.Cp.E./B.S. IN PHYSICS**

To obtain a dual B.S. degree in Computer Engineering and Physics, an undergraduate student must complete all requirements for the B.S. Cp.E. degree as established by the Department of Electrical and Computer Engineering. In addition, the student must complete 12 hours of upper division physics courses specified by the Department of Physics and Optical Science. To meet the upper division physics requirements, students must complete the following courses: PHYS 3121 (Classical Mechanics), PHYS 3141 (Introduction to Modern Physics), PHYS 4231 (Electricity and Magnetism), PHYS 4241 (Quantum Mechanics). Students must also complete MATH 2241. A B.S. in Physics under this program will be awarded at the same time as the B.S.Cp.E. The B.S. Physics degree will not be awarded in advance of the engineering degree.

**DUAL DEGREE PROGRAM WITH MECHANICAL ENGINEERING**

The Department of Physics and Optical Science offers a dual degree opportunity with the Department of Mechanical Engineering. The dual degree is designed to broaden and enhance the education of students in the engineering degree program. Students can obtain a B.S. Physics and B.S. Mechanical Engineering dual degree. Students completing the dual degree can complete the “W” in the major requirement by taking 3 credit hours chosen from the following engineering courses: MEGR 3171L, MEGR 3152, or MEGR 3251. Students in this dual degree program are not required to fulfill the College of Liberal Arts and Sciences foreign language requirement (see the CLAS General Education section in this Catalog for additional information).

**B.S.M.E. OR B.S. IN PHYSICS**

To obtain a dual B.S. degree in Mechanical Engineering and Physics, an undergraduate student must complete all requirements for the B.S.M.E. degree as established by the Department of Mechanical Engineering. In addition, the student must complete 12 hours of upper division physics courses specified by the Department of Physics and Optical Science. To meet the upper division physics requirements, students must complete the following courses: PHYS 3121 (Classical Mechanics), PHYS 4241 (Quantum Mechanics), and 3 elective hours chosen from a list of approved courses
available from the Department of Physics and Optical Science. A B.S. in Physics under this program will be awarded at the same time as the B.S.M.E. The B.S. Physics degree will not be awarded in advance of the engineering degree.

MINOR IN PHYSICS

A minor in Physics requires a minimum of 17 hours of physics with an average grade of C or above. There are two options:

OPTION 1
PHYS 2101, 2102, 2101L, 2102L, 3141, and at least six additional hours at the 3000-4000-level selected from a list of approved courses that is available in the Department of Physics and Optical Science. PHYS 3000, 3900, 4000, or 4800 may be used to fulfill the 17-semester hour requirement only if approved in advance for this purpose by the Undergraduate Studies Committee.

OPTION 2
PHYS 1101, 1102, 1101L, 1102L, 3101, 3141, and at least three additional hours at the 3000-4000-level selected from a list of approved courses that is available in the Department of Physics and Optical Science. PHYS 3000, 3900, 4000, or 4800 may be used to fulfill the 17-semester hour requirement only if approved in advance for this purpose by the Undergraduate Studies Committee.

HONORS PROGRAM IN PHYSICS

To obtain a degree with Honors in physics, a student must maintain at least a 3.0 average in all physics courses, complete PHYS 3900H (Senior Project), and successfully present the results of their project to a panel of faculty members. Details concerning this program are available from the Department of Physics and Optical Science.

COOPERATIVE EDUCATION PROGRAM

In the Cooperative Education Program, a student completes his/her lower-division coursework and, after being formally accepted as a co-op student, alternates periods of academic coursework with periods of full-time paid employment in an area mutually agreed upon by the student, an employer, and the University. Students who are in good standing with the University, have a minimum overall GPA of 2.5, and have completed 30 credit hours are eligible to apply. Transfer students are required to complete 12 credit hours at the University prior to application. Further information regarding the application procedure for admission into this program can be obtained from the University Career Center.

Department of
Political Science

Chair: R. Kravchuk
Professors Emeriti: T. Arrington, D. Dorin, D. Fleitas, N. Jamgotch, W. McCoy, T. Mead
Distinguished Professors: W. Brandon, C. Combs, K. Godwin
Professors: S. Brenner, M. Brown, H. Chernotsky, R. Kravchuk, J. Walsh
Assistant Professors: C. Avellaneda, S. Billings, R. Nesbit, J. Szmer
Lecturer: N. Caste

Political science is the study of politics: government, law, political behavior, public policy, and political philosophy. The political science curriculum is designed primarily to afford broad and modern training in the study of political institutions and political behavior for students in the liberal arts and majors planning graduate work. It also affords career-oriented or pre-professional training for teaching, law, business, public relations, or work in the mass media, domestic and foreign government service, the military, teaching, and a variety of active roles in politics.

On the graduate level, the Department offers the Master of Public Administration, a professional degree for persons seeking training in public administration with specialization in local government and non-profit management. The department is also one of the social science departments that offers an interdisciplinary Ph.D. in Public Policy. (For more information, see the UNC Charlotte Graduate Catalog.)

CAREERS WITH POLITICAL SCIENCE

Political science majors gain analytical skills and communication abilities that are valued in a wide spectrum of potential career areas. An undergraduate degree in political science can lead to interesting careers in local, state, or federal government; law; private businesses; international organizations; the
military; nonprofit organizations; political campaigns; journalism; teaching; public office; research and teaching at universities.

**BACHELOR OF ARTS IN POLITICAL SCIENCE**

A major in Political Science for the B.A. degree requires 30 semester hours of political science to include: (1) POLS 1110 (American Politics); (2) POLS 1130 (Comparative Politics); (3) POLS 1150 (International Politics); (4) POLS 2220 (Political Science Methods) or equivalent social science methods course; (5) at least one course in the subfield of Political and Legal Philosophy; and (6) at least one of the following courses: POLS 4110 (North Carolina Student Legislature), POLS 4163 (Model United Nations), POLS 4990 (Senior Thesis), or POLS 4600 (Senior Seminar). No more than nine hours of credit from POLS 4110, 4163, 4400, or 4800 can be offered to fulfill major requirements. POLS 2220 and one of the Senior courses listed above fulfill the writing intensive courses required for graduation.

**ADVANCED PLACEMENT PROGRAM**

Students who receive an evaluation of Qualified (3) or better on the Advanced Placement examination in American Politics will receive credit for POLS 1110. Students who receive an evaluation of Qualified (3) or better on the Advanced Placement examination in Comparative Politics will receive credit for POLS 1130.

**MINOR IN POLITICAL SCIENCE**

The political science minor requires 18 semester hours of political science. The student can choose any combination of courses with the POLS designation to fulfill this requirement with the following exceptions:

a) No more than nine hours of credit from POLS 4110, 4163, 4400 or 4800 can be offered to fulfill minor requirements.

b) Although students may repeat POLS 4110, 4163, 4400, or 4800 for credit, no more than three hours of credit from any one of these courses may be used to fulfill the requirements for the minor in political science.

**HONORS PROGRAM IN POLITICAL SCIENCE**

To graduate with Honors in Political Science and have this fact affixed to the student's transcript, a student must:

a) Comply with all of the requirements for a major in Political Science

b) Complete at least two Honors courses in the University Honors Program or in individual departments with a GPA at UNC Charlotte of at least 3.25

c) Have an overall GPA at UNC Charlotte of at least 3.25

d) Have a GPA of at least 3.4 in all Political Science courses taken at UNC Charlotte

e) Complete the Senior Thesis in Political Science (POLS 4990) with a grade of A and licensure of the Department Honors Committee that the thesis deserves a grade of A and is of Honors quality

To be certified as Honors quality, a thesis must contain original research and demonstrate a high degree of scholarship. Students seeking the Honors designation must notify the professor who is directing their thesis no later than the second week of classes that the thesis should be evaluated for Honors requirements. The directing professor will notify the Honors Committee. Faculty members who serve on the Honors Committee would not evaluate Senior theses completed under their supervision. Instead, the Honors Committee would ask another faculty member to evaluate the thesis in question along with the other two members of the Committee. If the Committee agreed to confer Honors on the student's thesis, it would certify this to the Department Chair. If the Committee decided that the thesis did not warrant Honors, the student would still receive whatever grade the faculty member supervising the thesis had assigned.
Department of Psychology

Chair: F. Cachelin
Associate Chair: L. Van Wallendael
Bonnie E. Cone Distinguished Professor in Teaching: A. Maisto
Bonnie E. Cone Distinguished Young Professor: R. Kilmer
Professors Emeritus: L. Diamant, D. Grimsley, P. Lamal, R. Simono
Associate Professors Emeritus: C. Fernald, C. Kaplan, J. Lee, G. Long, D. Sohn
Assistant Professors: M. Haber, J. Webb
Lecturers: M. Michael, E. O'Reilly, S. Spaulding

Psychology is the study of behavior. Psychologists are interested in discovering new knowledge about human and animal behavior and in applying that knowledge. Some of the questions psychology considers are:

- How do we learn and remember information?
- Why do people develop behavior disorders?
- What are the changes involved in moving from infancy to old age?
- How do other people influence our behavior?
- How is behavior regulated by the brain?
- How do we perceive the physical world?
- How do psychological factors affect physical health?

Psychology is a young and a dynamic science and profession. Most of what we know has been learned in the last 50 years. Much is left to be learned by the psychologists of the future.

The Department of Psychology offers a Bachelor of Arts (B.A.), a Bachelor of Science (B.S.), an undergraduate minor in Psychology, a Master of Arts (M.A.) degree, an interdisciplinary Ph.D. in Health Psychology, and an interdisciplinary Ph.D. in Organizational Science. The primary objective of the undergraduate programs is to provide a solid background in the fundamentals of psychology as a science. Graduates of the program should be prepared for a variety of careers or for graduate study.

Although many careers in psychology require an advanced degree, opportunities for individuals with a bachelor's degree in psychology include serving as a teacher or psychological assistant in social service agencies, mental health centers, child care centers, centers for the mentally challenged or the emotionally disturbed, and juvenile delinquent or predelinquent homes. Students whose interests are more laboratory-oriented might become laboratory technicians or research assistants. Also, psychology majors find their skills useful in various areas of business, such as management, advertising, personnel, public relations, and marketing.

Graduate school is a possibility after the student completes the B.A. or the B.S. degree. For a psychologist with a master's degree or doctorate, the career opportunities grow (see UNC Charlotte Graduate Catalog for information on the M.A. and Ph.D. programs). In addition, many psychology graduates broaden their skills by attending graduate schools in the areas of business, counseling, criminal justice, education, and law.

BACHELOR OF ARTS IN PSYCHOLOGY

A major in psychology leading to the B.A. degree consists of 34 hours of psychology. These hours must include General Psychology (1101 and 1101L); Research Methodology (2101 and 2103); two courses from each of two Restricted Elective categories; Scientific Foundations of Practice and Scientific Psychology; three unrestricted psychology electives, and a Capstone course.

CAPSTONE COURSES

Capstone Courses serve as a culminating experience for the undergraduate program. Selection of a capstone course should be made with future career and educational goals in mind. Enrollment in a capstone course requires the student to have completed 90 or more hours of coursework, have a C or above in PSYC 2103 (Research Methods II), and any additional prerequisites as required by the individual course. A capstone course may not be taken during the same term as Research Methods II without the permission of the department. Students may select their capstone from the following list of courses:

- PSYC 4603 History and Systems (3)
- PSYC 4606 Advanced Topics in Psychology (3)
- PSYC 4612 Seminar in Behavior Modification (3)
- PSYC 4613 Seminar in Physiological Psychology (3)
PSYC 4619 Seminar in Experimental Psychology (3)
PSYC 4625 Seminar in Developmental Psychology (3)
PSYC 4630 Seminar in Social Psychology (3)
PSYC 4650 Seminar in Human Adaptation and Behavior (3)
PSYC 4655 Seminar in Community Psychology (3)
PSYC 4660 Seminar in Health Psychology (3)
PSYC 4670 Seminar in I/O Psychology (3)
PSYC 4691 Honors Thesis II (3) (O, W)

SCIENTIFIC FOUNDATIONS OF PRACTICE
Students will select two courses from the following areas (each course must be from a different area):

- Area 1: Individual Differences and Dysfunctional Behavior (PSYC 2150, 3135, 3151)
- Area 2: Human Development (PSYC 2120, 2121, 2124)
- Area 3: Practice (PSYC 2160, 2171, 3155)

SCIENTIFIC PSYCHOLOGY
Students will select two courses from the following:

- Biological Aspects (PSYC 3110, 3113, 3115, 3117)
- Cognitive/Affective Aspects (PSYC 3111, 3114, 3116, 3136)
- Social Aspects (PSYC 3130)
- Psychological Measurement (PSYC 3140)

ELECTIVES
Students must select at least nine hours of electives in psychology to fulfill the 34-hour requirement for the B.A.

Electives should be selected to aid the student in the attainment of personal goals. Please note, though, that the student may not include more than three credit hours in PSYC 3405 and six credit hours in PSYC 3806 in the 32-hour requirement of the major. However, an additional six hours of PSYC 3405 and additional hours of PSYC 3806 may be included in the 120 hours required for the B.A.

OTHER B.A. DEGREE REQUIREMENTS
Other specific requirements for the B.A. degree include: STAT 1222 (Elements of Statistics), and majors must satisfy the University General Education requirements listed for the Bachelor of Arts Degree.

RELATED WORK
Students pursuing a B.A. in Psychology are expected to be exposed to a depth of knowledge in at least one domain outside of psychology through their completion of the Related Work Requirement. Related Work should be considered in terms of the fulfillment of individual educational and vocational aspirations. Students must select one of the following options:

1) Complete a second major
2) Complete a minor in a domain outside Psychology

GRADE REQUIREMENTS

A GPA of 2.0 must be achieved for the major, as well as for the second major or minor. A grade of C or above in PSYC 1101, PSYC 1101L, PSYC 2101, PSYC 2103, a statistics course, and the Capstone course is required to progress in the major.

BACHELOR OF SCIENCE IN PSYCHOLOGY

A major in psychology consists of 34 hours of psychology courses. These hours must include General Psychology (PSYC 1101 and 1101L), Research Methodology I and II (PSYC 2101 and 2103), two courses from each of two Restricted Elective categories: Scientific Foundations of Practice and Scientific Psychology, three unrestricted psychology electives, a Capstone course, and a Reasoning and Natural Science requirement.

CAPSTONE COURSES
Capstone Courses serve as a culminating experience for the undergraduate program. Selection of a capstone course should be made with future career and educational goals in mind. Enrollment in a capstone course requires the student to have completed 90 or more hours of coursework, have a C or above in PSYC 2103 (Research Methods II), and any additional prerequisites as required by the individual course. A capstone course may not be taken during the same term as Research Methods II without the permission of the department. Students may select their capstone from the following list of courses:

- PSYC 4603 History and Systems (3)
- PSYC 4606 Advanced Topics in Psychology (3)
- PSYC 4612 Seminar in Behavior Modification (3)
- PSYC 4613 Seminar in Physiological Psychology (3)
- PSYC 4619 Seminar in Experimental Psychology (3)
- PSYC 4625 Seminar in Developmental Psychology (3)
- PSYC 4630 Seminar in Social Psychology (3)
- PSYC 4650 Seminar in Human Adaptation and Behavior (3)
- PSYC 4655 Seminar in Community Psychology (3)
- PSYC 4660 Seminar in Health Psychology (3)
- PSYC 4670 Seminar in Industrial Psychology (3)
- PSYC 4691 Honors Thesis II (3) (O, W)

SCIENTIFIC FOUNDATIONS OF PRACTICE
Students will select two courses from the following areas (each course must be from a different area):

- Area 1: Individual Differences and Dysfunctional Behavior (PSYC 2150, 3135, 3151)
- Area 2: Human Development (PSYC 2120, 2121, 2124)
Area 3: Practice (PSYC 2160, 2171, 3155)

SCIENTIFIC PSYCHOLOGY
Students will select two courses from the following:
- Biological Aspects (PSYC 3110, 3113, 3115, 3117)
- Cognitive/Affective Aspects (PSYC 3111, 3114, 3116, 3136)
- Social Aspects (PSYC 3130)
- Psychological Measurement (PSYC 3140)

ELECTIVES
Students must select at least nine hours of electives in psychology to fulfill the 34-hour requirement for the B.S.

Electives should be selected to aid the student in the attainment of personal goals. Please note, though, that the student may not include more than three credit hours in PSYC 3405 and six credit hours in PSYC 3806 in the 32-hour requirement of the major. However, an additional six hours of PSYC 3405 and additional hours of PSYC 3806 may be included in the 120 hours required for the B.A.

OTHER B.S. DEGREE REQUIREMENTS
Other specific requirements for the B.S. degree include: STAT 1222 (Elements of Statistics), and majors must satisfy the University General Education requirements listed for the Bachelor of Science Degree.

RELATED WORK
Students pursuing a B.S. in Psychology are expected to be exposed to a depth of knowledge in at least one domain outside of psychology through their completion of the Related Work Requirement. Related Work should be considered in terms of the fulfillment of individual educational and vocational aspirations.

REASONING & NATURAL SCIENCE REQUIREMENT
Students pursuing a B.S. in Psychology are expected to be exposed to a depth of knowledge in reasoning and the natural sciences. Students must select from one of the following options:

1) Complete a second major in Biology, Chemistry, Computer Science, or Math.
2) Complete a minor in Biology, Chemistry, Computer Science, Math, or Cognitive Science, or other minor approved by the Department.
3) Complete six hours from among: PHIL 1105; PHIL 2105; PHIL 3235; PHYS 1101; any Computer Science course; any MATH above 1105; any STAT above 1222
   AND complete 18 hours of biology or chemistry including at least three courses with labs and two courses with or without labs.

GRADE REQUIREMENTS
A GPA of 2.0 or above must be achieved for the major, as well as for the Reasoning and Natural Science Requirement. A grade of C or above in PSYC 1101, PSYC 1101L, PSYC 2101, PSYC 2103, a statistics course, and the Capstone course is required to progress in the major.

ACADEMIC ADVISING
Students should seek advising from the Psychology Advising for Student Success (PASS) Center (Colvard 4018) about courses most beneficial to their career and educational goals. In addition, the Department of Psychology actively participates in several interdisciplinary areas of study, including Gerontology, Women’s, and Gender Studies, and Cognitive Science.

Consult the Department of Psychology web page (psych.uncc.edu) for a Suggested Schedule to complete the B.A. or B.S. degree with a Major in Psychology.

MINOR IN PSYCHOLOGY
A minor in psychology consists of 19 semester hours of psychology to include PSYC 1101, 1101L, and a minimum of one course from both the Scientific Foundations of Practice Area and the Scientific Psychology Area. A minimum of six hours of coursework at the 3000-level or above is required. No more than three semester hours of PSYC 3806 may be counted toward the minor, and PSYC 3405 may not be used for the minor. A grade of C or above is needed for PSYC 1101, with a GPA of 2.0 for all psychology courses taken at UNC Charlotte.
Department of Religious Studies

Chair: J. Tabor
Isaac Swift Distinguished Professor: R. Cohen
Blumenthal Professor: J. Reeves
Professor: J. Tabor
Associate Professors: A. Burlein, K. Johnson, J. Robinson, J. Robinson-Harmon, J. Schott, J. D. White
Assistant Professors: S. McCloud, Mozina, J. Hammer
Lecturers: T. Katsanos, C. Sinclair, B. Thiede

Religious studies is the academic inquiry into the fundamental stories, symbols, and practices that human beings have relied on to make sense of themselves and the worlds in which they live. The Department of Religious Studies pursues this inquiry across a range of religious traditions by examining their textual, historical and cultural dimensions. This inquiry does not seek to determine which religious views are “right” or “true,” but rather attempts to gain insight into how religious systems of meaning-making have shaped the cultural orders in which we live—with particular attention to how religious discourses have shaped understandings of race, gender, sexuality, nation, and class. The department is explicitly committed to the liberal arts tradition with a commitment to fostering both an international and pluralistic perspective as well as excellence in close reading, critical thinking and effective communication.

DEGREE PROGRAMS

Most students major or minor in religious studies to gain a broad liberal arts education. With the flexibility of the program and its relationship to other areas of the University, students can meet the specific objectives of religious studies while taking a wide range of courses in other departments. Some students relate religious studies to definite vocational plans, often requiring further education in professional and graduate schools.

BACHELOR OF ARTS IN RELIGIOUS STUDIES

A major in religious studies requires 30 semester hours in religious studies courses* as follows:

ACADEMIC STUDY OF RELIGION (6 hours)
Two courses to orient the student to the academic study of religion.

RELS 2600 Orientation to the Study of Religion (3)
RELS 4600 Senior Seminar (3)

Students are encouraged to take RELS 2600 as early as possible in their program; students typically take RELS 4600 during their final year.

TEXTUAL ANALYSIS (6 hours)
Two courses designated as textual analysis** (as signaled in the department’s semester course listings). These courses focus on reading texts closely and carefully, examine methods and histories of textual interpretation, and consider how religious groups and cultures have composed, transmitted and been shaped by texts.

HISTORICAL ANALYSIS (6 hours)
Two courses designated as historical analysis** (as signaled in the department’s semester course listings). These courses focus on a particular historical period or figure; consider a movement, idea or institution across several historical periods; and examine questions of historiography more generally.

CULTURAL ANALYSIS (6 hours)
Two courses designated as cultural analysis** (as signaled in the department’s semester course listings). These courses focus on how religious discourses, practices and identities interact with, influence and are influenced by the larger culture of which they are a part.

ELECTIVES (6 hours)
Students should choose two electives in consultation with their academic advisor.

*At least five (5) courses, including RELS 4600, must be at the 3000-level or above.

**Depending on how respective sections are taught, a course could fulfill the requirement for historical, textual or cultural analysis. Students must consult the course descriptions circulated each semester to determine which designations have been assigned to a particular course.

MINOR IN RELIGIOUS STUDIES

A minor in Religious Studies consists of a minimum of 15 hours, with at least two courses at the 3000-level or above.

Minors in Islamic Studies and Judaic Studies are also available. For information on either of these, please see their individual sections under the Department of Global, International, and Area Studies in this Catalog.
HONORS PROGRAM

The Department of Religious Studies offers an Honors Program that allows students to deepen their consideration of approaches to the study of religion and to explore a well-articulated question in a written thesis. To be awarded a degree in religious studies with University Honors, the student must: (1) complete all requirements of the Bachelor of Arts degree; (2) complete RELS 4400, Method and Theory in the Study of Religion, with a grade of B or above; (3) write an Honors Thesis of A-grade quality, as judged by their thesis director; (4) present their thesis research orally to the faculty as a whole; (5) demonstrate, in writing, evidence of a concentration in their course of study, to the satisfaction of the Religious Studies Honors Committee; and (6) obtain a GPA of 3.25 or above in RELS courses, as well as an overall GPA of 3.0 or above. Candidates must also formally apply, and be approved, for Honors Candidacy by the University Honors Council.

ROTC: Aerospace Studies

Chair: Lt. Col. C. Rogers
Assistant Professor (Mil.): Capt. C. Hunter

Aerospace Studies prepares students for leadership positions with the United States Air Force through the Pre-professional Program and offers courses to all students through the Academic Program. The curriculum examines multi-disciplinary issues as they relate to leadership participation in the military environment.

ACADEMIC PROGRAM

The academic program (without affiliation with the formal Air Force ROTC program) is designed for students interested in gaining a perspective on military leadership, management, ethics, and discipline. Students who pursue this concentration should take the upper-level (AERO 3100 and 3200) courses, and they may attend the lower-level courses. Participation in Leadership Laboratory courses is available by special permission from the Department of Aerospace Studies.

PRE-PROFESSIONAL PROGRAM / AIR FORCE ROTC PROGRAM

The pre-professional track of the Aerospace Studies program is implemented as the Air Force Reserve Officer Training Corps. It provides two programs for students to qualify for a commission as a second lieutenant in the Air Force. To be eligible for the Air Force ROTC pre-professional program, a student must be a citizen of the United States, physically qualified for commission in the Air Force, not under 14 years of age for program entry and, upon graduation, no more than 30 years of age (may be waived to age 35). If designated for flight training, the student must be able to complete all commissioning requirements prior to age 29 (not waiverable).

Cadets must pursue work leading to at least a bachelor's degree and be willing to sign a formal agreement at the beginning of the advanced course or upon initiation of a college scholarship. The
agreement, an enlistment into the Air Force Reserve, obligates the student to remain in the ROTC program, accept a commission and serve the required period in the Air Force upon graduation. Cadets must also take an Air Force Officer Qualifying Test (AFOQT) and achieve certain minimum and quantitative scores prior to commissioning.

FOUR-YEAR PROGRAM

This program begins with the General Military Course (GMC) and offers coursework within the lower-division. GMC students not on Air Force ROTC scholarship incur no military obligation. Each candidate for commissioning must pass each GMC course with a grade of C or above and pass the corequisite lab. Students must score appropriately on an Air Force aptitude test, pass a physical fitness test, pass a medical examination, and be selected by a board of Air Force officers. If selected, the student then enrolls in the Professional Officer Course (POC), the last two years of the Air Force ROTC curriculum. Students attend a four-week field training course at Maxwell Air Force Base, Alabama normally between the Sophomore and Junior years. All students in the POC receive a tax-free stipend of at least $450 per month. Upon successful completion of the POC and the requirements for a degree, the student is commissioned in the Air Force as a second lieutenant.

THREE-YEAR PROGRAM

The basic requirement for entry into the three-year program is that the student has three academic years of college work remaining, either at the undergraduate or graduate level, or a combination of both. Applicants seeking enrollment in the three-year program must take both the Freshman-level and Sophomore-level aerospace studies courses in the Fall and Spring semesters of their Sophomore year. They must also pass Air Force aptitude, physical fitness, and medical examinations and be selected by a board of Air Force officers. Students attend a four-week field training course at Maxwell Air Force Base in Alabama normally between the Junior and Senior years. All students in the POC receive a tax-free stipend of at least $450 per month. Upon successful completion of the POC and the requirements for a degree, the student is commissioned in the Air Force as a second lieutenant.

MINOR IN AEROSPACE STUDIES

The minor in aerospace studies is open to both students pursuing an officer commission in the United States Air Force, as well as those wishing to just learn more about the military, leadership, teamwork, and communication skills, without incurring any military obligation. A minor in Aerospace Studies provides expertise in military law, national security issues, airpower history, leadership, teambuilding, as well as written and oral communication skills. Experience gained through this minor would be an advantage to any student interested in future government employment. Requirements include 16 credit hours of Aerospace Studies academic courses, but does not include the associated leadership lab or physical fitness requirements.

GRADE REQUIREMENTS

The cumulative grade-point average (GPA) for all courses used toward the minor must be 2.0 or greater, with no course grade lower than a C.

CREDIT HOUR REQUIREMENTS

A minimum of 16 credits in departmental courses is required for the Aerospace Studies minor, 12 of which must be upper division.

AERO 1101 The Air Force Today I (1)
AERO 1102 The Air Force Today II (1)
AERO 2101 The Development of Air Power I (1)
AERO 2102 The Development of Air Power II (1)
AERO 3101 Leadership and Management (O) (3)
AERO 3102 Defense Administration and Military Management (O) (3)
AERO 3201 Natl Security Issues in Contemporary American Society (O) (3)
AERO 3202 The Defense Leader: Perspectives on Ethics and Justice (O) (3)

SCHOLARSHIP PROGRAMS

Air Force ROTC awards scholarships at the Freshman through graduate school levels for students in the pre-professional track leading to a commission in the Air Force. They are available to qualified cadets in the three year program and four-year programs. Scholarships are given and retained on a semester basis.

Full-time enrollment in the University or a consortium institution and the Aerospace Studies program is a requirement for scholarship eligibility. Scholarships cover tuition, fees, and a book allowance. Scholarship cadets also receive a tax-free stipend of at least $300 a month.

Four-year scholarships also are available to high school students. High school students interested should apply online at afrotc.com. Initial four-year scholarship packages must be postmarked by December 1 of the year prior to enrollment.
ADJUNCT PROGRAMS

FIELD TRAINING
Four-week Field Training courses are normally completed during the summer between the Sophomore and Junior years for the four-year program (Junior and Senior years for the three-year program). Transportation, lodging, meals, and approximately $29 per day are provided by the Air Force during Field Training.

LEADERSHIP LABORATORY
Those students pursuing the pre-professional track will participate a minimum of three hours per week during every semester of enrollment. The objective is to provide a laboratory environment where each student receives an opportunity to learn and develop leadership and management abilities. Cadets plan, organize and carry out the entire leadership laboratory program with only minimal guidance from the staff advisors. Physical fitness training is also a part of the leadership laboratory program.

PROFESSIONAL DEVELOPMENT PROGRAM
Students enrolled in the Freshman or Junior year of Air Force ROTC may volunteer to attend a two- or three-week orientation program at an Air Force base. This is an opportunity to observe and experience the working environment of an active Air Force facility and to obtain specific career information. Other programs available to students include glider flight orientation, military airborne jump training, foreign language immersion, cyber operations, space orientation, unarmed combat, and summer engineering projects. Transportation, lodging, meals, and approximately $29 per day are provided by the Air Force during participation in this voluntary program.

FLIGHT TRAINING
All cadets seeking a commission who currently do not possess a private pilot's license may participate in an eight-hour flight orientation program any time during enrollment in AFROTC.

ROTC: Military Science
aroct.uncc.edu

Chair and Professor (Mil.): E. Johnson
Assistant Professors (Mil.): S. Siegfried, T. Pangborn, J. Grundy, S. Hunte, S. Stewart, R. Crocker

The Department of Military Science—also known as the Army ROTC (Reserve Officers' Training Corps)—offers qualified students the opportunity to earn a commission as an officer in the United States Army, Army Reserve, or Army National Guard while they are earning a college degree. The ROTC Program provides world class leadership training opportunities applicable in corporate, executive, and government leadership positions. This program will develop confident, responsible, self-disciplined leaders through leader development plans, self assessments and peer assessments. This opportunity is open to both men and women. Students may pursue either a four-year or a two-year program of Military Science instruction leading to a commission as an Army Second Lieutenant. The Department of Military Science also offers a Minor in Military Science open to those students who are admitted into Army ROTC.

The Program is divided into two parts: the Basic Course and the Advanced Course with a lateral entry option (the Two-Year Program).

BASIC COURSE
The Basic Course is usually taken during the first and second years, and covers such subjects as management principles, national defense, military history, and leadership development. Enrollment in the Basic Course can begin in any term in the first and second years. No military commitment is incurred for participation in the Basic Course. After completing the Basic Course, students who have demonstrated the potential to become officers and who have met the physical and scholastic standards for commissioning are eligible to enroll in the Advanced Course. Students pursuing a military commission receive Basic Course credit by completing Military Science 1000- and 2000-level courses; attending the Leaders Training Course at Fort Knox, Kentucky; or by completion of Military Basic Training.
TWO-YEAR COMMISSIONING PROGRAM

The Two-Year Commissioning Program is designed for Juniors who did not take ROTC during the first two years of college and want to pursue a military commission. To enter the two-year program, students must attend a fully-paid, four-week, Leadership Training Course at Fort Knox, Kentucky, during the summer between the second and third years or completion of Basic Training. After successfully completing the Leadership Training Course, students who meet scholastic requirements may enroll in the Advanced Course.

ADVANCED COURSE

The Advanced Course is taken during a student’s last two years. It includes instruction in organization and management, principles of training management, tactics, ethics and professionalism, further leadership development, and physical fitness training. During the summer between their third and fourth years, Advanced Course students pursuing a military commission will attend a fully-paid, four-week, Leadership Development and Assessment Course at Fort Lewis, WA. This course gives students the chance to put into practice the leadership theories and principles, and military skills learned in the classroom, and introduces them to how the Army functions in a field environment. Advanced Course students must complete Military Science 3000- and 4000-level courses and one 3-credit hour American military history class. Students not pursuing a military commission would receive the same credited class and lab hours but would not participate in the following: physical fitness program, field training exercises, the Leader Development and Assessment Course, or other incentive programs. Completion of the advanced course results in a Minor in Military Science.

MINOR IN MILITARY SCIENCE

The minor is open only to students who are admitted into the ROTC program and who are pursuing a commission as an officer in the United States Army. A Minor in Military Science provides expertise in leadership, ethics, professionalism, briefing techniques, national security issues, American history, team-building, military law, as well as written and oral communication skills. Experience gained through this minor would be an advantage to any student interested in future government employment.

The Minor in Military Science provides students with an opportunity to study leadership in a contemporary operational environment with a focus on military involvement in political decisions. This minor recognizes that the academic study of Military Science is intrinsically linked to political and international relations with focus on particular aspects of leadership. In addition to taking courses in Military Science, students participating in this minor would select a course pertaining to military history related topics that impact the social, economic and political environment.

A Minor in Military Science consists of a minimum of 19 credit hours, 16 hours at the 3000-level and above within the department and one American military history-related course. The cumulative GPA for all courses used toward the minor must be 2.0 or greater, with no individual course grade lower than a C.

REQUIRED CORE COURSES (16 hours)
MSCI 3101 Adaptive Team Leadership (3)
MSCI 3101L Adaptive Team Leadership Lab (1)
MSCI 3102 Applied Team Leadership (3)
MSCI 3102L Applied Team Leadership Lab (1)
MSCI 4101 Developing Adaptive Leaders (3)
MSCI 4101L Developing Adaptive Leaders (1)
MSCI 4102 Leadership in a Complex World (3)
MSCI 4102L Leadership in a Complex World Lab (1)

ELECTIVE AMERICAN MILITARY HISTORY-RELATED COURSES (3 hours)*
HIST 2120 American Military History (3)
HIST 2284 World War II: The European Theatre (3)
HIST 2285 World War II: The Pacific Theatre (3)
HIST 3141 World War I (3)
HIST 3202 American Revolution, 1750-1815 (3)
HIST 3211 Civil War and Reconstruction, 1860-1877 (3)

*Sother courses that do not appear on this list may be approved by the department chair if they pertain to military history.

SCHOLARSHIP PROGRAM

On-campus 2-, 2 ½-, 3-, 3 ½-, and 4-year scholarships are available and awarded on a competitive basis, providing either full tuition and mandatory fees or room and board. Scholarships also provide $600 per semester for books and supplies, and a tax-free tiered stipend of $300, $350, $450, or $500 per academic month, based on academic year. Four-year scholarships are available online at goarmy.com/rotc to students who apply while a Junior or Senior in high school. Four-year applicants do not have to be enrolled in high school JROTC to apply and incur no military obligation by applying. Application
timeframe is August through December each year. Guaranteed Reserve Forces Duty Scholarships are also available to students that are currently serving in the Army National Guard or Army Reserves and desire no active duty commitment.

Department of Sociology
sociology.uncc.edu

Chair: L. Walker
Associate Professors: J. Aulette, Y. Cao, S. Fitzgerald, S. Moller, E. Stearns, D. Zablotsky, W. Zhao
Assistant Professors: J. McLaughlin, N. Mark
Lecturers: A. Greene, C. Hancock, M. McKenzie, P. Rutledge

The Department of Sociology offers an academic major leading to a Bachelor of Arts degree. On the graduate level, the department offers the M.A. degree in Sociology. For details, see the Graduate Catalog.

Sociology is the scientific study of human social life. It focuses upon the forces that organize and structure societies and smaller groups, as well as the forces that disorganize and threaten to dissolve them. As a science, sociology applies an objective and systematic method of investigation to identify the patterns and forms of social life and to understand the processes by which they are established and changed.

The study of sociology is attractive to persons seeking a liberal education and immediate employment, as well as to persons preparing for further study and professional careers. As a liberal arts program, it enables students to understand the social contexts in which they find themselves and the social forces that shape personality, actions, and interactions with others. As a pre-professional program it provides an excellent background for persons entering social work, law, teaching, the ministry, journalism, planning, public relations and personnel services. It also provides analytical skills related to market research and program evaluation in human services, sales, management and other business activities.

BACHELOR OF ARTS IN SOCIOLOGY

A major in Sociology leading to the B.A. degree consists of: (1) a minimum of 32 semester hours of sociology courses; including (2) a core curriculum of SOCY 1101, 3153 or 3154, 4155, and 4156; with a grade of C or above for each core course; (3) at
least 23 hours at the 3000-level or above; (4) at least three hours designated W in the major; and (5) a minimum of 18 semester hours of related work or a minor.

**CONCENTRATIONS**
Students can, if desired, complete a concentration in one of three substantive areas as part of the B.A. degree. The three areas are: Sociological Social Psychology; Social Problems and Policy; and Organizations, Occupations, and Work. Each concentration will require a total of four (4) courses, in which one is a required course for the specific concentration and the other three courses are selected from an approved list of electives for the specific concentration. A grade of C or above must be earned in the required course and a GPA of 2.5 must be earned in the concentration. These courses will not add to the total number of hours required for the major, but will count toward the elective hours already required for the major.

The Sociological Social Psychology Concentration will require SOCY 2161 as a prerequisite or corequisite with three (3) electives from the following: SOCY 2112; SOCY 3261; SOCY 3267; SOCY 4150; SOCY 4263(W, 0); SOCY 4265 (W); and other courses with advisor approval.

The Social Problems and Policy Concentration will require SOCY 2171 as a prerequisite or corequisite with three (3) electives from the following: SOCY 2100; SOCY 3143; SOCY 3173; SOCY 3250/3251(0); SOCY 4111; SOCY 4125; SOCY 4130; SOCY 4168; SOCY 4172/4173(W); SOCY 4480; and other courses with advisor approval.

The Organizations Concentration will require a SOCY 2115 as a prerequisite or corequisite with three (3) electives from the following: SOCY 4111; SOCY 4112; SOCY 4115; and other courses with advisor approval.

**MINOR IN SOCIOLOGY**
The minor in Sociology requires the completion of 18 credit hours in sociology including SOCY 1101 (Introduction to Sociology) and at least one course at the 3000- or 4000-level. A GPA of at least 2.0 is required in the 18 hours of sociology.

**EARLY ENTRY PROGRAM:**

**MASTER'S IN SOCIOLOGY**

**CRITERIA FOR ACCEPTANCE**
1) Students must have completed at least 75 undergraduate hours
2) Students must have at least a 3.2 GPA overall, and a 3.5 GPA in Sociology courses
3) The student must take the GRE exam and earn scores that are acceptable for graduate admission

**THE PROGRAM**
Students who meet the above requirements will be accepted into the Graduate Program, conditional upon their successful completion of the requirements for their undergraduate degree, 18 hours in social science, and the required core undergraduate courses (Evolution of Social Thought, Research Methods, and Statistics).

Students will be allowed to take only 15 hours of graduate credit before they have completed their baccalaureate degree. They must maintain an undergraduate GPA of at least 2.7 in order to remain in the program. Students’ undergraduate GPA must be at least 3.0 when they graduate.

Students may count only six hours for both undergraduate and graduate degrees. Neither the Pro-seminar in Applied Social Research nor electives may be counted toward both the B.A. and the M.A.
Urban Studies

Director: H. A. Smith

MINOR IN URBAN STUDIES

A minor in Urban Studies requires completion of 18 hours taken from the following courses: ANTH 2125 (Urban Anthropology) or SOCY 4125 (Urban Sociology); ARCH 1100 (History of American Architecture); GEOG 2165 (Patterns of World Urbanization); URBS 2200/GEOG 2200 (Introduction to Urban Studies); GEOG 3100 (City and Region); GEOG 3205 (Internal Structure of the City); HIST 3281 (American Cities); HIST 3214 (Urban South); HIST 3280 (Blacks in Urban America); POLS 3121 (Urban Politics) or GEOG 3100 (Urban Political Geography); or URBS 3050 (Topics in Urban Studies). With prior permission from the Urban Studies Director, students may also select from URBS 3801 (Urban Studies Independent Study) or URBS 4401 (Urban Studies Internship). A student may also count up to 9 hours of other courses that have a significant urban focus with the prior permission of the Director of the Urban Studies minor in the Department of Geography and Earth Sciences.

Women’s and Gender Studies

Director: C. Wayland
Adjunct Professors: M. Miller, D. Shenk, R. Tong
Adjunct Assistant Professors: M. Feinberg, E. Gargano, J. Hartman, R. James, M. Lottman, E. Miller, J. Munroe, H. Perry, C. Tetreault, A. Toscano
Adjunct Program Associates: L. Acker, S. Masse

The Women’s and Gender Studies Program offers undergraduate and graduate students opportunities to learn about issues relating to gender, women, and feminism. Students may choose to take individual courses, a cluster of related courses, or a full minor in Women’s and Gender Studies. The Women’s and Gender Studies Program is committed to fostering personal growth by challenging gender stereotypes of women and men and equipping individuals with the knowledge and skills necessary to empower women and improve gender relations in an ever changing society. Most students find Women’s and Gender Studies courses personally interesting, as well as helpful preparation for careers in health and human services, education, law, human resources, art, and business.

MINOR IN WOMEN’S AND GENDER STUDIES

The Women’s and Gender Studies minor is open to all students regardless of gender and requires completion of at least 18 hours in approved courses. A maximum of nine hours may be earned from any one department or program outside of Women’s and Gender Studies. Students minoring in Women’s and Gender Studies must complete the following requirements:

1) WGST 1101 Introduction to Women’s Studies (3)*
2) WGST 3220/3221 Feminist Thought (3)*
3) Any WGST at the 4000-level
4) Nine hours of electives

*Students must receive a grade of C or above in WGST 1101 and WGST 3220/3221 for these courses to count toward the minor requirements.
Elective courses can be chosen from any department’s or program’s offerings, as long as (a) the course deals substantially with gender, women, feminism, sexuality, or related social movements and (b) the courses are approved by the Director of Women’s and Gender Studies. Students minoring in Women’s and Gender Studies should check their choices of electives with the Director of Women’s and Gender Studies, both when they are planning their minor and when they are reviewing it in preparation for graduation.

Examples of regularly taught courses in other departments that count as Women’s and Gender Studies electives include, but are not limited to:

AFRS 2215 Black Families in the U.S.
ANTH 2090 Gender, Culture, and Communication
ANTH 2123 Women in Crosscultural Perspective
ANTH 4131 Culture, Pregnancy and Birth
CJUS 4000 Gender, Race, and Justice
COMM 2110 Women and the Media
COMM 3110 Gender and Communication
ENGL 4002 Women in and Literature
GRNT 4260 Women: Middle Age and Beyond
HIST 2150 U.S. Women’s History to 1877
HIST 2151 U.S. Women’s History Since 1877
HIST 2152 European Women’s History
HIST 3000/AMST 3050 Southern Women’s History
NURS 4191 Women’s Health Issues
PHIL 3820 Feminist Philosophy
PSYC 3126 Psychology of Women
SOCY 2132 Marriage and Family
SOCY 2163 Sociology of Gender
SOCY 3261 Human Sexuality
SOCY 4090 New Theoretical Approaches to Gender
SOCY 4165 Sociology of Women
SPAN 3019 Hispanic Women Writers in English Translation

Courses approved for the minor that are taught infrequently:

AFRS 4106/ENGL 4156 Gender in African-American Literature
ANTH 2090/AAAS 3050 Gender in a Transforming Africa
ARTS 3001 Women in Art
CJUS 4162 Seminar on Sexual Assault
ENGL 4050 Native American Women
ENGL 4050 Gender and Shakespeare
HIST 3131 History of Sexuality
HIST 3168 Women and Family in Modern East Asia
RELS 3050 Religion and Gender
RELS 3111 Women and Judaism
THEA 4001 Women’s Writings Onscreen
THEA 4001 Violent Film Females

A complete list of courses approved for the minor in Women’s and Gender Studies is available in the Women’s and Gender Studies Program Office.

GRADUATE COURSES

The Women’s and Gender Studies Program regularly offers advanced graduate-level courses and a Graduate Certificate in Gender, Sexuality and Women’s and Gender Studies for students wishing to include the study of women, gender, or feminism in their graduate work. These courses (and the graduate certificate they form the core of) enable graduate students to pursue their own research while they develop a substantial background in the field. Please see the UNC Charlotte Graduate Catalog for details.
GENERAL EDUCATION PROGRAM
University College serves all undergraduate students at UNC Charlotte through the General Education Program which it coordinates on behalf of and with the support of all of the academic colleges that make up the campus community. This curriculum reflects this university's commitment to the principles of a liberal arts education, a broad training that develops analytic, problem solving, and communications skills and also awareness of bodies of knowledge and new perspectives that prepare students for success in their careers and communities in the 21st century.

UNIVERSITY ADVISING CENTER
In addition, University College houses all undergraduate students who are exploring their options before choosing a major, particularly through the University Advising Center. This specific responsibility is, however, just one example of the more general role that University College plays as an advocate seeking to expand the opportunities and improve the quality of students' experiences during their first two years on campus. Under this general umbrella, two specific programs deserve mention:

FRESHMAN SEMINARS
These courses (UCOL courses at the 1000-level) have been offered for more than 10 years, approximately 30 sections each fall. These courses are taught by a diverse group of faculty, professional advisors, and student affairs professionals. Their primary intent is to assist new students in making a successful transition to college by providing information and tools to help students gain awareness of campus resources, by encouraging students to make connections to the university community, and by developing strategies for academic and personal growth. Individual sections may take a particular thematic focus while others are more general in their approach. Some seminar sections are linked to other academic courses. A small program of Transfer Seminars (UCOL 1011) is also available, providing similar support for new transfer students.

LEARNING COMMUNITIES
University College plays an advisory role to the Learning Community program at UNC Charlotte (see the “Academic Services” section of this Catalog for more details). Learning communities bring new students together with courses and extracurricular activities that are focused around a common theme or topic. Most Learning Communities require a full year
commitment. University College students can choose between several learning communities. These include the joint University College / College of Liberal Arts and Sciences (UCLAS) LC, Genocide, International Law and Human Rights, Global Village, Gender Excellence, Community Service, Leadership, UTOP, and BEST. For more information, visit the Learning Communities online at lc.uncc.edu.
Course Descriptions

COURSE DESCRIPTIONS
Course descriptions provide the following information:

- Subject prefix
- Course number
- Course title
- Semester credit hours assigned to the course
- UNC Charlotte General Education requirements that the course satisfies, if any (O = Oral Communication; W = Writing Intensive)
- Prerequisites and/or corequisites (if any)
- Any course with which the course may be cross-listed
- Brief description of the course content*
- If a course is graded as Pass/No Credit rather than with a letter grade
- Any restrictions on the number of times a course may be taken
- When the course is usually offered (Evenings, Yearly, Alternate years, Fall, Spring, Summer, On demand, Internet)

*The description may specify the number of class (lecture) and/or laboratory sessions and hours. If no class hours are given, the number of class hours per week is the same as the number of semester hours credit assigned to the course.

An example and explanation of a typical course description:

SUBJ 1234. Title of Course. (Credit Hours) (General Education Requirements Met) Pre/corequisites. Brief description of course content. (When offered)

COURSE NUMBERING SYSTEM
Courses are identified by four-digit numbers. The first digit indicates the level of the course: 1000-2999 = lower-division undergraduate; 3000-4999 = upper-division undergraduate.

The following second digits designate special types of courses:
- 0 = topics
- 4 = internships and practicum
- 5 = cooperative education
- 6 = seminars
- 7 = Honors courses
- 8 = independent study
- 9 = research

Note: If the letter L follows the course number, the course is a laboratory course.

PREREQUISITES AND COREQUISITES
A prerequisite is a requirement that must be met (or a course that must be passed) before enrolling in a more advanced course. A corequisite is a course which should be taken in the same semester as another.

CROSS-LISTED COURSES
A cross-listed course is a single course which is simultaneously listed in the schedule of course offerings by two or more academic departments. They share the same meeting times, room, instructor(s), and curriculum. Students may only receive credit for the single section of the cross-listed course for which they are registered.

COURSE PREFIX
Courses offered for academic credit are listed by number within each subject and the subjects are listed alphabetically according to prefixes which are assigned as listed on the following page.

FREQUENCY
The frequency of offering a course is listed in parentheses at the end of the course description. Courses offered every year are designated by semester(s) only. Courses offered every other year are designated by semester and/or odd or even years. “On demand” courses are offered as needed and if a qualified instructor is available.

CHANGES
Course descriptions and numbers are accurate at the time of publication of the Catalog. For the most current information, please consult the department or the most current online version of the Catalog at http://provost.uncc.edu/catalogs.
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ARTS + ARCHITECTURE HONORS PROGRAM (AAHP)

AAHP 2600. Introductory Honors Seminar. (2) Prerequisite: Acceptance in the College of Arts + Architecture Honors Program is required for this course. This seminar will introduce Arts + Architecture Honors students to creative leadership, arts criticism, interdisciplinary interconnections among the spatial, visual, and performing arts, and the role of the arts in the community. (Fall, Spring)

AAHP 3001. Honors Seminar in Dance. (3) Prerequisite: For students not enrolled in a University, College, or Departmental Honors Program, permission of instructor is required. Concentrated, in-depth study of a selected topic in the history, theory, and/or practice of dance. Topics and course content vary according to the interests and expertise of the faculty; however, the information and requirements are accessible to an interdisciplinary range of students from within and beyond the College of Arts + Architecture. (Fall, Spring)

AAHP 3002. Honors Seminar in Architecture. (3) Prerequisite: For students not enrolled in a University, College, or Departmental Honors Program, permission of instructor is required. Concentrated, in-depth study of a selected topic in the history, theory, and/or practice of architecture. Topics and course content vary according to the interests and expertise of the faculty; however, the information and requirements are accessible to an interdisciplinary range of students from within and beyond the College of Arts + Architecture. (Fall, Spring)

AAHP 3003. Honors Seminar in Music. (3) Prerequisite: For students not enrolled in a University, College, or Departmental Honors Program, permission of instructor is required. Concentrated, in-depth study of a selected topic in the history, theory, and/or practice of music. Topics and course content vary according to the interests and expertise of the faculty; however, the information and requirements are accessible to an interdisciplinary range of students from within and beyond the College of Arts + Architecture. (Fall, Spring)

AAHP 3004. Honors Seminar in Theatre. (3) Prerequisite: For students not enrolled in a University, College, or Departmental Honors Program, permission of instructor is required. Concentrated, in-depth study of a selected topic in the history, theory, and/or practice of theatre. Topics and course content vary according to the interests and expertise of the faculty; however, the information and requirements are accessible to an interdisciplinary range of students from within and beyond the College of Arts + Architecture. (Fall, Spring)

AAHP 3005. Honors Seminar in Art & Art History. (3) Prerequisite: For students not enrolled in a University, College, or Departmental Honors Program, permission of instructor is required. Concentrated, in-depth study of a selected topic in the history, theory, and/or practice of art. Topics and course content vary according to the interests and expertise of the faculty; however, the information and requirements are accessible to an interdisciplinary range of students from within and beyond the College of Arts + Architecture. (Fall, Spring)

AAHP 3006. Interdisciplinary Honors Seminar. (3) Prerequisite: For students not enrolled in a University, College, or Departmental Honors Program, permission of instructor is required. Concentrated, in-depth study of a comparative or inter/multi-disciplinary topic in the history, theory, and/or practice of the visual and performing arts. Topics and course content vary according to the interests and expertise of the faculty; however, the information and requirements are accessible to an interdisciplinary range of students from within and beyond the College of Arts + Architecture. (Fall, Spring)

AAHP 3900. Honors Thesis. (3) Prerequisite: Permission of instructor is required. An independent thesis project that combines a research agenda with appropriate exploratory practices for the student’s discipline. In keeping with the nature of the disciplines of the College of Arts + Architecture, the final product of these theses may vary to include (but not be limited to) a written document, a performance, a concert, or an installation. In all cases, some written and graphic documentation of the ideas and process involved will be required for the purposes of evaluation. Thesis proposals must be approved by the AAHP Director and the University Honors Council in the semester prior to enrollment. (Fall, Spring)

ACCOUNTING (ACCT)

ACCT 2121. Principles of Accounting I. (3) Prerequisite: sophomore standing. Fundamental accounting principles, with emphasis on the use of financial accounting data and analysis of financial statements. (Fall, Spring, Summer) (Evenings)

ACCT 2122. Principles of Accounting II. (3) Prerequisite: ACCT 2121 with a grade of C or above and sophomore standing. An introduction to managerial accounting with an emphasis on using accounting information to make decisions. (Fall, Spring, Summer) (Evenings)

ACCT 3311. Intermediate Financial Accounting I. (3) Prerequisites: ACCT 2122 and INFO 2130 with grades of C or above. Analysis of the financial reporting requirements of corporations with emphasis on the conceptual framework and accounting for assets. Enrollment limited to majors in the College of Business. (Fall, Summer) (Evenings)

ACCT 3312. Intermediate Financial Accounting II. (3) Prerequisite: ACCT 3311 with a grade of C or above. A continuation of ACCT 3311 with emphasis on financial reporting for liabilities and stockholders’ equity. Also a number of special topics including the accounting for investments and the statement of cash flows. Enrollment limited to majors in the College of Business. (Spring, Summer) (Evenings)
ACCT 3330. Managerial Cost Accounting. (3) Prerequisite: ACCT 2122 with a grade of C or above. Analysis of the uses of accounting data in the planning, controlling and decision-making processes of business enterprises. Enrollment limited to majors in the College of Business. (Spring) (Evenings)

ACCT 3340. Accounting Information Systems. (3) Prerequisites: ACCT 2122 and INFO 2130 with a grade of C or above. An introduction to accounting systems, with particular emphasis on internal controls and computer auditing techniques. Enrollment limited to majors in the College of Business. (Fall) (Evenings)

ACCT 3350. Introduction to Auditing. (3) Prerequisites: ACCT 3311 and ACCT 3312 with a grade of C or above. Pre- or corequisite: ACCT 3340. This course examines the two basic areas of auditing—external and internal—with the objective of giving students an understanding and appreciation of career opportunities in both areas. The course will examine differences and similarities of both areas of auditing with respect to ethics, standards, the audit process and reporting requirements. Enrollment limited to Accounting majors. (Fall) (Evenings)

ACCT 3380. Fraud Examination. (3) Prerequisite: ACCT 3311 with a grade of C or above. This course examines the fraud problem faced by businesses and focuses on fraud prevention and detection. The course involves the study of the different types of fraud as well as an examination of the various elements of a fraud investigation. (Spring) (Evenings)

ACCT 3400. Accounting Internship. (3) Prerequisite: Junior or Senior accounting major in good standing, with completion of ACCT 3312 with a grade of C or above. Requires permission of the department. Provides a meaningful work experience in the field of accounting. Requires a minimum of 150 hours of supervised employment, 50 hours of work per credit hour. The student works full-time during the period of internship, therefore the student should plan schedules for junior and senior years to accommodate the internship. Internship proposals may be initiated by the student or by the department. The student should consult with the department well in advance of registration to discuss available options. Proposal forms must be completed and approved prior to registration and prior to starting the internship. A report on the internship experience is required from both the student and the employer at the conclusion of the internship. Graded on a Pass/No Credit basis. Cannot be repeated for credit or taken for credit at the same time or following any other internship for credit. Cannot be repeated for credit or taken for credit at the same time or following any other internship for credit. (Fall, Spring, Summer)

ACCT 3500. Cooperative Education and 49ership Experience. (0) Prerequisite: Accounting major with department approval, in conjunction with the University Career Center. Enrollment is required for students participating in a cooperative education or 49ership/service 49ership position during each semester they are working in a position. Participating students pay a course registration fee for transcript notation (co-op and 49ership) and receive full-time student status (co-op only). Assignments must be arranged and approved in advance. Course may be repeated; evaluation is Satisfactory/Unsatisfactory. Only open to undergraduate students; Graduate level students are encouraged to contact their academic departments to inquire about academic or industrial internship options for credit. For information, contact the University Career Center. (Fall, Spring, Summer)

ACCT 3900. Current Developments in Accounting. (1-3) Prerequisite: permission of the department. A research project will be required. Topics will be selected from internal and external auditing, governmental accounting, income taxes, managerial accounting and accounting theory. May be repeated for credit as topics vary. (Fall, Spring, Summer) (Evenings)

ACCT 4220. Income Tax. (3) Prerequisite: ACCT 3311 with a grade of C or above. An introduction to the Federal income tax system with emphasis on concepts and procedures applicable to all types of entities. Enrollment limited to Accounting majors. (Fall) (Evenings)

ACCT 4230. Advanced Income Tax. (3) Prerequisite: ACCT 4220 or equivalent course with a grade of C or above. An examination of advanced tax topics regarding corporations, partnerships, and individuals. In addition, estate and gift, fiduciary accounting, tax-exempt entities, and retirement plans will be examined at an introductory level. (Fall, Spring) (Evenings)

AEROSPACE STUDIES (AERO)

AERO 1101. The Air Force Today. (1) Pre-professional corequisite: AERO 1101L. Survey of topics relating to the Air Force including officership, professionalism, and basic communicative skills. (Fall)

AERO 1101L. The Air Force Today. (0) Leadership Lab. One credit hour. (Fall)

AERO 1102. The Air Force Today. (1) Pre-professional corequisite: AERO 1102L. A continuation of AERO 1101 to include a study of organizational structure and missions of the Air Force, life on an active duty base, and the relation of other armed service components to the Air Force mission. (Spring)

AERO 1102L. The Air Force Today. (0) Leadership Lab. One credit hour. (Spring)

AERO 2101. Development of Air Power I. (1) Pre-professional corequisite: AERO 2101L. Examination of the development of air power from its beginnings through the Cold War emphasizing the evolution of air power concepts and doctrine. An assessment of communication skills is included. (Fall)
AERO 2101L. Development of Air Power I. (0) Leadership Lab. One credit hour. (Fall)

AERO 2102. Development of Air Power II. (1) Pre-professional corequisite: AERO 2102L. A continuation of AERO 2101 which examines the history of airpower from Vietnam to the present. Oral communication development is a critical element. (Spring)

AERO 2102L. Development of Air Power II. (0) Leadership Lab. One credit hour. (Spring)

AERO 3101. Leadership and Management. (3) (O) Pre-professional corequisite: AERO 3101L. Study of leadership theory and skills, and the Air Force officer's role as a leader. Includes a study of management skills and their value in the military environment. Emphasis is placed on written and oral communication. (Fall)

AERO 3101L. Leadership and Management. (0) Leadership Lab. One credit hour. (Fall)

AERO 3102L. Defense Administration and Military Management. (0) Leadership Lab. One credit hour. (Fall)

AERO 3102. Defense Administration and Military Management. (3) (O) Pre-professional corequisite: AERO 3102L. Examination of Air Force doctrine, leadership, and ethics. Emphasis is placed on written and oral communication. (Spring)

AERO 3102L. Defense Administration and Military Management. (0) Leadership Lab. One credit hour. (Spring)

AERO 3201. National Security Issues in Contemporary American Society. (3) (O) Pre-professional corequisite: AERO 3201L. The executive-legislative matrix of our national government is developed and compared with other governmental systems. Special emphasis on the role of the emerging military leader in implementing national policy decisions, civilian control of the military, and regional security issues. (Fall)

AERO 3201L. National Security Issues in Contemporary American Society. (0) Leadership Lab. One credit hour. (Fall)

AERO 3202. The Defense Leader: Perspectives on Ethics and Justice. (3) (O) Pre-professional corequisite: AERO 3202L. Continued development of the fundamentals presented in AERO 3201 with special emphasis on the military as a profession and officership. Selected ethical and military justice scenarios are presented and discussed to prepare the student with an adequate intellectual framework for action as a professional military officer. (Spring)

AERO 3202L. The Defense Leader: Perspectives on Ethics and Justice. (0) Leadership Lab. One credit hour. (Spring)

AFRS 2050. Topics in Africana Studies. (3) Treatment of a special topic. May be repeated for credit as topics vary, with the approval of the department chair. (Fall, Spring)

AFRS 2105. Black Images in the Media in the US. (3) Cross-listed as COMM 2120. Examination of African American images projected through electronic and print media, historically and currently. (Yearly)

AFRS 2107. Global Hip Hop. (3) Cross-listed as SOCY 2107. The development and growth of Hip Hop from a US inner city Black expressive culture to a global subaltern social movement. Examines cultural production in Hip Hop in relation to the contemporary global issues that focus on the youth, subalterns, and postcolonial experiences. (Yearly)

AFRS 2120. African American Women. (3) Cross-listed as WGST 2120. This course explores how cultural, political, historical and economic factors shape African American women's positions and opportunities in society today. (On demand)

AFRS 2156. African Civilization. (3) Cross-listed as ANTH 2156. A survey of major cultural innovations and foundations of civilizations in ancient Africa; examination of the origins of ideas, beliefs, institutions, and practices; and the philosophical, religious, social, political and economic foundations of ancient African civilizations. Draws from a wide range of historical sources, especially archaeology, language, literary, oral traditions, and material culture. (Fall)

AFRS 2160. The African American Experience through Civil War. (3) Cross-listed as HIST 2160. Exploration of circumstances that brought Africans to the Americas and their experience during the era of slavery. Emphasis on the political, economic, and socio-cultural systems that maintained slavery in the South and constrained freedom in the North and the responses and struggles of African Americans. Topics include: slavery/slave trading to the Americas; the system of slavery in British North America; free blacks; political compromises sustaining the peculiar institution; and the impact of the Civil War and Reconstruction on the freedom, citizenship, and suffrage of African-Americans. (Fall)

AFRS 2161. The African American Experience: Civil War to Civil Rights. (3) Cross-listed as HIST 2161. Prerequisites: AFRS 1100 or AFRS 1111 for majors. Exploration of the African-American experience from the Civil War to the present and the struggle of freed slaves and free people of color in garnering the promises of emancipation and the changing status of African-Americans in American society. Interdisciplinary survey of key eras, issues, debates, and personalities in the African-American experience from 1865 to the present. It is strongly encouraged that students take AFRS 2160 before enrolling in this

AFRICANA STUDIES (AFRS)

AFRS 1100. Introduction to Africana Studies. (3) Interdisciplinary survey of key issues in the life and history of peoples of African descent and their interaction with other peoples and world cultures; introduction to theoretical foundations in the field of Africana Studies. (Fall, Spring)
AFRS 2206. African Literature, Music, and Art. (3) 
(W) Survey of socio-cultural context in which African literature, music, and art function; examination of the impact of changes resulting from international dependence and improved communications across continents and cultures; parallels drawn with other regions of the world, particularly the US and Europe. Creative research or community projects required. (Yearly)

AFRS 2207. Pan-Africanism. (3) Study of the Pan-African movement; examination of historical and contemporary efforts of peoples of African descent to unite their struggles for human advancement, political independence, and equality in Africa, the US, the Caribbean, Western Europe, and Afro-Latin American. Included in the study are popular movements, leading proponents, and related organizations. (On demand)

AFRS 2208. Education and African-Americans. (3) Examination of the problems and challenges of educating African-Americans. Topics include: conceptual approaches to education; historical and contemporary overview of education for African-Americans; the impact of race and discrimination; analysis of existing curricula; and suggested models for a multi-racial and multi-cultural education. (On demand)


AFRS 2221. Contemporary Africa. (3) Cross-listed as HIST 2211 and INT 2101. Study of Africa from the 1880s to the present. Focus on political and socio-economic changes and Africa's integration into the community of nations. (Yearly)

AFRS 2301. Introduction to African-American Literature. (3) Cross-listed as ENGL 2301. Prerequisite: ENGL 1101 and 1102 or 1103, or departmental permission. Survey of the major periods, texts, and issues in African-American Literature. Prerequisite to 4000 level African-American literature courses in English department. (Fall, Spring)

AFRS 3050. Topics in Africana Studies. (3) Treatment of a special topic. May be repeated for credit as topics vary, with approval of department chair. (Fall, Spring)

AFRS 3101. Perspectives on Race and Ethnicity in the US. (3) Study of values and make-up of American pluralistic society in historical and contemporary context. Focus on understanding of African American values and the role of ethnicity and race. (On demand)

AFRS 3150. The African-American Church and Civil Rights. (3) Cross-listed as RELS 3150. Role of the African-American church in the struggle for human equality. Topics such as radical, moderate, and accommodationist leadership styles; historical development of the black church in the South; and its emergence as a foundation for modern civil rights movement. (Yearly)

AFRS 3158. Gender and African-American Literature. (3) Cross-listed as ENGL 3158. Exploration of the intersection of gender and African-American literature, focusing on either Black women writers or Black male writers, or a combination in dialogue. (Alternate years)

AFRS 3159. African-American Poetry. (3) Cross-listed as ENGL 3159. Intensive study of African-American poetry, focusing on one period or traversing several. (On demand)

AFRS 3179. African American Political Philosophy. (3) Cross-listed as POLS 3172. Prerequisite: 3000 level course on Africa from AFRS, POLS, or HIST. Analysis of competing ideologies in African American political philosophy. (On demand)

AFRS 3190. The Political Economy of the Caribbean. (3) An examination of the manifestations of Caribbean economic problems and policies and Caribbean political development from the post-war period to the present. (On demand)

AFRS 3200. Folklore of Africa and the African Diaspora. (3) A study of the relationships among African and African Diaspora folktales, folk beliefs, customs, legends, myths, proverbs, poetry, songs, performance, narratives, symbols, and social practices. Using an interdisciplinary approach, the course will identify parallel tales and verbal and performance arts in the Mother Continent and the Diaspora and also study how geographical environments and historical experiences have impacted new manifestations of African folklore. (On demand)

AFRS 3210. Black Families in the Diaspora. (3) Cross-listed as SOCY 3210 and LTAM 3110. This course is designed to acquaint students with historical and contemporary experiences of peoples of African descent in the Caribbean and Latin American countries with specific emphasis on family structure and family relationships. Includes discussion of theories, history, impact of globalization on family structure, roles of women and identity, socioeconomic status and mobility, slavery, colonialism, and capitalism. The course is designed to provide students with a better understanding of the comparative relationships and links between family structures and common life experiences among peoples of African descent in different parts of the world, with specific emphasis on the Caribbean and Latin American regions. (Yearly)

AFRS 3218. Racial Violence, Colonial Times to Present. (3) Cross-listed as HIST 3218. This course examines the ways in which African-Americans and Whites used violence both as part of struggles for liberation and freedom as well as repression from the
AFRS 3220. The Caribbean from Slavery to Independence. (3) Cross-listed as LTAM 3220 and HIST 3180. Covering the sweep of history from European/indigenous contact, through the construction of a plantation regime based on African slave labor, and up to the present day, this course explores the spread of colonialism, the dynamics of slavery, and the tumult of abolition and national independence movements. The Caribbean Sea will be examined as a region, emphasizing the ties unifying the islands and the circum-Caribbean coasts. The region’s past – including empire and imperial conflict, racial oppression and interaction, and international contact – and its legacies will be discussed in relation to political economics, race, and contemporary culture. (On demand)

AFRS 3230. Poverty and Discrimination in African Diaspora in the Modern Era. (3) Socio-economic roots of poverty and discrimination in African America, the Caribbean, and Afro-Latin America; impact of anti-poverty and anti-discrimination laws and programs. (On demand)

AFRS 3240. African Americans and the Legal Process. (3) Cross-listed as HIST 3240. This course explores the unique role law has played in the African American experience, establishing the status of persons of African descent in America. Students will investigate how the legal history of African Americans has shaped American race relations over the past 400 years by tracing the evolution of race, racism, and racial formations as a function of America’s legal system. (Yearly)

AFRS 3260. Slavery, Racism and Colonialism in the African Diaspora. (3) Cross-listed as LTAM 3260 and HIST 3190. This course is designed to explore how race and racism, slavery, and colonialism served as principal institutions and constructs shaping the experience between Africa and the emerging African Diaspora in the New World. Students will consider how the maintenance of Western social, economic, and political superiority materialized as functions of these three important historical developments. (On demand)

AFRS 3265. African Economic Development. (3) Focus on economic theories, planning, production, and resource allocation strategies, capital formation, foreign aid, and multinational corporations in Africa. (On demand)

AFRS 3270. Afro-Latin American History. (3) (W) Cross-listed as LTAM 3270 and HIST 3181. This course explores the African Diaspora in Latin America ranging from the Caribbean Sea to the Rio de la Plata. From slavery, to fighting for freedom in the Spanish-American Wars of Independence, to forging new notions of citizenship in twentieth century Brazil, African-descended peoples have an important place in Latin America’s historical past. According special attention to regions with concentrated populations of African-descended peoples, this course reveals the vibrant history of Afro-Latin America. (Yearly)

AFRS 3278. Race in the History of Brazil. (3) Cross-listed as LTAM 3278 and HIST 3178. Examining the history of Brazil since Portuguese colonization, this course focuses on experiences, struggles, and debates revolving around questions of race and identity. The course interrogates the construction of a slave society, abolition, negotiation of freedom for slaves, and debates around national identity that attended the formation of the Brazilian republic and which have shaped the country in the 20th century. The Brazilian experience will be approached comparatively, using the United States and other areas of the African Diaspora for context. (On demand)

AFRS 3280. Blacks in Urban America. (3) Cross-listed as HIST 3280. African-Americans have been part of the urban scene since the colonizing of the Americas. The course will examine the ways in which their presence in cities has both exemplified and contradicted the understanding of both urban development and race relations in America from colonial times to the present. (On demand)

AFRS 3290. Research Methods. (3) (O) Prerequisite: completion of sophomore-year courses or instructor’s permission. Design of a research project with emphasis on developing sound research skills and methods. (Fall)

AFRS 3692. Colloquium. (3) (W) Prerequisite: Permission of the instructor. A weekly colloquium; research and writing; opportunity for intellectual stimulation, critique and problem solving. Open to majors and non-majors. (On demand)

AFRS 3830. Philosophy and Race. (3) Cross-listed as PHIL 3830. This course both examines the role of the concept of race in the Western philosophical canon, and uses current philosophical texts and methods to examine Western discourses of race and racism. Issues such as whiteness, double consciousness, the black/white binary, Latino identity and race, ethnicity, mixed-race identity, and the intersection of race with gender and class will also be examined. (Alternate years)

AFRS 3895. Independent Study. (1-3) Prerequisite: Permission of the department. Supervised investigation of a problem or subject in the field of Africana Studies. May be repeated for credit. (Fall, Spring)

AFRS 3990. Senior Project in Africana Studies. (2-15) Prerequisite: Completion of junior-year courses. Completion of a senior research paper on an academic topic or a community-related written project. Emphasis on mastery of academic skills and content of the field or specific discipline. (On demand)

AFRS 4000. Senior Seminar in Africana Studies. (3) Prerequisites: Completion of junior-year courses. This advanced seminar explores a wide-body of literature selected as the eminent scholarship in the field of...
Africana Studies. Students will read, analyze, and critique the scholarly literature of the field and prepare written assignments conceptualizing the course readings and discussions. *(Spring)*

AFRS 4010. African Diaspora Theory. (3) Explores the diverse conceptual and theoretical perspectives in the African Diaspora Studies, with emphasis on the dialectical relationships between social theories and the African Diaspora, especially as these relate to the issues of race, identity, gender, migrations, cultural production, and transnationalism. *(Yearly)*

AFRS 4050. Topics in Africana Studies. (3) Treatment of a special topic. May be repeated for credit as topics vary, with the approval of the department chair. *(Fall, Spring)*

AFRS 4101. Modern African Literature in English. (3) Prerequisite: Junior standing. AFRS 1100 or 2206 for AFRS majors. Topics include: Traditional African and Western literary influences, the culture debate, post-independence satire, decolonization of African literature, apartheid, and women writers. *(On demand)*

AFRS 4105. African International Relations. (3) Cross-listed as POLS 3169. This course examines Africa’s relations with external powers (including Europe, the United States, and China), cooperation among African countries, the role of non-state actors in African conflicts, and U.S. policy toward the continent. *(Yearly)*

AFRS 4401. Professional Internship in Africana Studies. (3) Prerequisites: Permission of the chair of the department, restricted to juniors and seniors majoring or minoring in Africana Studies who have at least a 2.5 GPA and have completed the following courses: AFRS 1100, and up to twelve credits of other AFRS courses. Internship in wide-ranging working environments, including government establishments, private businesses, as well as not-for-profit organizations, especially those focusing on issues affecting African and African Diaspora populations. The internship provides students with experiential learning in an environment that is consistent with the student’s professional goals and growth. *(Fall, Spring)*

AMST 3000. Seminar in American Studies. (3) *(W)* An in-depth treatment of an American topic using an interdisciplinary and writing-intensive approach. May be repeated for credit with permission of the student’s advisor as topics vary. *(Fall, Spring) (Evenings)*

AMST 3020. Seminar in American Studies. (3) *(W)* An in-depth treatment of an American topic using an interdisciplinary and writing-intensive approach. May be repeated for credit with permission of the student’s advisor as topics vary.

AMST 3050. Topics in American Studies. (3) Introduction to the interdisciplinary approach, demonstrating how traditionally distinct disciplines, such as literature and history, or art and political science, interrelate and contribute to an understanding of an American topic. May be repeated for credit with permission of the student’s advisor as topics vary. *(Fall, Spring) (Evenings)*

AMST 3090. Topics in American Film. (3) An in-depth treatment of an American film director, subject, or genre. May be repeated for credit with permission of the student’s advisor as topics vary. *(Fall, Spring) (Evenings)*

AMST 3100. Introduction to American Studies. (3) Introduction to American culture through an in-depth study of a single decade or era, such as the 1830s, 1890s, 1920s, 1950s or 1960s. Focus on how diverse social, economic, artistic, literary, philosophical, and political forces have shaped American society. Students examine the complex and multifaceted nature of American culture, both as it pertains to the specific era under study and to the present day. May be repeated for credit with permission of the student’s advisor, as decades vary. *(Fall, Spring) (Evenings)*

AMST 3210. Childhood in America. (3) Exploration of the changing nature of childhood in American society. Examines how social and economic developments have affected the child’s position in the family, the workplace, and the school. Child-rearing philosophies and techniques from the colonial period to the present and the history of children’s literature, toys, and entertainment will be studied. *(On demand)*

AMST 3800. Independent Study or Directed Reading in American Studies. (1-3) May be repeated once for credit, with permission of the student’s advisor. (Not limited to American Studies students but should be under the supervision of an American Studies advisor or designate.) *(On demand)*

AMST 4050. Topics in American Studies. (3) In-depth study using an interdisciplinary approach focusing on aspects of American culture and society. May be repeated for credit with permission of the student’s advisor as topics vary. *(Fall, Spring) (Evenings)*
ANTH 1101. Introduction to Anthropology. (3) Biological and cultural evolution; archaeology; language and culture; comparative study of human social institutions such as kinship, subsistence patterns, religion, politics; methods and theories. (Fall, Spring, Summer) (Evenings)

ANTH 2010. Topics in Ethnography. (3) Investigation of ethnographic regions of the world. May be repeated for credit as topics vary. Examples: Cultures of the Pacific; Cultures of the Mediterranean. (On demand)

ANTH 2050. Topics in Archaeology. (3) Specialized topics in archaeology. May be repeated for credit as topics vary. Examples: Historic Archaeology. (On demand)

ANTH 2090. Topics in Anthropology. (1-3) Specialized topics in anthropology. May be repeated for credit as topics vary. Examples: Hunters and Gatherers; Political Anthropology. (On demand)

ANTH 2111. Peoples of Africa. (3) Ethnic and linguistic diversity in Sub-Saharan Africa; ecology and culture; patterns of continuity and change in kinship, marriage, economy, social control, stratification, and religion. (On demand)

ANTH 2112. North American Indians. (3) Survey of the native peoples of America; culture at the time of European contact; major historical events and relationships; contemporary issues in Indian affairs. (On demand)

ANTH 2113. Cultures of Russia and East Europe. (3) Examination of former socialist countries of Russia and East Europe. Ideology and practice of socialism, ethnic relations, reunification, and cultural changes in gender roles, economy, religious practice, and popular culture. (On demand)

ANTH 2114. Indians of the Southeastern United States. (3) Study of American Indians of the Southeastern United States with emphasis on tribes of the Carolinas. Areas of investigation include pre-contact cultures, Indian-European contact relationships, history, and contemporary Southeastern Indian issues. (On demand)

ANTH 2115. Culture and Society in the Middle East. (3) Patterns of subsistence, social and political organization in North Africa and the Middle East. Changes in family and community structures, migration, gender roles, and religious outlook since the colonial period. (Yearly)

ANTH 2116. Contemporary Latin America. (3) Cross-listed as LTAM 2116. A survey of the people and cultures of Mexico, Central America, South America, and the Caribbean. Areas of investigation include religion, race, ethnicity, gender, kinship, social inequality, and economic development. (Yearly)

ANTH 2117. Cultures of the Caribbean. (3) Cross-listed as LTAM 2117. An introduction to society and culture in the Caribbean region. Areas of investigation include ethnicity, nationalism, family and community structure, economy, religion, and politics. (Yearly)

ANTH 2121. Comparative Family Systems. (3) Cross-cultural survey of the origins and forms of the human family and interrelationships with other cultural institutions; role of the family in kinship, marriage, childrearing, sex roles, economics, political organization, and religion. (On demand)

ANTH 2122. Beliefs, Symbols and Rituals. (3) Structure and content of systems of belief and ritual; role in social life; analysis of religion, myth, magic, witchcraft, symbol systems, cult movements, and religious change. (Yearly)

ANTH 2123. Women in Cross Cultural Perspective (3) A cross-cultural survey of the lives of women and the dynamics of gender throughout the world. Uses anthropological research to examine how gender influences evolution, social stratification, work, kinship, and perceptions of the body. (Alternate years)

ANTH 2125. Urban Anthropology. (3) Cross-cultural analysis of urban life; rise of early cities; rural-urban differences; migration; ethnicity, urban poverty; effects of urban life on kinship systems; modernization. (Alternate years)

ANTH 2126. World Population Problems. (3) (W) An examination of various world population “problems,” such as growth, migration, fertility, and population aging, in order to learn how cultural, political, economic, and environmental factors influence and are influenced by the population structure of a given society. (On demand, Summer)

ANTH 2141. Principles of Biological Anthropology. (4) Corequisite: ANTH 2141L. Evolutionary theory; primates; primate and human evolution; population genetics; human variation; osteology; bioethics. (Fall, Spring)

ANTH 2141L. Principles of Biological Anthropology Lab. (0) Corequisite: ANTH 2141. Two-hour laboratory session per week. In-depth discussion and debate of assigned readings and anthropological issues presented in lecture and films; hands-on experience with human osteological material, skeletal material of living primates, and casts of major fossil primates and hominids.

ANTH 2142. Primate Behavioral Ecology. (3) Prerequisite: ANTH 2141 or the equivalent or permission of the instructor. An examination of primate diversity, including evolution, ecology, social behavior (e.g., communication, aggression, male-female social dynamics, mother-infant bonding, infant development, etc.), reproductive strategies and conservation of prosimians, monkeys, and apes. (Alternate years)

ANTH 2143. The Fossil Evidence for Human Evolution. (3) Prerequisite: ANTH 2141 or the
ANTH 2151. Introduction to Archaeology. (3) Archaeological method and theory; important archaeological sites and cultures from Old and New Worlds; ethics and public policy in archaeology. (Fall)

ANTH 2152. New World Archaeology. (3) Cross-listed as LTAM 2252. Prehistory of North America; Paleoindians, Eastern United States, Southwest, Mexico; archaeological methods and theory. (Alternate years)

ANTH 2153. Historic Archaeology. (3) Theories, methods, and data of the archaeology of the post-1492 world; integration of archaeological and documentary research; globalization through material culture; emphasis on North America. (Alternate years)

ANTH 2156. African Civilization. (3) Cross-listed as AFRS 2156. A survey of major cultural innovations and foundations of civilizations in ancient Africa; examination of the origins of ideas, beliefs, institutions, and practices; and the philosophical, religious, social, political and economic foundations of ancient African civilizations. Draws from a wide range of historical sources, especially archaeology, language, literary, oral traditions, and material culture. (Fall)

ANTH 2161. Introduction to Linguistic Anthropology. (3) In-depth survey of linguistic anthropology, one of the four major sub-fields of anthropology; study of the relationship between language and culture, with a particular focus on how individual practices and societal norms intersect. (Alternate years)

ANTH 3090. Topics in Anthropology. (1-3) Prerequisite: ANTH 1101 or permission of the instructor. Examination of specialized topics in anthropology. May be repeated for credit as topics vary. Examples: Art and Anthropology, Ecological Anthropology. (On demand)

ANTH 3014. Evolutionary Anthropology. (3) Prerequisite: ANTH 2141 or permission of the instructor. The goal of this course is to confront the nature and significance of biological diversity in the human species, and the ways in which they have been interpreted and represented scientifically. The three general topics to be covered will be: (1) the history of the study of human diversity and its patterns; (2) the body; and (3) the mind. (Alternate years)

ANTH 3124. Food, Nutrition and Culture. (3) Prerequisite: ANTH 1101 or permission of instructor. An examination of how food provides special insight into cultures throughout the world. Topics include the symbolic and social value of food, the social construction of taste, dietary change, food and health, cannibalism, and famine. (On demand)

ANTH 3132. Aging and Culture. (3) (W) Examination of the processes of aging in various cultural contexts, with emphasis on the implications for understanding aging within American society. Application of anthropological theories and methods to the study of aging. (On demand)

ANTH 3144. Evolutionary Anthropology. (3) Prerequisite: ANTH 2141 or permission of the instructor. The aim of this course is to familiarize students with the classic and contemporary literature and issues in evolutionary theory, particularly as applied to human origins. Topics include primate
systematics, homology, adaptation, hierarchy, speciation, and sociobiology. (Alternate years)

ANTH 3145. Anthropological Genetics. (3)
Prerequisite: ANTH 2141 or permission of the instructor. The goal of this course is to engage genetic knowledge as it relates to humans, particularly in the context of the cultural, social, and ideological issues it overlaps, such as race, behavior, counseling, gender, and indigenous property rights. Readings and discussions will incorporate both the scientific and the social issues. (Alternate years)

ANTH 3152. Early Civilizations. (3) Prerequisite: ANTH 1101 or 2151 or permission of instructor. Great civilizations of Old and New Worlds; Mesopotamia, India, Greece, Africa, Egypt, China, Mexico, Peru; theories of cultural evolution; beginnings of complex societies; archaeological theory and method, environment, and ecology of first civilizations. (Alternate years)

ANTH 3153. Archaeological Analysis. (3) Prerequisite: ANTH 2151 or permission of the instructor. Advanced study of archaeological method and theory; analytical methods; statistics in archaeology. (On demand)

ANTH 3154. European Prehistory. (3) Prerequisite: ANTH 1101 or 2151 or permission of the instructor. Prehistory of Europe; Paleolithic, Neolithic, Bronze Age, Iron Age; archaeological methods and theory; ecology and social systems of early European cultures. (On demand)

ANTH 3155. Ancient Latin America. (3) Cross-listed as LTAM 3255. Archaeology and ethnohistory of the Aztecs, Maya, Inca, and their predecessors; includes an investigation of prehistoric urbanism, the rise and fall of complex societies, and the application of archaeological methods to complex societies. (On demand)

ANTH 3157. South American Prehistory. (3) Cross-listed as LTAM 3257. Archaeology of the indigenous cultures in South America from the earliest settlement until the arrival of the Spanish, including Moche, Nasca, and Inca; focus on the Central Andean region including Peru, Bolivia, Chile, and Ecuador; examination of the origins of agriculture, interactions of people and the environment, rise and collapse of states and empires, and the role of religion and warfare in ancient societies. (Yearly)

ANTH 3160. Gender, Culture, and Communication. (3) Cross-listed as COMM 3150. Addresses cultural experiences of gender through communication; material covered includes cultural constructions of femininity and masculinity, cultural socialization toward gender and sexuality, gendered communication in private and public settings, popular representations of gender and sexuality in U.S. media, and language diversity based upon ethnicity, class, gender, and sexual orientation. (Alternate years)

ANTH 3222. Culture, Health and Disease. (3) Same as ANTH 3122, but not a Writing Intensive (W) course. (Yearly)

ANTH 3480. Internship in Anthropology. (3) Prerequisite: permission of the department. Research and/or in-service training experience in a cooperating community organization, based upon a contractual agreement among the student, department, and community organization. May be repeated for credit up to a maximum of six semester hours. Graded on a Pass/No Credit basis. (Fall, Spring, Summer)

ANTH 3482. Teaching Internship in Anthropology. (3) Prerequisite: at least Junior standing and permission of the department. Teaching assistant experience in introductory anthropology. Includes conducting review sessions, lecturing, assisting faculty member with exams, and related activities. May be repeated for credit up to six hours. Graded on a Pass/No Credit basis. (Fall, Spring)

ANTH 3895. Directed Individual Study. (1-4) Prerequisite: ANTH 1101 and permission of the department. Supervised investigation of specialized topics in anthropology. May be repeated for credit up to six hours may be applied to the major. (Fall, Spring, Summer)

ANTH 4090. Topics in Anthropology. (1-3) Prerequisite: ANTH 1101 or permission of instructor. Examination of specialized topics in anthropology. May be repeated for credit as topics vary. Examples: Anthropology and Globalism; Race, Culture, and Society. (On demand)

ANTH 4110. American Ethnic Cultures. (3) Prerequisite: ANTH 1101 or permission of instructor. An anthropological and ethnohistorical survey of ethnicity, persistence and cultures of the ethnic groups of America. Topics include theories of ethnicity, immigration, ethnic identity, reasons for immigration, acculturation experiences, and cultural characteristics of established and more recent ethnic groups. (Alternate years)

ANTH 4120. Intercultural Communications. (3) Prerequisite: ANTH 1101 or permission of instructor. Learning to cope with cultural differences; contrasting value systems; cross-cultural and communication styles; nonverbal communication; cultural relativity; culture and perception; ethnocentrism; cultural shock. (Alternate years)

ANTH 4122. Ethnographic Methods. (3) Prerequisites: At least 6 hours in ANTH courses or permission of the instructor. This course provides students with a basic mastery of the key methods used in cultural anthropological research. (Alternate years)

ANTH 4131. Culture, Pregnancy and Birth. (3) Cross-listed as WGST 4131. This course explores how culture shapes the experience and practice of pregnancy and birth. Some of the topics we will explore include the birthing experience, midwifery, infertility, new reproductive technologies, and surrogate motherhood. (On demand)
ANTH 4140. Field Biology of the Primates. (3) Prerequisite: at least Junior standing; ANTH 2141 and ANTH 2142 or permission of instructor. The theory and methods utilized in the study of nonhuman primate behavior. This applied behavioral primatology course entails original research projects done at an appropriate zoological venue in North and South Carolina. (Summer)

ANTH 4453. Field Project in Archaeology. (1-4) Prerequisite: ANTH 1101 or 2151 and permission of the instructor. Practical experience in archaeological techniques. Students will participate in field research on an historic or prehistoric archaeological site. Research may include field reconnaissance, excavation, mapping, systematic description and analysis of cultural material, and/or other techniques appropriate to the site and research problem. May be repeated for credit as projects vary. Up to six hours of credit may be applied toward the anthropology major. Graded on a Pass/No Credit basis. (Summer)

ANTH 4601. Seminar in General Anthropology. (3) (O, W) Prerequisite: ANTH 3101 and Senior standing. For majors only. Synthesis and integration of subfields of anthropology with emphasis on accomplishing original research, and written and oral presentation in anthropology. (O credit will be received only after successful completion of 3101 and 4601.) (Spring, Fall)

ANTH 4615. Readings in Middle East Ethnography. (3) Seminar exploring both historically significant and recent ethnographies on selected topics. Examples include Israel/Palestine, Women in the Middle East, and Tribe, State, and Nation in the Middle East. May be repeated for credit as topics vary. (On demand)

ANTH 4616. Culture and Conflict in the Amazon. (3) This course examines the development strategies Brazil has used in the Amazon and explores how these policies have affected both the environment and the various populations living in the Amazon. Topics covered include environmental degradation, human rights abuses, culture change, migration, and globalization. (On demand)

ANTH 4622. Readings in the Anthropology of Religion. (3) Seminar exploring both historically significant and recent ethnographies of religion. Examples include Islam, Religion and the Senses in the Muslim World, Shamanism, Comparative Ethnography of Religion. May be repeated for credit as topics vary. (On demand)

ANTH 4701. Honors Research in Anthropology. (3) Prerequisite: Acceptance into the departmental honors program and permission of the department. Independent Honors project; proposal, literature review, and research for project to be completed in ANTH 4601. Graded on a Pass/No Credit basis.

ARBC 1201. Elementary Arabic I. (4) For students with limited or no previous experience in Arabic. First course in a two-course sequence to develop competence in culture, speaking and writing, listening and reading comprehension in modern standard Arabic. (Fall, Spring)

ARBC 1202. Elementary Arabic II. (4) Prerequisite: ARBC 1201 or equivalent. Second course in a two-course sequence to develop competence in culture, speaking and writing, listening and reading comprehension in modern standard Arabic. (Fall, Spring)

ARBC 2011. Honors Research in Arabic Language and Culture. (1-3) (W) Course may be repeated with change of topic. (On demand)

ARBC 2201. Intermediate Arabic I. (4) Prerequisite: ARBC 2201 or permission of the department. Continued training in grammar. Intensive practice in reading, writing, and speaking. (Fall, Spring)

ARBC 2202. Intermediate Arabic II. (4) Prerequisite: ARBC 2201 or permission of the department. Builds on skills acquired in the first semester intermediate level. Introduced advanced grammatical concepts. (Fall, Spring)

ARBC 3050. Topics in Arabic Language and Culture. (1-3) Course may be repeated with change of topic. (On demand)

ARBC 3201. Advanced Arabic I. (3) Prerequisite: ARBC 2202 or permission of the department. Review of Arabic grammar and guided conversation on prepared topics. Emphasis on spoken Arabic. (Fall)

ARBC 3202. Advanced Arabic II. (3) Prerequisite: ARBC 3201 or permission of the department. Review of Arabic grammar and guided compositions on prepared topics. Emphasis on vocabulary, idiomatic expressions, and stylistics. (Spring)

ARCH 1101. Architecture Design Studio. (5) This course begins the architectural design sequence. The studio allows students to gain a working knowledge of important studio skills, processes and methods, and develop creative and independent thinking through two-and three-dimensional design problems. (Fall)

ARCH 1102. Architecture Design Studio. (5) This course continues the architectural design studio sequence, expanding the base of architectural skills, processes, methods, principles, and issues which affect the built environment we inhabit. Design is introduced as a conceptual discipline involving analysis, interpretation, syntheses, and transformation of the physical environment. (Spring)

ARCH 1601. Recording Observations. (2) Projects, lectures, demonstrations, and exercises are used to introduce the skill of freehand drawing. The aim is to understand drawing as a vital means to see,
represent, and understand essential aspects of the visual environment. (Fall)

ARCH 1602. Components of Form. (2) Projects, lectures, demonstrations, and exercises are used to introduce the skill of freehand drawing. The aim is to understand drawing as a vital means to see, represent, and understand essential aspects of the visual environment. (Spring)

ARCH 2101. Architecture Design Studio. (5) Prerequisites: ARCH 1102 and 1602. Corequisite: ARCH 2601. Studios emphasizing the significant purposes for building; understanding the theoretical, technical and symbolic consideration of the environment relative to intervention, and intentions from behavioral information toward a comprehensive design process. (Fall)

ARCH 2102. Architectural Design Studio. (5) Prerequisites: ARCH 2101 and 2601. Studios concentrating on the development, experimentation, and understanding of the range, potential, materials, systems, and methods in the use of architectural technologies. (Spring)

ARCH 3601. Writing Architecture. (3) (W) Prerequisite: ARCH 3101. Corequisite: ARCH 3102. This seminar introduces genres of writing—observation, analysis, reflection, critique, manifesto, and narrative—that are used within the architectural design process and within criticism. Students will develop skills with reading architectural texts, and engage successive iterations of critical writing exercises. (Spring)

ARCH 3101. Architecture Design Studio. (5) Prerequisites: ARCH 2102. Third year design studios continue the five-year studio sequence with a focus on three areas of inquiry: tectonics - defined as the material, detail, and structure as form-generating influences; enclosure - defined as making space with regard to use and human ritual; and envelope - defined as building edge and surface in technical terms and signification. (Fall)

ARCH 3102. Architecture Design Studio. (5) Prerequisite: ARCH 3101. Continuation of ARCH 3101. The final studio in the Core Program examines the relationship of building to site and context in both environmental and social terms. Site planning, adjacency, contextualism, land and landscape, building grouping, and urban occupancy are included in projects. (Spring)

ARCH 4050. Architecture Elective – Topics. (3) Concentrated, in-depth study of selected topic. Topics vary according to faculty expertise and often include contemporary theoretical, social, technological, and design issues. (Fall, Spring)

ARCH 4101. Topical Architectural Studio. (5) Prerequisite: ARCH 3102. Various studio topics are offered with different emphasis and subject concentration to allow students to in-depth studio experiences in particular areas of study. Course may be repeated with permission. (Fall)

ARCH 4102. Topical Architectural Studio. (5) Prerequisite: ARCH 4101. Series of studio sections offered with different emphasis and subject concentration to allow students to obtain a variety of studio experiences and pursue an individual area of study. Course may be repeated with permission. (Spring)

ARCH 4103. Comprehensive Architectural Project Schematic. (6) Prerequisite: ARCH 4102. This studio is the first of a two-semester sequence dedicated to the design of a “Comprehensive Architectural Project.” The first semester includes preliminary design research and analysis, the development of a Schematic Design, and completion of a Project Document which provides for design research, analysis, development and synthesis (oral, written, and graphics) of a building program, site, and design premise. (Fall)

ARCH 4104. Comprehensive Architectural Project Studio. (6) This studio is the second of a two-semester sequence dedicated to the design of a “Comprehensive Architectural Project.” The second semester involves design development including resolution of material, structural, and environmental systems, and its representation through drawings, models, verbal presentations, and refinement of ARCH 4103. (Spring)

ARCH 4112. Professional Practice. (3) Corequisite: ARCH 4104. Learning objectives include an understanding of the practice of architecture today, its responsibilities and procedures, and emerging alternative forms of practice and roles of the architect. (Spring)

ARCH 4201. Architectural History I: Prehistory–1750. (3) Global survey of architecture and urbanism from prehistory to 1750. Explores key examples of buildings and cities as well as the theoretical, environmental, political, economic, technological, and cultural contexts in which they were built. Provides a general knowledge of the formal, spatial and ornamental characteristics that distinguish the built environment of distinct historic and traditional building cultures. (Fall)

ARCH 4202. Architectural History II: 1750–Present. (3) Prerequisite: ARCH 4201 or permission of instructor. Global survey of architecture and urbanism from 1750 to the present. Explores key architectural and urban ideas, designers, buildings, and urban projects as well as how they were shaped by their environmental, political, economic, technological, and cultural context. (Spring)

ARCH 4203. Architectural History III: Survey of Contemporary Theory (1950–Present). (3) Prerequisite: ARCH 4202 or permission of instructor. Survey of architectural theory from 1950 to the present. Focuses on the key ideas, texts, debates, and discourse that have informed architectural practice in the late twentieth and early twenty-first centuries. (Fall)
ARCH 4204/4205. Architectural History Elective. (3) 
(W) Prerequisite: ARCH 4202 or permission of instructor. Study of topical areas of history and theory of architecture. These courses are required for architecture majors (3 credit hours of 4204/4205 in the B.A. and 3 credit hours in the B.Arch) to complement the required survey courses (ARCH 4201 and 4202) to develop in-depth research, writing, and presentation skills. May be repeated for credit as topics of course change. (Fall, Spring)

ARCH 4301. Material and Assembly Principles. (3) 
Introduces quantitative and qualitative characteristics of architectural materials, systems, and processes. Also introduces the physical properties of materials relevant to their application in construction, assembly, and detail systems. Topics include: masonry, concrete, wood, steel, glass, cladding, roofing and flooring materials, and their assemblies. (Spring)

ARCH 4303. Structural Principles. (3) Prerequisite: ARCH 4301. Introduces issues relevant to the fundamentals of structures including statics, strength and stability of materials. Also introduces structural concepts, systems, and the tracing of structural loads through basic principles, physical modeling, and theoretical and analytical methods. Topics include: the interrelationship between strain, stress, and stability, as well as the implications of tension, compression, shear, torsion, and bending. (Fall)

ARCH 4304. Structural Systems. (3) Prerequisites: ARCH 4301 and ARCH 4303. Introduces specific structural applications of wood, steel, concrete, and masonry systems commonly used in small-scale commercial/institutional buildings. Also introduces design of beams, columns, walls, joinery, and connections appropriate to each material type through theoretical, analytical, and computer simulation methods. (Spring)

ARCH 4302. Environmental Systems Principles. (3) 
Prerequisites: ARCH 4301. Introduces qualitative and quantitative analytical methods commonly used to assess the impact of environmental forces on occupant thermal and luminous comfort, energy performance, and regional sustainability. Also introduces the interplay between climatic events, building use, and the architectural variables that inform the appropriate application of building systems technology. Topics include: building envelope performance, and the introduction of passive and mechanical systems for heating, cooling, illuminating, and ventilating buildings. (Fall)

ARCH 4305. Building Systems Integration. (3) 
Prerequisites: ARCH 4304 and ARCH 4302. Introduces a set of advanced issues related to the comprehensive, systematic integration of building technology systems commonly used in large-scale buildings through case study, analytical, and simulation methods. Topics address the resolution of the building structure, materials, environmental systems, mechanical systems, electrical systems, life safety, building water supply and waste, and conveying systems in building design. (Fall)

ARCH 4604. Computational Methods. (3) 
Prerequisite: ARCH 2102 or permission of instructor. Advances computation in architecture by understanding the strengths and weaknesses of various kinds of computing and their role in design. Course content included: advanced 3D modeling, basic parametrics, basic scripting, and the importance of digital inquiry. Also introduces computational concepts, their history, and how they relate to design and architecture. (Fall)

ARCH 4605. Computational Practice. (3) 
Prerequisite: ARCH 4604 or permission of instructor. Capstone course for digital and computational studies in the 5-Year program. The objectives of the course are to provide the use of advanced digital tools, digital fabrication, advanced visualization techniques, scripting, as well as parametric and building information modeling tools. (Spring)

ARCH 4890. Directed Independent Study. (1-3) 
Prerequisite: major in Architecture. This course is designed to allow students to pursue faculty-directed independent study topics not provided by other College offerings. May be repeated for credit with the approval of the college. Requires permission from chair of Instruction. (Fall, Spring)

ARTS AND SCIENCES (ARSC)

ARSC 3000. Topics in Arts and Sciences. (3) 
Prerequisites: Junior standing and permission of the sponsoring departments. Topics chosen from the general area of the arts and sciences in order to demonstrate relationships and interdisciplinary influences. May be repeated for credit as topics vary with permission of the student's major department. Can be used toward general degree requirements as indicated each time the course is offered. (On demand)

ARSC 3400. Non-Residential Studies. (1-15) 
Experience outside the University which provides an alternative learning opportunity to broaden understanding of the major and provide an introduction to various careers. All arrangements for non-residential study must be approved in advance and include a written proposal of goals, methods, duration, hours credit, and evaluation procedures. The University Career Center is available to assist students to locate appropriate work experiences. Student projects will be approved, supervised, and evaluated within the student's major department. Grading by a faculty advisor may be on a Pass/No Credit basis, ordinarily to be taken in the Junior or Senior year. No more than 15 hours of non-residential studies may be presented toward a degree. (Cannot be used toward general degree requirements.) Contact major department or University Career Center for information. (On demand)

ARSC 3480. Citizenship and Service Practicum. (3) 
(O, W) An interdisciplinary, experiential learning course which examines the relationship between
citizenship and service to one’s community. Lectures, reading, and seminars explore the historical, ethical, and political foundations of voluntary service for issues such as poverty, homelessness, and social justice. Course meets for two hours of lecture/discussion per week and requires completion of 40 hours of voluntary service in the community. (Fall, Spring, Summer)

ARSC 3500. Cooperative Education and 49ership Experience. (0) Prerequisites: Departmental GPA and credit hours required and approval by the departmental Co-op Coordinator in conjunction with the University Career Center. Enrollment in this course is required for Arts and Sciences students involved in professional work experiences offered through either the 49ership/service 49ership program, or the parallel co-op (part-time work) or the alternating co-op (full-time work) option of the cooperative education program. Participating students pay a course registration fee for transcript notation (49ership and co-op) and receive full-time student status (co-op only). Assignments must be arranged and approved in advance. Course may be repeated; evaluation is Satisfactory/Unsatisfactory. Only open to undergraduate students; Graduate level students are encouraged to contact their academic departments to inquire about academic or industrial internship options for credit. For information, contact the University Career Center. (Fall, Spring, Summer)

ART (ARTA-ARTZ)

Please note: course offerings are listed by area of study instead of by course prefix.

Art (ARTA)

ARTA 1402. Gallery Internship. (3) Participation in all phases of exhibition selection, preparation, and presentation in four campus galleries under supervision of campus galleries coordinator. May be repeated one time for credit. (Fall, Spring)

ARTA 2800. Directed Studies in Art. (1-3) Prerequisites: Art major status; permission of instructor and department. Directed individual research in a particular artistic field of interest not otherwise offered. May be repeated for credit. (Fall, Spring, Summer)

ARTA 3000. Topics in Art. (1-3) Prerequisite: Art major status. Special topic in art. May be repeated for credit with change in topic. (On demand)

ARTA 3101. Art Writing. (3) (W) Prerequisites: Art major status; ENGL 1101 and 1102. Intensive writing experience in the forms of writing commonly employed in the visual arts: criticism, journalism, historical research, personal essay. (On demand)

ARTA 3201. BFA Portfolio Review. (1) Prerequisites: Art major status; 2.5 GPA; and grades of C or above in one of the following combination of classes (depending on concentration):

Ceramics: ARTB 1202, ARTB 1206, ARTC 2171 or ARTC 2172
Cross Disciplinary: see Advisor for permit
Digital: ARTB 1201, ARTB 1203, ARTB 1206, ARTM 2105
Graphic Design: ARTB 1201, ARTB 1203, ARTB 1206, ARTG 2181
Illustration: ARTB 1201, ARTB 1203, ARTB 1205, ARTB 1206, ARTL 2181
Painting: ARTB 1201, ARTB 1203, ARTB 1206, ARTP 2131
Photography: ARTB 1201, ARTB 1206, ARTT 2191
Print Media: ARTB 1201, ARTB 1203, ARTB 1206, ARTR 2161 or ARTR 2162
Sculpture: ARTB 1202, ARTB 1203, ARTB 1206, ARTZ 2141

Students will compile a portfolio of work and written information to apply to any concentration in the BFA track. A passing grade reflects acceptance of portfolio and admission into the BFA degree program. Those denied will maintain BA degree status. May be repeated for credit when applying to a different concentration area. Graded on a Pass/No Credit basis. (Fall, Spring)

ARTA 3400. Internship in the Arts. (1-3) Prerequisites: Art major status; permission of sponsor instructor and department. Non-salaried opportunity for students to observe, examine, and participate in the creative dynamics and procedural operations of an art organization, arts related business, professional artist’s studio, or expert craftsworker. Sponsor supervised. A three credit experience requires 120 contact hours per semester. Repeat for credit with different sponsors. Graded on a Pass/No Credit basis. (Fall, Spring, Summer)

ARTA 3800. Independent Study in Art. (1-3) Prerequisite: Art major status; permission of instructor and department. Supervised individual research of artistic problems with appropriate documentation of the results. May be repeated for credit. (Fall, Spring, Summer)

ARTA 3801. Visual Arts Workshop. (1-6) Prerequisite: Art major status; permission of instructor and department. Contracted and pre-approved arrangements for student to receive credit for visual arts workshops conducted outside the University’s course offerings. May be repeated for credit. (Fall, Spring, Summer)

ARTA 4600. Senior Seminar. (3) (O, W) Prerequisites: ENGL 1101 and ENGL 1102 with grades of C or above, and Senior level art majors in either of final two semesters in art program. Seminar and intensive writing experience explores a variety of general issues in contemporary art with an emphasis on career questions faced by graduating seniors. (Fall, Spring)

ARTA 4601. BFA Senior Exhibit. (1) Prerequisites: Art major status; senior status; ARTA 3201, 3202, or 3203. Corequisite: ARTC 4972, ARTF 4952, ARTG 4982, ARTL 4981, ARTP 4933, ARTR 4963, ARTT 4992, or ARTZ 4943, depending on concentration. BFA candidates will prepare, install, and exhibit a
body of work to fulfill BFA exit requirement. Repeat for credit with change in concentration. Graded on a Pass/No Credit basis. (Fall, Spring)

**Basic Foundation Studios (ARTB)**

**ARTB 1201. 2D Design. (3)** Prerequisite: Art major status. Introductory studio exploring basic concepts and techniques of visual organization in two dimensions. Includes study of the formal elements and principals of composition and the interrelationship between form and content. Six contact hours. (Fall, Spring)

**ARTB 1202. 3D Design. (3)** Prerequisite: Art major status. A beginning studio emphasizing experimentation with design and materials as related to the exploration of form and space in three dimensions. Six contact hours. (Fall, Spring)

**ARTB 1203. Drawing I. (3)** Prerequisite: Art major status. Introduction to drawing involving skills and theory including perspective, proportion, rendering, and expression in a variety of media and techniques. Priority for majors. Six contact hours. (Fall, Spring)

**ARTB 1205. Figure Drawing I. (3)** Prerequisite: Art major status. Prerequisite: C or above in ARTB 1203. A studio course that explores strategies for drawing the human form in terms of anatomy, proportions, expression, movement, and composition with a variety of media and techniques. Six contact hours. (Fall, Spring)

**ARTB 1206. Concept Practices. (3)** Prerequisite: Art major status. Introduces students to the breadth of makers, means, and modes of expression in the contemporary art world during in-class sessions. In-class discussions, presentations, guest speakers, written assignments, and/or field trips support independent out-of-class studio projects. With these projects, students immediately assume full responsibility for acquiring the means, space and material resources to manifest a creative voice. Experiences are designed to promote the generation of ideas and their integration into objects, sound, digital media, and/or performance. Four contact hours. (Fall, Spring)

**Ceramics (ARTC)**

**ARTC 2171. Ceramics Handbuilding. (3)** Prerequisites: Art major status; ARTB 1202. Pre- or corequisite: ARTB 1206. Introduction to handbuilt forming methods, concept development, ceramic materials, and firing procedures. Six contact hours. (Fall, Spring)

**ARTC 2172. Ceramics Wheel 1. (3)** Prerequisites: Art major status; C or above in ARTB 1202. Pre- or corequisite: ARTB 1206. Introduction to wheel forming methods and emphasis on skill development, design, glaze application, utilitarian and sculptural concepts, and basic high-fire techniques. Six contact hours. (Fall, Spring)

**ARTC 3071. Topics in Ceramics. (1-3)** Prerequisite: Art major status. Special topics in ceramics. May be repeated for credit with change in topic. (On demand)

**ARTC 3171. Ceramic Sculpture. (3)** Prerequisites: Art major status; C or above in ARTC 2171. Intermediate studio emphasizing sculptural concepts, and design. Six contact hours. (Fall, Spring)

**ARTC 3172. Ceramics Wheel 2. (3)** Prerequisites: Art major status; C or above in ARTC 2172. Continuation of ARTC 2172 emphasizing development of skills, materials, high temperature firing techniques, design concepts related to utility and sculpture. Six contact hours. (Fall, Spring)

**ARTC 3273. Ceramics 3. (3)** Prerequisites: Art major status; choose two of the following in sequence: C or above in ARTC 2171 and ARTC 3171 or ARTC 2172 and ARTC 3172. Intermediate development of skills and concepts. More advanced materials and firing techniques. Six contact hours. (Fall, Spring)

**ARTC 3274. Ceramics 4. (3)** Prerequisites: Art major status; C or above in ARTC 3273 and at least one of the following: ARTA 3201, 3202, or 3203. Continuation of ARTC 3273. Six contact hours. (Fall, Spring)

**ARTC 4175. Ceramics 5. (3)** Prerequisites: Art major status; C or above in ARTC 3274 and at least one of the following: ARTA 3201, 3202, or 3203. Advanced ceramic studio of higher level skills, concepts, and aesthetics with particular emphasis on personal expression and development of an individual clay portfolio. Six contact hours. (Fall, Spring)

**ARTC 4971. Ceramics Projects 1. (3)** Prerequisites: Art major status; C or above in ARTC 4175 and at least one of the following: ARTA 3201, 3202, or 3203. Combination studio and seminar class. Continuation of ARTC 4175 with particular emphasis on personal expression and development of a strong individual clay portfolio. Six contact hours. (Fall, Spring)

**ARTC 4972. Ceramics Projects 2. (3)** Prerequisites: Art major status; C or above in ARTC 4971 and at least one of the following: ARTA 3201, 3202, or 3203. Corequisite: ARTA 4601. Continuation of ARTC 4971 culminating in a body of original ceramic art in preparation for BFA Senior Exhibition. Six contact hours. (Fall, Spring)

**Drawing (ARTD)**

**ARTD 2139. Drawing 2. (3)** Prerequisites: Art major status; C or above in ARTB 1201 and ARTB 1203. Further development of perceptual skills with emphasis on conceptual issues; exploration of subject matter, meaning and content, and thematic development in a variety of black and white and color materials. Six contact hours. (Spring)

**ARTD 3134. Figure & Anatomy. (3)** Prerequisites: Art major status; C or above in ARTB 1201 and
1205. Pre- or corequisite: ARTB 1206. Emphasizes the study of anatomy as it pertains to drawing. Complex drawing problems in a variety of media. Six contact hours. (On demand)

Art Education (ARTE)

ARTE 2100. Introduction to Art Education. (3) Prerequisite: Art major status. Introduction to the history of art education, theories of artistic development, teaching and learning in K-12 art settings and planning lessons. A twenty-hour practicum, in which students observe art teacher behavior in schools and assist students, is a required part of the course. A grade of B or above is required for admittance to art teacher licensure. Lecture. 3 contact hours. (Fall, Spring)

ARTE 2121. Developmental Art. (3) Human growth potential, creative and perceptual development, learning objectives, past and current philosophies, and psychology in art. Individual studio problems involving art elements, principles, and media. Six contact hours. For non-majors only. (Fall, Spring)

ARTE 4021. Topics in Art Education. (1-3) Prerequisite: Art major status. Special topics in art education. May be repeated for credit with change in topic. (On demand)

ARTE 4121. Elementary Art Methods. (3) Prerequisites: Art major status; formal admission to teacher licensure and the Art Education minor (includes passing scores on Praxis I and a grade of B or above in ARTE 2100). Analysis of learning themes as related to growth and development in the visual arts; organization of tools, media and materials appropriate for the elementary level; curriculum design in planning art units and lessons, evaluation and motivation techniques. Thirty-six hour internship in an elementary setting is required where the student will assist the teacher, tutor students and teach a minimum of two art lessons. Lecture/Lab. Five contact hours. (Fall)

ARTE 4122. Secondary Art Methods. (3) (O,W) Prerequisites: Art major status; formal admission to teacher licensure and the Art Education minor (includes passing scores on Praxis I and a grade of C or above in ARTE 4121). Analysis of learning themes as related to growth and development in the visual arts; organization of tools, media and materials appropriate for the secondary level; curriculum design in planning art units and lessons, evaluation and motivation techniques. Three-hour per week internship in a secondary setting is required where the student will assist the teacher, tutor students and teach a minimum of two art lessons. Lecture/Lab. Five contact hours. (Fall/Spring)

ARTE 4467. Student Teaching in Art. (12) Prerequisites: Art major status; grade of C or above in ARTE 4122; and approved application for student teaching; senior status; completion of professional education requirements; grades of C or above in all courses required for licensure. Corequisite: enrollment only in student teaching. A planned sequence of experiences in the student’s area of specialization conducted in an approved school setting under the supervision and coordination of a University supervisor and a cooperating teacher. The student must demonstrate the competencies identified for teaching art in an appropriate grade level setting. (Fall, Spring)

Fibers (ARTF)

ARTF 2151. Fibers 1. (3) Prerequisites: Art major status; grade of C or above in ARTB 1202. Pre- or corequisite: ARTB 1206. Introduction to the field of fibers, with exploration in constructed fibers, garment forms, and surface design, including weaving, dying, printing, and three dimensional construction techniques. Six contact hours. (Fall, Spring)

ARTF 2256. Rug Weaving. (3) Prerequisite: Art major status; grade of C or above in ARTF 2151. Technical study including warp-faced and weft-faced rugs, pile, and flat woven surfaces. May be repeated for credit. Six contact hours. (On demand)

ARTF 2257. Mixed Media Book Arts & Papermaking. (3) Prerequisite: Art major status; grade of C or above in ARTF 2151. Exploration to book art forms including hand-sewn Western Codex, Japanese binding, accordion pleats, sculptural book forms and pop-ups, etc. Students will create a portfolio of handmade papers using abaca and other fibers, and explore three-dimensional paper forms. Six contact hours. (Spring)

ARTF 3051. Topics in Fibers. (1-3) Prerequisite: Art major status. Special topics in fibers. May be repeated for credit with change in topic. (On demand)

ARTF 3352. Fibers 2: Surface Design 1. (3) Prerequisites: Art major status; grade of C or above in ARTF 2151. Exploration of surface design techniques including batik, silkscreen, block printing and other dyeing processes combined with embellishment techniques such as embroidery and beadwork. Six contact hours. (Fall)

ARTF 3353. Fibers 3: Constructed Textiles 1. (3) Prerequisites: Art major status; grade of C or above in ARTF 3352. An exploration of traditional textile construction methods for application in the making of contemporary sculpture and installation works. Techniques covered may include weaving, twining, garment forms, plaiting, felt-making, knotting, coiling, crochet, etc. Six contact hours. (Spring)

ARTF 3354. Fibers 4: Surface Design 2. (3) Prerequisites: Art major status; grade of C or above in ARTF 3353 and ARTA 3201, 3202, or 3203. A continuation of surface design methods such as dyeing, silkscreen and block printing, shibori, marbling and other experimental methods. Fabric manipulation processes will be explored as will beading, collage, foils and stitching as mark-making. Six contact hours. (Fall)

ARTF 3355. Fibers 5: Constructed Textiles 2. (3)
Prerequisites: Art major status; grade of C or above in ARTF 3354 and ARTA 3201, 3202, or 3203. A continuation of study and application of constructed textile methods in the making of contemporary sculptural forms and installations. Techniques may include sewing, knotting, weaving, crochet and felt-making, etc. Six contact hours. (Spring)

ARTF 4951. Fibers Projects 1. (3) Prerequisites: Art major status; grade of C or above in ARTF 3355 and ARTA 3201, 3202, or 3203. Advanced level fiber techniques and concepts with emphasis on personal expression and development of individual fiber portfolio. Six contact hours. (Fall, Spring)

ARTF 4952. Fibers Projects 2. (3) Prerequisites: Art major status; grade of C or above in ARTF 4951 and ARTA 3201, 3202, or 3203. Corequisite: ARTA 4601. Emphasis on portfolio development, professional practices specific to the fiber field and preparation for Senior Exhibition. Six contact hours. (Fall, Spring)

Graphic Design (ARTG)

ARTG 2180. Graphic Design Methods. (3) Prerequisites: Art major status; grade of C or above in ARTB 1201. Pre- or corequisite: ARTB 1206. Introduction to the discipline of graphic design. A lecture-based course with a smaller studio component. Focus on graphic design history and the process/methodology unique to the design profession. Project assignments will coincide with lecture material, and will enable students to develop the visual problem solving skills and non-computer-hand skills needed for pursuing further study in graphic design. Four contact hours. (Fall, Spring)

ARTG 2181. Graphic Design 1. (3) Prerequisites: Art major status; grade of C or above in ARTB 1201 and ARTB 1203. Pre- or corequisite: ARTB 1206. Introduction to basic graphic design and visual communications principles and the history of design. Exploration of equipment, materials, techniques, and procedures. Emphasis on concept development and basic layout design skills. Six contact hours. (Fall, Spring)

ARTG 3081. Topics in Graphic Design. (1-3) Prerequisites: Art major status; grade of C or above in ARTG 2181; and permission of instructor. Special topics in graphic design. May be repeated for credit with change in topic. (On demand)

ARTG 3183. Graphic Design 2. (3) Prerequisites: Art major status; grade of C or above in ARTM 2105, ARTG 2180, and ARTG 2181. Intermediate level graphic design and visual communications problem-solving with an introduction to electronic pre-press and print production techniques. Assignments focus on research, concept evolution, designer/client relationships, and the function of the computer as a creative tool. Six contact hours. (Fall, Spring)

ARTG 3184. Typography. (3) Prerequisites: Art major status; grade of C or above in ARTG 3183 and ARTA 3201, 3202, or 3203. Investigation of the principles of typography including the expressive characteristics of letterforms, the relationships between image and type, and the application of type to new forms of visual media. Six contact hours. (Fall, Spring)

ARTG 3287. Environmental Design. (3) Prerequisites: Art major status; grade of C or above in ARTG 2181 and ARTG 3183. Theory, design, and fabrication of graphic design systems for museum, corporated, educational, and other public use spaces. (On demand)

ARTG 3408. Graphic Design Internship. (3) Prerequisite: Art major status; grade of C or above in ARTA 3201; ARTG 3184; and permission of instructor, department, and sponsor (consents required prior to registration). Placement in a professional setting for observation and supervised design-related duties. This experience requires 120 contact hours per semester. Written documentation of internship required. Graded on a Pass/No Credit basis. (Fall, Spring; Summer)

ARTG 4180. Print Production. (3) Prerequisites: Art major status; grade of C or above in ARTG 3184 and ARTA 3201, 3202, or 3203. Advanced level graphic design problem-solving that concentrates on the relationships between message and media, and the exploration of both digital and traditional production techniques. Topics also include project planning and scheduling, paper characteristics and selection, and the applied practice of printing as it pertains to visual communication. Six contact hours. (Fall, Spring)

ARTG 4181. Communications Design. (3) Prerequisites: Art major status; grade of C or above in ARTG 3184 and ARTA 3201, 3202, or 3203. Advanced study of graphic design as applied to problems in corporate communications and advertising. Project assignments include corporate identity (branding), collateral design, and advertising campaigns for print media. Excellent research, process, design, and presentation skills required. Six contact hours. (Fall, Spring)

ARTG 4982. Graphic Design Projects. (3) Prerequisites: Art major status; grade of C or above in ARTG 4181 and ARTA 3201, 3202, or 3203. Corequisite: ARTA 4601. Advanced level studio course requiring independent solving of assigned design problems focusing on self promotion and issues pertaining to design and society. Project requirements also include the creation of new portfolio pieces and/or the revision of existing work. Six contact hours. (Fall, Spring)

Art History (ARTH)

ARTH 1211. Art History Survey I. (3) Survey of world art from prehistory to c. 1300 C.E., focusing on the functions and meanings of individual works of art, visual culture, and art history as a discipline. Lecture course. (Fall, Spring)

ARTH 1212. Art History Survey II. (3) Survey of
world art from c. 1300C.E. to the close of the second World War, focusing on the functions and meanings of individual works of art, visual culture, and art history as a discipline. Lecture course. (Fall, Spring)

ARTH 2110. Contemporary Art History. (3) Special Topics in art history. May be repeated for credit with change in topics. Lecture course. (On demand)

ARTH 2140. Medieval Art. (3) Prerequisite: grade of C or above in ARTH 1211 or permission of instructor. Survey of the architecture, sculpture, stained glass, mosaics, painting, manuscript illumination, and luxury objects of Europe between the fall of the Roman Empire until the beginning of the Renaissance, both in the Byzantine Empire and the western Middle Ages. (Fall)

ARTH 2190. Art of the United States. (3) Cross-listed as AMST 2050. Prerequisite: grade of C or above in ARTH 1212 or permission of instructor. Survey of the major artists and movements in the United States from the Colonial period through 1940. (On demand)

ARTH 3001. Topics in Art History. (1-3) Special topics in art history. May be repeated for credit with change in topic. (On demand)

ARTH 3100: Field Study in Visual Art. (3) Short, intensive summer course on contemporary art issues combining a seminar (reading, research, discussion, writing, and oral presentation) with a week-long group field trip to major museums, alternative spaces, galleries, and artists’ studios in New York City. (On demand)

ARTH 3114. Art History Methods. (3) Prerequisites: grade of C or above in ARTH 1211, 1212, and 2110, or permission of instructor. Survey of primary methodologies, theories and research in the history of art and art criticism, including formalism; iconography; connoisseurship; biography; social history; Marxism; feminism; postmodern, and contemporary theory. (Fall)

ARTH 3115. Honors Art History Methods. (3) Prerequisites: grade of C or above in ARTH 1211, 1212, and 2110, or permission of instructor. Survey of primary methodologies, theories and research in the history of art and art criticism, including formalism; iconography; connoisseurship; biography; social history; Marxism; feminism; postmodern, and contemporary theory. (On demand)

ARTH 3301. Topics in Art History. (3) Cross-listed as LTAM 3301. Prerequisite: grade of C or above in ARTH 1212 or permission of instructor. Survey of the cultures, artistic production and architecture of the Central Mexico region from c. 1300 to the period of European invasion in the 16th century. Readings and discussions focus on artistic traditions, daily life, and political structures. (Spring) (Alternate years)

ARTH 3318. Mexica (Aztec) Art. (3) Cross-listed as LTAM 3302. Prerequisite: grade of C or above in ARTH 1212 or permission of instructor. Survey of the cultures, artistic production and architecture of the Andean region up to the period of European invasion in 1532. Readings and discussions focus on artistic traditions, cosmology, and political structures. (On demand)

ARTH 3319. Andean Art. (3) Cross-listed as LTAM 3302. Prerequisite: grade of C or above in ARTH 1212 or permission of instructor. Survey of the cultures, artistic production and architecture of the Andean region up to the period of European invasion in 1532. Readings and discussions focus on artistic traditions, cosmology, and political structures. (On demand)

ARTH 3320. Ancient Egyptian & Near Eastern Art. (3) Prerequisite: grade of C or above in ARTH 1211 or permission of instructor. Survey of the arts and architecture of the ancient Near East, Egypt, and Aegean from 3000 - 600 B.C.E. Readings and discussions focus on issues of ethnicity, gender, religion, and politics. (Fall) (Alternate years)

ARTH 3322. Ancient Greek Art. (3) Prerequisites: grade of C or above in ARTH 1211 or permission of instructor. Survey of the arts and architecture of the ancient Greeks, Etruscans, and Persians from c. 800-31 B.C.E. Readings and discussions focus on issues of ethnicity, gender, religion, and politics. (Fall) (Alternate years)

ARTH 3323. Ancient Roman Art. (3) Prerequisite: grade of C or above in ARTH 1211. Survey of the arts and architecture of the peoples included in the Roman Empire from c. 300 B.C.E. to c. 400 C.E. Readings and discussions focus on issues of ethnicity, gender, religion, and politics. (Spring)

ARTH 3349. Gothic Art. (3) Prerequisite: grade of C or above in ARTH 1211. Survey of the art and architecture from the 11th to the 15th centuries in France, Germany, Bohemia, Italy, and the Low Countries. (Spring) (Alternate years)

ARTH 3350. Northern Renaissance Art. (3) Prerequisite: grade of C or above in ARTH 1212. Survey of Netherlandish and German painting, printmaking, and sculpture of the Renaissance. Readings and discussions focus on religion, patronage, and the uses of art in society. (Fall)

ARTH 3351. Italian Renaissance Art. (3) Prerequisite: grade of C or above in ARTH 1212 or permission of instructor. Survey of major artists and issues in Italian Renaissance art and architecture. Readings and discussions focus on major centers of artistic activity, patronage, and the rise of Humanism. (On demand)

ARTH 3360. Northern Baroque Art. (3) Prerequisite: grade of C or above in ARTH 1212 or permission of instructor. Survey of Northern European art from the
16th and 17th centuries. Readings and discussions focus on a variety of artistic genres and art’s relationship to religion and politics. (Spring) (Alternate years)

ARTH 3381. Modernism. (3) Prerequisite: grade of C or above in ARTH 1212 or permission of instructor. This course will address the history of modern art from 1850-1950 with a special emphasis on the European avant-garde, issues of identity construction (race, gender, sexuality), and theoretical discussions of representation. (Spring) (Alternate Years)

ARTH 3393. History of Photography. (3) Prerequisite: Art and Art History major status; grade of C or above in ARTH 1212 or permission of instructor. Survey of the major events and stylistic developments in photography from 1839 to the present. (Fall)

ARTH 3394. Women in Art. (3) Cross-listed as WGST 3050. A survey of the works and words of diverse women artists from Medieval to contemporary times with special consideration of social history and art theory. This course combines lectures with discussion, tests, research, and writing. (Spring) (Alternate Years)

ARTH 3810. Independent Study in Art History. (1-3) Prerequisite: permission of instructor. Supervised individual investigation of art history topic with appropriate documentation of research results. May be repeated for credit. (Fall, Spring)

ARTH 4212. Contemporary Art Theory & Criticism. (3) Prerequisite: grade of C or above in ARTH 3114. Major ideas and writings which discuss and interpret the visual arts of the contemporary era; readings in theory and criticism from the postmodern and current periods. (On demand)

ARTH 4601. Problems in Pre-Columbian Art History. (3) (O, W) Prerequisites: grades of C or above in ARTH 3114; and ARTH 3317, ARTH 3318, or ARTH 3319; or permission of instructor. A seminar designed around a problem in Pre-Columbian Art History, requiring reading, discussion, reports, and a major paper. May be repeated for credit as topics vary. (On demand)

ARTH 4603. Problems in Ancient Art History. (3) (O, W) Prerequisite: grades of C or above in ARTH 3114; and ARTH 3320, ARTH 3322, or ARTH 3323; or permission of instructor. A seminar designed around a problem in Ancient Art History, requiring reading, discussion, reports, and a major paper. May be repeated for credit as topics vary. (On demand)

ARTH 4605. Problems in Renaissance Art History. (3) (O, W) Prerequisites: grades of C or above in ARTH 3114; and ARTH 3350, ARTH 3351, or ARTH 3360; or permission of instructor. A seminar designed around a problem in Renaissance Art History, requiring reading, discussion, reports, and a major paper. May be repeated for credit as topics vary. (On demand)

ARTH 4609. Problems in Recent Art History. (3) (O, W) Prerequisites: grades of C or above in ARTH 3114; and ARTH 3390, ARTH 3393, or ARTH 3394; or permission of instructor. A seminar designed around a problem in Art History since 1900, requiring reading, discussion, reports, and a major paper. May be repeated for credit as topics vary. (On demand)

ARTH 4700. Art History Honors Thesis. (3) Prerequisites: grade of A in ARTH 3115 and permission of instructor. The preparation and presentation of an acceptable Honors thesis or its equivalent. The final course in a required three-course sequence for Honors in Art History. Completion of a thesis earning a grade C or above meets the requirement for a 4000 level course in the major; a grade “A” is required to earn honors. (On demand)

Illustration (ARTL)

ARTL 2186. Illustration I. (3) Prerequisites: Art major status; grade of C or above in ARTB 1203. Pre- or corequisite: ARTB 1205 and 1206. Survey of the history of illustration and problems in a wide range of media with emphasis on the significant precedents and individuals responsible for shaping the field. Studio projects, demonstrations, and critiques contribute to visual literacy. Six contact hours. (Fall, Spring)

ARTL 3086. Topics in Illustration. (1-3) Prerequisite: Art major status. Special topics in illustration. May be repeated for credit with change in topic. (On demand)

ARTL 3186. Illustration: Media/Method. (3) Prerequisites: Art major status; grade of C or above in ARTL 2186. Pre- or corequisites: ARTD 2139 and 3134. Tools and techniques of illustration including preliminary sketching, photography, library, and Internet research. (Fall)

ARTL 3187. Children's Book Illustration. (3) Prerequisites: Art major status; grade of C or above in ARTL 2186 and ARTA 3201, 3202, or 3203. Survey of layout, research, storyboard, dummy, and finished artwork necessary to create a children's book for presentation to publishers. Come prepared with an idea for a children's book. Six contact hours. (Fall) (Alternate years)

ARTL 3188. The Figure in Illustration. (3) Prerequisites: Art major status; grade of C or above in ARTD 2139, ARTD 3134, ARTL 2186, and ARTA 3201, 3202, or 3203. Examination of memory and research techniques to draw the figure in any position or environment. Emphasis on anatomy, form, composition, and costume. Six contact hours. (Fall) (Alternate years)

ARTL 3286. Illustration Sequence/Story. (3) Prerequisites: Art major status; grade of C or above in ARTD 3134, ARTL 2186 and ARTA 3201, 3202, or 3203. Pre- or corequisite: Students working in the Illustration Concentration must be taking or have taken ARTD 2139; students working in the Graphics
Design Concentration must be taking or have taken ARTL 2186. Relationship between words and pictures. Development of a narrative pictorial approach in problems for a wide variety of markets. Single and sequential images as visual solutions. Six contact hours. (Spring)

ARTL 4981. Illustration Projects. (3) Prerequisites: Art major status; grade of C or above in ARTL 3186, ARTL 3286 and ARTA 3201, 3202, or 3203. Corequisite: ARTA 4601. Initiation and implementation of a self-designed advanced level project solving a complex artistic problem. Research in self promotion, professional practice and portfolio refinement required. Six contact hours. (Spring)

Digital Media (ARTM)

ARTM 2105. Digital Media. (3) Prerequisites: Art major status; grade of C or above in ARTB 1201 and 1203. Pre- or corequisite: ARTB 1206. Methods of digital and electronic production within a fine arts context, Macintosh hardware and software, an historical overview of electronic artists and artworks, and the Internet as a publishing and research tool. Six contact hours. (Fall, Spring)

ARTM 3005. Topics in Digital Media. (1-3) Prerequisites: Art major status; permission of instructor; ARTA 3201, ARTA 3202 or ARTA 3203. Special topics in digital media and their integration with non-digital media. May be repeated for credit with change in topic. (On demand)

ARTM 3101. Digital Media II. (3) Prerequisite: Art major status; grade of C or above in ARTM 2105. Advanced methods of digital and electronic art production within the fine arts context. Six contact hours. (Fall)

ARTM 3103. Animation and Interactivity. (3) Prerequisites: Art major status; grade of C or above in ARTM 2105 and ARTA 3201, ARTA 3202, or ARTA 3203. Emphasis on the tools, techniques, and software used in the creation of interactive multimedia and animation, especially media creation for video, the Internet, and CD-ROM. (Fall, Spring)

ARTM 3105. Video Art. (3) Prerequisites: Art major status; grade of C or above in ARTM 2105. Video as an art form, including basic techniques of video production and editing, image processing techniques, integration between video and the computer, aesthetic and performance strategies for working in a time-based medium, and survey of the history of video art. Six contact hours. (Spring)

ARTM 3205. Interactive Art and Design. (3) Prerequisites: Art major status; grade of C or above in ARTM 2105 and ARTA 3201, 3202, or 3203. Advanced work in video art, interactive design, and digital installation art. Six contact hours. (Fall)

ARTM 3405. Internship in Digital Media. (3) Prerequisites: Art major status; grade of C or above in ARTM 3103, 3105, or 3205; and permission of instructor, department, and sponsor (consents required prior to registration). Non-salaried opportunity for students to observe, examine, and participate in the creative dynamics and procedural operations of an art organization, production house or other arts related business or expert craftsman dealing with digital media. Sponsor and faculty supervised. This experience requires 120 contact hours per semester. Graded on a Pass/No Credit basis. (On demand)

ARTM 4901. Digital Media Projects 1. (3) Prerequisites: Art major status; grade of C or above in ARTM 3103 or ARTM 3105 and ARTA 3201, 3202, or 3203. Digital media studio focused on producing a body of work related to an artistic problem or theme chosen and explored as visual research by the student. Six contact hours. (Fall, Spring)

ARTM 4902. Digital Media Projects 2. (3) Prerequisites: Art major status; grade of C or above in ARTM 4901 and ARTA 3201, 3202, or 3203. Corequisite: ARTA 4601. Continuation of ARTM 4901 culminating in a body of original art work in preparation for BFA Senior Exhibition. Six contact hours. (Fall, Spring)

Painting (ARTP)

ARTP 2131. Painting 1. (3) Prerequisites: Art major status; grade of C or above in ARTB 1201 and 1203. Beginning studio exploring basic theory and technique of painting using oil paints. Six contact hours. (Fall, Spring)

ARTP 3031. Topics in Painting. (1-3) Prerequisite: Art major status. Special topics in painting. May be repeated for credit with change in topic. (On demand)

ARTP 3131. Abstract Painting. (3) Prerequisites: Art major status; grade of C or above in ARTP 2131. Intermediate studio exploring varieties of abstraction in modern and post-modern painting practice, using acrylic and oil paints, collage, and mixed media. Six contact hours. (Fall)

ARTP 3132. Figure in Painting. (3) Prerequisites: Art major status; grade of C or above in ARTP 2131; ARTB 1205; and ARTA 3201, 3202, or 3203. Intermediate studio exploring the human form as a vehicle for artistic expression using oil and acrylic paints and mixed media. Six contact hours. (Spring)

ARTP 3161. Mixed Media. (3) Prerequisites: Art major status; grade of C or above in ARTP 2131. Intermediate studio exploring conceptual problems using color drawing media, painting, collage, and low-tech printmaking techniques. Six contact hours. (Fall, Spring)

ARTP 4931. Painting Projects 1. (3) Prerequisites: Art major status; grade of C or above in any 2 of the following: ARTP 3131, 3132, 3161; and one of the following: ARTA 3201, 3202, or 3203. Advanced studio exploring individual directions in painting and preparation for Senior Exhibition. Six contact hours. (Fall, Spring)
ARTR 4961. Print Media Projects 1. (3) Prerequisites: Art major status; grade of C or above in ARTP 3161 and 4931. Advanced studio continuing exploration of individual directions in painting and preparation for Senior Exhibition. Six contact hours. (Fall, Spring)

ARTR 4962. Print Media Projects 2. (3) Prerequisites: Art major status; grade of C or above in ARTR 4961 and ARTA 3201, 3202, or 3203. Studio exploring individual direction(s) in any method of print and combined media, and preparation for Senior Exhibition. Six contact hours. (Fall, Spring)

ARTR 4963. Print Media Projects 3. (3) Prerequisites: Art major status; C or above in ARTR 4962 and ARTA 3201, 3202, or 3203. Studio exploring individual direction(s) in any method of print and combined media, and preparation for Senior Exhibition. Six contact hours. May be repeated for credit without the exhibition. (Fall, Spring)

Photography (ARTT)

ARTT 2191. Photographic Media I. (3) Prerequisites: Art major status; grade of C or above in ARTB 1201. Pre- or corequisite: ARTB 1206. Fundamental principles, processes, and aesthetics of black and white photography. Introduction to photographic theory, operation of cameras, and basic darkroom techniques. Principles of photography as a means of personal expression. Six contact hours. (Fall, Spring)

ARTT 3190. Digital Photography. (3) Prerequisites: Art major status; grade of C or above in ARTT 2191 and ARTM 2105. Exploration of the technical and aesthetic parameters unique to digital photography. Forms of input and output will be discussed along with advanced applications of Adobe Photoshop. Six contact hours. (On demand)

ARTT 3191. Camera & Light. (3) Prerequisites: Art major status; grade of C or above in ARTB 1201 and ARTT 2191. Principles and practices of small, medium or large format photography, in conjunction with available and studio lighting techniques. Emphasis on personal expression. Six contact hours. (Fall, Spring)

ARTT 3195. Documentary Photography and Video. (3) Prerequisites: Art major status; grade of C or above in ARTT 2191. Examines the nature of photographic documents, considering their sociological, anthropological, and artistic qualities. Students are required to study the history and criticism of documentation and to make a document incorporating historical information and contemporary concerns. Six contact hours. (On demand)

ARTT 3391. Black & White Printing. (3) Prerequisites: Art major status; grade of C or above in ARTB 1201, ARTT 2191 and ARTM 3201, 3202, or 3203. Continuation of ARTT 2191 with emphasis on contemporary methods, approaches and techniques in silver printing used as a means of creative personal expression. Six contact hours. (Fall, Spring)

ARTT 4291. Advanced Photographic Media. (3) Prerequisites: Art major status; grade of C or above in ARTT 3190, ARTT 3191 and ARTA 3201, 3202, or 3203. Advanced use of photographic media for
individual creative expression. May be repeated for credit. Six contact hours. *(Fall, Spring)*

**ARTT 4409. Internship in Photography. (3)**
Prerequisites: Art major status; grade of C or above in ARTT 3191, ARTT 4291, and ARTA 3202; and permission of instructor, department, and sponsor (consents required prior to registration). Non-salaried opportunity for students to observe, examine, and participate in the creative dynamics and procedural operations of photography and digital media art organizations, photographically and digital media related businesses, or museum studies. Sponsor and faculty supervised. This experience requires 120 contact hours per semester. Graded on a Pass/No Credit basis. *(Fall, Spring, Summer)*

**ARTT 4991. Photography Projects 1. (3)**
Prerequisites: Art major status; grade of C or above in ARTT 3391; ARTT 4291; and ARTA 3201, 3202, or 3203. Photographic, video and digital media studio focused on producing a body of work related to an artistic problem or theme chosen and explored as visual research by the student. Six contact hours. *(Fall, Spring)*

**ARTT 4992. Photography Projects 2. (3)**
Prerequisites: Art major status; grade of C or above in ARTT 4991 and ARTA 3201, 3202, or 3203. Corequisite: ARTA 4601. Continuation of ARTT 4991 and completion of a body of original art work. Six contact hours. *(Fall, Spring)*

**Sculpture (ARTZ)**

**ARTZ 2104. Installation Art. (3)**
Prerequisites: Art major status; grade of C or above in ARTB 1201 and 1202. Pre- or corequisite: ARTB 1206. Techniques and methods of creating Installation Art, from the generation of initial ideas, to experimentation, mockups, and final assembly. Emphasis on the historical and creative issues surrounding the nature and definition of installation art. Six contact hours. *(Spring)*

**ARTZ 2141. Sculpture 1: Why Sculpture. (3)**
Prerequisites: Art major status; grade of C or above in ARTB 1202 and 1203. Pre- or corequisite: ARTB 1206. Introduction to Sculpture, developing understanding and application of 3 dimensional design principles with strong emphasis on expressive qualities of objects and their form. Investigates potential of sculpture as a tool of communication in addressing contemporary subjects and phenomena, from the aesthetical and cultural to social and political. Introduces construction techniques using wood, mixed media, assemblage, ready-made objects, clay modeling from life, waste mold making, and plaster casting. Six contact hours. *(Fall, Spring)*

**ARTZ 3041. Topics in Sculpture. (1-3)**
Prerequisites: Art major status; grade of C or above in ARTB 1202. Special Topics in sculpture. May be repeated for credit with change in topic. *(On demand)*

**ARTZ 3104. Installation Art 2. (3)**
Prerequisites: Art major status; grade of C or above in ARTZ 2104. Intermediate level continuation of ARTZ 2104. Emphasis is placed on personal expression, concept evolution and site-specific works. May be repeated once for credit. Six contact hours. *(Fall, Spring)*

**ARTZ 3142. Sculpture 2: Object vs. Event. (3)**
Prerequisites: Art major status; grade of C or above in ARTZ 2141. Investigates theory and practice of contemporary sculpture in the context of its history and current developments. Addresses the relevance of object making vis à vis the era of digital media. Interdisciplinary approach introducing installation and performance as well as metal fabrication and lost wax bronze casting. Emphasizes importance of artistic research. Six contact hours. *(Fall, Spring)*

**ARTZ 3243. Sculpture 3: Sculpture = Concept. (3)**
Prerequisites: Art major status; grade of C or above in ARTZ 2104 and 3142. Focuses on conceptual aspects of sculpture/installation. Develops student ability to communicate with audience specific ideas utilizing varied materials and forms of expression. Requires students to present their artistic research in a broad context of reasons for art making. Environmental topics and environmental art/installation will be introduced. Introducing more advanced metal and wood fabrication techniques and less traditional sculpture media. Six contact hours. *(Fall, Spring)*

**ARTZ 3344. Sculpture 4: From Studio to Public Space. (3)**
Prerequisites: Art major status; grade of C or above in ARTZ 3104, ARTZ 3243; and ARTA 3201, 3202, or 3203. Explores art in public spaces with emphasis on work, which inspires critical dialogue and non-traditional public venues for art, including work integrated into the city infrastructure as well as temporary artistic intervention in the urban environment. Stresses the site-specific character of the work. Introduces media, technologies, and requirements of work in public settings. Six contact hours. *(Fall, Spring)*

**ARTZ 4941. Sculpture Projects 1. (3)**
Prerequisites: Art major status; grade of C or above in ARTZ 3344 and ARTA 3201, 3202, or 3203. Advanced studio exploring self directed artistic investigation based on goals and interests as defined in student’s project proposal. A coherent body of work will be created in preparation for the Senior Exhibition. Six contact hours. *(Fall, Spring)*

**ARTZ 4942. Sculpture Projects 2. (3)**
Prerequisites: Art major status; grade of C or above in ARTZ 4941 and ARTA 3201, 3202, or 3203. Studio continuing exploration of individual direction(s) in sculpture in preparation for Senior Exhibition. Six contact hours. *(Fall, Spring)*

**ARTZ 4943. Sculpture Projects 3. (3)**
Prerequisites: Art major status; grade of C or above in ARTZ 4942 and ARTA 3201, 3202, or 3203. Corequisite: ARTA 4601. Studio continuing exploration of individual direction(s) in sculpture in preparation for Senior Exhibition. Six contact hours. *(Fall, Spring)*
ATHLETIC TRAINING (ATRN)

ATRN 2150. Introduction to Kinesiology. (3) Cross-listed as EXER 2150. Prerequisite: Must be a PKNS major (open to all students during summer session). Introduction to the study of health fitness relative to philosophies, practices, work settings, trends, knowledge bases, skills and licensures. (Spring, Summer)

ATRN 2290. First Aid: Responding to Emergencies. (3) Cross-listed as EXER 2290. Prerequisite: PKNS major. The knowledge and skills associated with being a first responder in case of injury or sudden illness. Qualifying students may receive certifications in: Responding to Emergencies-First Aid, CPR/AED for the Professional Rescuer, Preventing Disease Transmission (Bloodborne Pathogens Training) and Automated External Defibrillator (AED). Open to all students during summer session. Additional $20 course fee applies. (Fall, Spring, Summer)

ATRN 2294. Care and Prevention of Athletic Injuries. (3) Cross-listed as EXER 2294. Prerequisite or corequisite: EXER 2290 or ATRN 2290, and must be a PKNS major. Focus on the health care competencies necessary for the prevention, emergency management and acute care of athletic-related injuries. Also provides an introduction to the role of the Certified Athletic Trainer in providing health to the physically active individual. (Spring)

ATRN 2295. Care and Prevention of Athletic Injuries Laboratory. (1) Prerequisite: admission to Athletic Training major. Focus on the psychomotor competencies and clinical proficiencies necessary for the prevention, emergency management and acute care of athletic-related injuries. Additional $30 course fee applies. (Summer)

ATRN 2298. Applied Kinesiology. (3) Cross-listed as EXER 2298. Prerequisites: a grade of C or above in BIOL 1273, BIOL 1273L, and PKNS major. The study of musculoskeletal anatomy and how it relates to normal function of the human body. (Spring)

ATRN 3099. Movement Problems/Topics. (1-6) Prerequisite: permission of instructor. Movement problems/topics chosen by the student which relate to special areas of interest. May be repeated for credit with approval of instructor. (Fall, Spring, Summer)

ATRN 3260. Nutrition for the Physically Active. (3) Cross-listed as EXER 3260. Prerequisite: EXER or ATRN major. Introduction to principles and concepts of nutrition and how dietary practices affect health and disease. (Fall)

ATRN 3280. Exercise Physiology: Foundation and Theory. (3) Cross-listed as EXER 3280. Prerequisite: EXER or ATRN major. The physiological responses to exercise, adaptations to exercise training and the mechanisms responsible for them in relation to both health fitness and athletic performance. (Fall)

ATRN 3281. Exercise Physiology Laboratory. (1) Cross-listed as EXER 3281. Corequisite: EXER 3280 or ATRN 3280. Laboratory experiences and assignments to enhance the lecture material presented in ATRN 3280. One laboratory period of two hours a week or two one hour labs. (On demand)

ATRN 3286. Exercise Testing: Principles and Theory. (3) Cross-listed as EXER 3286. Prerequisite: a grade of C or above in EXER 3280 or ATRN 3280. Corequisite: ATRN 3287. This course is designed to teach methods and protocols for collecting and interpreting information collected on individuals concerning various fitness parameters for the future development of individual and group conditioning programs. (Spring)

ATRN 3287. Exercise Testing Lab. (1) Corequisite: EXER 3286 or ATRN 3286. Practitioner lab in the use of appropriate data collection methods and protocols. (Spring)

ATRN 3288. Upper Body Injury Evaluation. (3) Prerequisite: Acceptance into the Athletic Training Education Program. An upper division athletic training course focusing on orthopedic evaluation competencies for assessing athletic-related injuries and pathology to the upper extremities, cervical and thoracic spine. (Fall)

ATRN 3289. Upper Body Injury Evaluation Laboratory. (1) Corequisite: ATRN 3288. Practitioner lab focusing on the psychomotor competencies and clinical proficiencies related to upper extremity, cervical and thoracic spine injury and pathology assessment. (Fall)

ATRN 3290. Lower Body Injury Evaluation. (3) Prerequisites: Acceptance into the Athletic Training Education Program. An upper division athletic training course focusing on orthopedic evaluation competencies for assessing athletic-related injuries and pathology to the lower extremities and lumbar spine. (Fall)

ATRN 3291. Therapeutic Modalities. (3) Prerequisite: Acceptance into the Athletic Training Education Program. A study of the theories and techniques of therapeutic modalities within the scope of athletic training. (Spring)

ATRN 3292. Therapeutic Modalities Laboratory. (1) Corequisite: ATRN 3291. Practitioner lab focusing on the psychomotor competencies and clinical proficiencies related to the use of therapeutic modalities within the scope of athletic training. (Spring)

ATRN 3293. General Medical and Psychosocial Aspects of Athletic Training. (3) Prerequisites: ATRN 3288, ATRN 3289, 3290 and ATRN 3295. Study of cognitive, psychomotor, and affective competencies and proficiencies that the entry-level certified athletic trainer must possess to recognize, treat, and refer, when appropriate, the general medical conditions, psychosocial situations, and disabilities of athletes and others involved in physical activity. (Spring)
ATRN 3295. Lower Body Injury Evaluation Laboratory. (1) Corequisite: ATRN 3290. Practitioner lab focusing on the psychomotor competencies and clinical proficiencies related to lower extremity and lumbar spine injury evaluations. (Fall)

ATRN 3298. Therapeutic Exercise Foundations. (3) Prerequisites: ATRN 3290 and ATRN 3295. Study of the theory and principles that guide the application of therapeutic exercise. (Spring)

ATRN 3400. Athletic Training Clinical I. (2) Prerequisites: Acceptance into the Athletic Training Education Program. Acquisition and application of clinical proficiencies and psychomotor competencies necessary for the entry-level athletic trainer. Students must complete approximately 20 hours of clinical experience per week at an approved athletic training clinical agency. (Fall)

ATRN 3401. Athletic Training Clinical II. (2) Prerequisite: ATRN 3400. Continuation of ATRN 3400. Students must complete approximately 20 hours of clinical experience per week at an approved athletic training clinical agency. (Spring)

ATRN 4121. Pharmacology for the Physically Active. (3) Cross-listed as EXER 4121. Prerequisite: EXER 3260 or ATRN 3260 with a grade of C or above. The course entails an examination of the historical aspects of use, abuse, and addiction within the realm of healthcare and human performance. This course will expose students to a wide variety of drug issues and the unique use and abuse patterns of individuals treated in healthcare settings and physical fitness. (Fall)

ATRN 4132. Lifetime Weight Management. (3) Prerequisites or corequisites: EXER 3260 or ATRN 3260. Examines factors in obesity and weight control, emphasizing techniques in behavior modification and lifestyle change for effective weight management. (Spring)

ATRN 4286. Exercise Prescription. (3) Cross-listed as EXER 4286. Prerequisite Successful completion of EXER 3286 or ATRN 3286 and EXER 3287 or ATRN 3287. This course is designed to teach the interpretation and prescription of exercise and various fitness parameters for programs with healthy populations and general clinical populations. (Fall)

ATRN 4290. Therapeutic Exercise. (3) (W) Prerequisite: ATRN 3298. Application of the therapeutic techniques used in rehabilitation for upper and lower body injuries within the scope of athletic training. (Fall)

ATRN 4291. Therapeutic Exercise Laboratory. (1) Corequisite: ATRN 4290. Practitioner lab focusing on the psychomotor competencies and clinical proficiencies related to the use of therapeutic exercise within the scope of athletic training. (Fall)

ATRN 4292. Organization and Administration of Athletic Training. (3) (O) (W) Prerequisites: ATRN 4290, ATRN 4291. Athletic training organization and administration. (Spring)

ATRN 4293. Biomechanics. (3) Cross-listed as EXER 4293. Prerequisites: a grade of C or above in EXER 3280 or ATRN 3280. This course provides an introduction to the study of physics principles as they govern human movement, as well as understanding how the neuromuscular system controls human movement. Additionally, this course covers the mechanical principles that underlie musculoskeletal injury, as well as the influence that gender and ethnicity may have on various musculoskeletal pathologies. (Fall)

ATRN 4294. Biomechanics Lab. (1) Cross-listed as EXER 4294. Corequisite: ATRN 4293. Laboratory experiences and assignments to enhance the lecture material presented in ATRN 4293. One laboratory period of two hours a week or two one hour labs. (On demand)

ATRN 4400. Athletic Training Clinical III. (2) Prerequisite: ATRN 3401. Acquisition and application of advanced clinical proficiencies and psychomotor competencies necessary for the entry-level athletic trainer. Students must complete approximately 20 hours of clinical experience per week at an approved athletic training clinical agency. (Fall)

ATRN 4401. Athletic Training Clinical IV. (2) Prerequisite: ATRN 4400. Continuation of ATRN 4400. Students must complete approximately 20 hours of clinical experience per week at an approved athletic training clinical agency. (Spring)

ATRN 4660. Practitioner Seminar. (3) (O, W) Prerequisites: Must be taken during the term closest to internship ATRN 4401. Emphasis is on state of the art health enhancement practices. (Spring)

BINF 1101. Introduction to Bioinformatics and Genomics. (3) Designed to introduce students to the genomics perspective in the life sciences, this course combines a general introduction to genomic technologies and the bioinformatics methods used to analyze genome-scale data with a presentation of real world scientific problems where these technologies are having an impact. This course fulfills a general education science requirement. (Fall)

BINF 1101L. Introduction to Bioinformatics and Genomics Lab. (1) Pre- or corequisite: BINF 1101. Designed to introduce students to the genomics perspective in the life sciences, this course provides hands-on experience with biological sequence and structure databases, using small-scale projects to introduce students to the world of bioinformatics research. vOne three-hour laboratory per week (Fall)

BINF 2101. Genomic Methods. (3) Prerequisites: BIOL 1101 and 1101L, BIOL 2120, or permission of instructor. Pre- or corequisite: BINF 1101.
Corequisite: BINF2101L. Lecture topics introduce students to core concepts in genomics that allow bench scientists to acquire large datasets in a high-throughput manner as well as address the computational methods used to analyze these data resources. (Spring)

BINF 2101L. Genomic Methods Lab. (2) Corequisite: BINF 2101. This is the laboratory component of the genomics methods laboratory course. Labs are intended to give students hands-on experience in setting up and performing experiments with an emphasis on nucleic acid and protein profiling, understanding and trouble-shooting published protocols, interpreting the data using computational tools. (Spring)

BINF 2111. Introduction to Bioinformatics Computing. (4) Pre- or corequisite: BINF 1101. This course introduces fundamentals of programming for bioinformatics (sometimes called “scripting”) using current programming languages and paradigms. Introduces both the language and the use of the language within a Unix environment, demonstrating how interpreted languages serve both as a useful tool for writing and testing programs interactively and as a powerful data analysis and processing tool for bioinformatics. (Fall)

BINF 2121. Statistics for Bioinformatics. (3) Pre- or corequisite: BINF 1101. Prerequisite: Satisfactory completion of either MATH 1103, MATH 1120, MATH 1121, MATH 1241, STAT 1220, STAT 1221, STAT 2122, or permission of instructor based on sufficient demonstration of foundational mathematics concepts. Concepts from probability, stochastic processes, information theory, and other statistical methods will be introduced and illustrated by examples from molecular biology, genomics and population genetics while exploring the use of the R and Bioconductor software for biostatistical analysis. (Spring)

BINF 3101. Sequence Analysis. (3) Pre- or corequisites: BINF 2101 and BINF2101L or permission of instructor. This course covers the purpose, application, and biological significance of bioinformatics methods that identify sequence similarity, methods that rely on sequence similarity to produce models of biological processes and systems, as well as methods that use sequence characteristics to predict functional features in genomic sequence data. (Fall)

BINF 3111. Bioinformatics Algorithms. (4) Prerequisite: ITCS 1212L or equivalent programming experience. Pre- or corequisite: BINF 3101. Introduces common algorithms and data structures used in bioinformatics and genomics. Consideration is given to the optimization and appropriate use of both through guided computational laboratory exercises. (Spring)

BINF 3211. Bioinformatics Databases and Data Mining Technologies. (3) Prerequisite: BINF 1101. This is a lecture course that incorporates extensive computational exercises, some of which will be done in class. Lecture topics are intended to introduce students to core concepts in both database management system theory and implementation and in data modeling for genomics data types. Exercises are intended to give students practical experience in setting up and populating a database, using public data repositories and using standard tools for retrieving data (SQL), and further, using existing tools for data mining and visualization of genomics data types. Emphasis will be placed on standards and emerging practices. (Spring)

BINF 3900. Undergraduate Research. (1-3) Prerequisites: BINF 1101 and permission of the instructor. Enables students in the Bioinformatics and Genomics program to initiate research projects in their respective fields of interest and to interact with faculty in pursuing research experience. May be repeated for credit. (Fall, Spring, Summer)

BINF 4010. Topics in Bioinformatics and Genomics. (1-3) Prerequisite: permission of the department. May also be repeated for credit with the permission of the department. A student may register for multiple sections of the course with different topics in the same semester or in different semesters. (On demand)

BINF 4101. Computational Systems Biology. (3) Prerequisite: BINF 3101. The process of reconstructing complex biological networks. Reconstruction of metabolic networks, regulatory networks and signaling networks using bottom-up and top-down approaches will be addressed using collections of historical data as well as departmentally generated data. The principles underlying high-throughput experimental technologies and examples given on how this data is used for network reconstruction, consistency checking, and validation will be covered throughout the semester. (On demand)

BINF 4111. Structural Bioinformatics. (3) Prerequisite: BINF 3101. Includes the physical forces that shape biological molecules, assemblies and cells; overview of protein and nucleic acid structure; experimental methods of structure determination; data formats and software for structure visualization; computational methods to evaluate structure; structural classification; structure alignment; computational algorithms for structure prediction; and structural analysis of disease-causing mutations. (Spring)

BINF 4171. Business of Biotechnology. (3) Prerequisite: Junior or Senior status in a scientific/technical course of study or if in a non-biological/technical or scientific program, special permission of the instructor. Introduces students to the field of biotechnology and how biotech businesses are created and managed. The students should be able to define biotechnology and understand the difference between a biotech company and a pharmaceutical company. Additional concepts covered will include platform technology, biotechnology's history, biotechnology products and development processes, current technologies used by
biotech companies today, biotechnology business fundamentals, research and development within biotech companies, exit strategies, and careers in the biotech field. (Spring)

BINF 4191. Biotechnology and the Law. (3) Prerequisite: Junior or Senior status in a scientific/technical course of study or if in a non-biological/technical or scientific program, special permission of the instructor. At the intersection of biotechnology and the law, an intricate body of law is forming based on constitutional, case, regulatory and administrative law. This body of legal knowledge is interwoven with ethics, policy and public opinion. Because biotechnology impacts everything in our lives, the course will provide an overview of salient legal biotechnology topics, including but not limited to: intellectual property, innovation and approvals in agriculture, drug and diagnostic discovery, the use of human and animal subjects, criminal law and the courtroom, agriculture (from farm to fork), patient care, bioethics, and privacy. The body of law is quite complex and it is inundated with a deluge of acronyms. The course will provide a foundation to law and a resource to help students decipher laws and regulation when they are brought up in the workplace. (Fall)

BINF 4211. Applied Data Mining for Bioinformatics. (4) Prerequisite: permission of the department. Concepts and techniques of evaluating bioinformatics data. The objective of this course is to provide students with a working knowledge of data sources, current tools and methodologies used for bioinformatics research though a variety of hands-on data analysis activities. (Spring)

BINF 4450. Senior Project. (3) Prerequisites: Senior standing and permission of the department. An individual or group project in the teaching, theory, or application of bioinformatics, genomics, or computational biology under the direction of a faculty member. Projects must be approved by the department before they can be initiated. (On demand)

BINF 4600. Bioinformatics and Genomics Seminar. (1) Prerequisite: BINF 3101 or permission of instructor. A senior level seminar course designed to introduce students to the research being conducted in both the Department of Bioinformatics and Genomics at UNC Charlotte, as well as through invited speakers from other universities. (Fall, Spring)

BIO 1000. Special Topics in Biology. (1-4) Prerequisites: vary with course. Special topics for non-majors in Biology. May be repeated for credit as topics vary. Lecture hours and laboratory hours vary by courses taught. (On demand)

BIO 1110. Principles of Biology I. (3) Introduction to biology for non-majors. Fundamental principles of life with a human emphasis. Not accepted toward the major in Biology. (Fall, Spring, Summer)

BIO 1110L. Principles of Biology I Laboratory. (1) Prerequisite or corequisite: BIO 1110. One laboratory period of three hours a week. Not accepted toward the major in Biology. (Fall, Spring, Summer)

BIO 1115. Principles of Biology II. (3) Prerequisite: a grade of C or above in BIO 1110 or permission of instructor. Continuation of BIO 1110 for non-majors. Fundamental principles of life with a human emphasis. (Spring)

BIO 1259. Bacteriology. (3) Prerequisite: A grade of C or above in CHEM 1203 or 1251. Basic physiology of bacteria, fungi, protozoa, and viruses, with emphasis on host-parasite interaction and control and epidemiology of infectious diseases. Not accepted toward the major. (Fall, Spring, Summer)

BIO 1259L. Bacteriology Laboratory. (1) Pre- or corequisite: BIO 1259. One laboratory period of three hours per week. Attendance mandatory for safety training. Not accepted toward the major. (Fall, Spring, Summer)

BIO 1273. Human Anatomy and Physiology. (3) Prerequisites: a grade of C or above in CHEM 1203 or 1251. Fundamentals of the anatomy and physiology of the human body. Not accepted toward the major. (Fall, Summer)

BIO 1273L. Human Anatomy and Physiology Laboratory. (1) Pre- or corequisite: BIO 1273. One laboratory period of three hours a week. Not accepted toward the major. (Fall, Summer)

BIO 1274. Human Anatomy and Physiology II. (3) Prerequisite: A grade of C or above in BIO 1273. Continuation of BIO 1273. Not accepted toward the major. (Spring, Summer)

BIO 1274L. Human Anatomy and Physiology Laboratory II. (1) Pre- or corequisite: BIO 1274. One laboratory period of three hours a week. Not accepted toward the major. (Spring, Summer)

BIO 2000. Special Topics in Biology. (1-4) Prerequisite: varies by course offered. Special introductory topics for biology majors. May be repeated for credit as topics vary. Lecture hours and laboratory hours will vary with the courses taught. (On demand)

BIO 2120. General Biology I. (3) Origin and early evolution of life, basic principles of chemistry, cell biology, and genetics. Three lecture periods per week. (Fall, Summer)

BIO 2130. General Biology II. (3) Prerequisite: a grade of C or above in BIO 2120. Corequisite: BIO 2130L. Ecology, evolution, biodiversity, plant and animal structure and function. Three lecture periods per week. (Spring, Summer)

BIO 2130L. General Biology II Laboratory. (2) Prerequisite: A grade of C or above in BIO 2120. Co- or prerequisite: BIO 2130. Population ecology,
evolution, phylogenetics, invertebrate biology, animal and plant physiology. One three-hour laboratory period and linked laboratory lecture per week. (Spring)

BIOL 3000. Special Topics in Biology. (1-4) Prerequisite: vary with course. Special topics for intermediate level majors in Biology. May be repeated for credit as topics vary. Lecture hours and laboratory hours will vary with the courses taught. (On demand)

BIOL 3111. Cell Biology. (3) Prerequisite: a grade of C or above in BIOL 2130 and 2130L. Prerequisite or corequisite: CHEM 2130 or 2131 and CHEM 2131L. Structure and function of cells. Biomolecular structures and their interactions including membranes, proteins and nucleic acids. (Fall, Spring)

BIOL 3111L. Cell Biology Laboratory. (1) (W) Prerequisite or corequisite: BIOL 3111. One laboratory period of three hours a week. (Fall, Spring)

BIOL 3144. Ecology. (3) Prerequisite: a grade of C or above in BIOL 2130. Prerequisite or corequisite: CHEM 2130 or 2131. Interrelationships of organisms and their environment. (Fall, Spring)

BIOL 3144L. Ecology Laboratory. (1) (W) Prerequisite or corequisite: BIOL 3144. One laboratory period of three hours a week. (Fall, Spring)

BIOL 3161. Introduction to Biotechnology. (3) An overview of basic molecular biology, techniques, and uses of biotechnology tools in environmental and biomedical fields. Three lecture hours per week. (Spring)

BIOL 3166. Genetics. (3) Prerequisite: a grade of C or above in BIOL 2130 and 3111. Prerequisite (a grade of C or above in) or corequisite: CHEM 2130 or 2131. Basic concepts of heredity; principles of classical, molecular, and population genetics. (Fall, Spring)

BIOL 3166L. Genetics Laboratory. (1) (W) Prerequisite or corequisite: BIOL 3166. One laboratory period of three hours a week. (Fall, Spring)

BIOL 3202. Horticulture. (3) (W) Prerequisite: A grade of C or above in BIOL 2130. Principles of horticulture, greenhouse management, environmental factors, production, and maintenance of cultivars, and landscaping. (Every other fall)

BIOL 3202L. Horticulture Laboratory. (1) Prerequisite or corequisite: BIOL 3202. Greenhouse work, plant identification, and field trips. One laboratory period of three hours a week. (On demand)

BIOL 3215. Economic Botany. (3) (W) Prerequisite: A grade of C or above in BIOL 2130. Origins of agricultural plants; history of use and misuse of plants by humans; consideration of major groups of crop, spice, medicinal, and drug plants. (Spring)

BIOL 3222. General Botany. (3) Prerequisite: A grade of C or above in BIOL 2130. Morphology, physiology, reproduction, phylogeny, and ecology of plants. Students may not receive credit for both BIOL 1222 and BIOL 3222. (On demand)

BIOL 3222L. General Botany Laboratory. (1) Corequisite or prerequisite: BIOL 3222. One laboratory period of three hours a week. Students may not receive credit for both BIOL 1222L and BIOL 3222L. (On demand)

BIOL 3229. Field Botany. (3) Prerequisite: A grade of C or above in BIOL 2130 and permission of department. A field course stressing identification, classification and habitat of the vascular plants, particularly of the Piedmont, but also including the Coastal Plain and the mountains of North Carolina. Six hours a day for 10 days. (Summer)

BIOL 3231. Invertebrate Zoology. (4) Prerequisite: A grade of C or above in BIOL 2130. Taxonomy, anatomy, physiology, and life histories of selected invertebrates. Three lecture hours and one laboratory period of three hours a week. (On demand)

BIOL 3233. Vertebrate Zoology. (4) Prerequisite: A grade of C or above in BIOL 2130. Taxonomy, anatomy, physiology, and life histories of vertebrates. Three lecture hours and one laboratory period of three hours a week. (Every other fall)

BIOL 3234. Field Entomology. (3) Prerequisite: A grade of C or above in BIOL 2130 or permission of department. A field course stressing identification and ecology of insects of the Piedmont of North Carolina. Six hours a day for 10 days. (Summer)

BIOL 3235. The Biology of Insects. (3) Prerequisite: A grade of C or above in BIOL 2130 or permission of department. The anatomy, physiology, development, behavior, ecology, and medical and economic importance of insects. (On demand)

BIOL 3236. General Zoology. (3) Prerequisites: a grade of C or above in BIOL 2130. The morphology, function, development, phylogeny, and ecology of the principal invertebrate and vertebrate types. Credit cannot be received for both BIOL 1233 and BIOL 3236. (On demand)

BIOL 3236L. General Zoology Laboratory. (1) Prerequisite or corequisite: BIOL 3236. One laboratory period of three hours a week. Credit cannot be received for both BIOL 1233L and BIOL 3236L. (On demand)

BIOL 3272. Plant Physiology. (3) Prerequisite: a grade of C or above in BIOL 2130. Prerequisite or corequisite: CHEM 2130 or 2131. Metabolic and physiological processes of plants and conditions which affect or regulate these processes. (On demand)

BIOL 3273. Animal Physiology. (3) Prerequisite: a grade of C or above in BIOL 2130, BIOL 3111. Prerequisite or corequisite: CHEM 2130 or 2131.
Fundamental control mechanisms that operate to maintain the homeostatic state.

BIOL 3273L. Animal Physiology Laboratory. (1) (W)
Prerequisite or corequisite: BIOL 3273. One laboratory period of three hours a week. (Fall, Spring)

BIOL 3405. Internship in Biology. (1-3)
Prerequisites: Permission of the department. A project-oriented, internship with a biological focus. Supervised by a faculty member in the Department of Biology. Maximum credit toward major is two hours for B.A. and three hours for B.S. May be repeated for credit. (Fall, Spring, Summer)

BIOL 3500. Biology Cooperative Education and 49ership Experience. (0)
Prerequisite: approval by the department and the University Career Center. Required of students participating in the 49ership/service 49ership or Cooperative Education Program during the semesters in which they are working. Participating students pay a course registration fee for transcript notation (49ership and co-op) and receive full-time student status (co-op only). Assignments must be arranged and approved in advance. Course may be repeated; evaluation is Satisfactory/Unsatisfactory. Only open to undergraduate students; Graduate level students are encouraged to contact their academic departments to inquire about academic or industrial internship options for credit. For more information, contact the University Career Center. (Fall, Spring)

BIOL 3800. Tutorial in Biology. (1-4)
Prerequisite: Permission of the department. Enables biology majors to engage in directed study in their fields of interest. Maximum credit toward major: one hour for B.A.; two hours for B.S. May be repeated for credit. (Fall, Spring, Summer)

BIOL 3900. Undergraduate Research. (1-3)
Prerequisites: Permission of the department, minimum overall GPA of 2.8 and Biology GPA of 3.0. Enables biology majors to initiate research projects in their respective fields of interest. Maximum credit toward major: six hours for B.A.; nine hours for B.S. May be repeated for credit as topics vary. Minimum total of two credit hours of BIOL 3900 may count as one biology lab and a minimum total of four credit hours of BIOL 3900 may count for two biology labs. Maximum of two labs. (Fall, Spring, Summer)

BIOL 4000. Special Topics in Biology. (1-4)
Prerequisites and credit hours vary with topics. Special topics for advanced undergraduates. May be repeated for credit as topics vary. Lecture hours and laboratory hours will vary with the courses taught. (Fall, Spring)

BIOL 4040. Stem Cells. (3)
Prerequisite: BIOL 3166 with a grade of C or above. Current molecular genetics research in the broad field of stem cells. Discussion and interpretation of current research related to stem cell development, differentiation, regeneration, and molecular mechanisms of pluripotency. (Odd years)

BIOL 4111. Evolution. (3)
Prerequisites: a grade of C or above in BIOL 3166. Theories of evolution and forces which affect gene frequencies. (Fall)

BIOL 4121. Biometry. (4)
Prerequisite: A grade of C or above in one course in statistics. Design and analysis of experiments. Three lecture hours and one laboratory period of three hours a week. (Spring)

BIOL 4144. Advanced Ecology. (4) (W)
Prerequisite: A grade of C or above in BIOL 3144. Energy flow, nutrient cycles, community structure, population growth, and regulation. Three lecture hours and one laboratory period of three hours a week. (On demand)

BIOL 4162. Environmental Biotechnology I. (3)
Prerequisite: A grade of C or above in BIOL 3161 or BIOL 3199. Applications of biotechnology to solve real-world environmental civil-engineering problems working in interdisciplinary teams. Three lecture hours per week. (On demand)

BIOL 4163. Environmental Biotechnology II. (3)
Prerequisite: A grade of C or above in BIOL 3161 or BIOL 3199 and permission of instructor. Applying biotechnology in the laboratory to solve real-world environmental civil-engineering problems working in teams. One laboratory period and two lecture hours per week. (On demand)

BIOL 4168. Recombinant DNA Techniques. (4)
Prerequisite: A grade of C or above in BIOL 3166 or CHEM 4165 and permission of the instructor. Modern molecular biological methods (such as DNA cloning, gel electrophoresis, nucleic acid hybridization, PCR, and DNA sequencing) data analysis and interpretation. Two lecture hour and two laboratory periods of three hours a week. (On demand)

BIOL 4171. Cell Physiology. (3)
Prerequisite: A grade of C or above in BIOL 3111. The fundamental physiochemical properties of cells. (On demand)

BIOL 4184. Plant Biotechnology. (3)
Prerequisites: A grade of C or above in BIOL 3111, 3166 and CHEM 2132 or permission of department. A laboratory-oriented course designed to integrate plant molecular biology, recombinant DNA technology, and plant cell and tissue culture. One lecture hour and two laboratory periods of three hours a week. (On demand)

BIOL 4199. Molecular Biology. (3)
Prerequisites: A grade of C or above in BIOL 3111, 3166 and CHEM 2132. Structural and functional interaction of nucleic acids and proteins in the replication, transcription, and translation of genetic material. (Spring)

BIOL 4229. Dendrology. (4)
Prerequisite: A grade of C or above in BIOL 3229. The identification, structure, function, ecology, reproduction, and evolutionary relationships of woody plants. Three lecture hours and one three-hour lab a week. (On demand)
BIOL 4233. Parasitology. (3) Prerequisites: a grade of C or above in BIOL 2130. Morphology, life cycles, ecology, taxonomy, and medical and economic importance of parasites. Three lecture hours a week. (On demand)

BIOL 4234. Wildlife Biology. (3) (W) Prerequisite: A grade of C or above in BIOL 3144. Concepts, principles and techniques of wildlife biology. Value, demography, management, and conservation. (On demand)

BIOL 4235. Mammalogy. (4) Prerequisite: A grade of C or above in BIOL 3272 or 3273, or permission of instructor. Taxonomy, anatomy, physiology, and life histories of the mammals. Three lecture hours and one laboratory period of three hours a week. (Every other fall)

BIOL 4242. The Biology of Birds. (3) Prerequisite: a grade of C or above in BIOL 3144 or permission of department. Overview of general avian biology, including taxonomy and anatomy, but concentrating on behavior, ecology and conservation of birds. Focus will be on birds of the southeastern U.S. Three lecture hours and one laboratory period of three hours per week. (Spring)

BIOL 4242L. The Biology of Birds Lab. (1) Meets for one three-hour period per week (Spring). The laboratory and field portion of the Biology of Birds will focus on field identification and inventory techniques, with an introduction to anatomy. Students will need binoculars. (Spring)

BIOL 4243. Animal Behavior. (3) Prerequisite: A grade of C or above in BIOL 2130. An ethological approach to how animals respond to their environment. Causation, development, and adaptive significance of behavior in social systems. (Fall)

BIOL 4244. Conservation Biology. (3) (W) Prerequisite: A grade of C or above in BIOL 3144. Conservation values, extinction rates, genetic diversity, demography, habitat fragmentation, reserve management, ecological restoration. (On demand)

BIOL 4244L. Conservation Biology Laboratory. (1) Prerequisite or corequisite: BIOL 4244. One laboratory period of three hours a week plus field trips. (On demand)

BIOL 4250. Microbiology. (3) Prerequisite: A grade of C or above in BIOL 3111. Morphology, physiology, pathogenicity, metabolism, and ecology of bacteria, viruses, protozoa, and fungi. Aquatic, dairy, and food microbiology. (Spring)

BIOL 4250L. Microbiology Laboratory. (1) (W) Prerequisite or corequisite: BIOL 4250. One laboratory period of three hours a week. Attendance mandatory for safety training. (Fall, Spring)

BIOL 4251. Immunology. (3) Prerequisites: a grade of C or above in BIOL 3166. Cellular, molecular and genetic basis for immunity; physical chemistry of antigens and antibodies and their interactions; defense mechanisms. (Spring)

BIOL 4253. Marine Microbiology. (4) Prerequisites: a grade of C or above in BIOL 4250 and 4250L. Bacteria, fungi and viruses of marine origin, and their response to the salt, temperature, pressure and nutrient environment of the ocean. Roles of marine microorganisms in public health, pollution and fouling. Three lecture hours and one laboratory period of three hours a week. (On demand)

BIOL 4255. Bacterial Genetics. (3) Prerequisite: A grade of C or above in BIOL 3166 or permission of department. Regulation of gene expression in bacterial systems. Bacteriophage genetics. DNA transfer in bacteria. (Spring)

BIOL 4256. Pathogenic Bacteriology. (3) Prerequisite: A grade of C or above in BIOL 4250. Cellular and molecular interactions of mammalian hosts with prokaryotic parasites. (Spring)

BIOL 4256L. Pathogenic Bacteriology Laboratory. (1) (W) Prerequisite: A grade of C or above in BIOL 4250L. Prerequisite or corequisite: BIOL 4256. One laboratory period of three hours a week. (Fall)

BIOL 4257. Microbial Physiology and Metabolism. (3) Prerequisite: A grade of C or above in BIOL 4250. Lectures in microbial metabolism and physiology, including such topics as bacterial nutrition, transport mechanisms, catabolism and energy production, biosynthesis, global regulation of gene expression. Three one-hour lectures per week. (Spring)

BIOL 4257L. Microbial Physiology and Metabolism Lab. (1) Prerequisite or corequisite: BIOL 4257. Laboratory exercises covering such topics in general microbiology as characterization of microbial growth, transport, preparation and use of cell-free systems, isolation and electrophoresis of periplasmic proteins, isolation and characterization of membrane lipids, and the polymerase chain reaction. One three-hour lab per week. (On demand)

BIOL 4259. Virology. (3) Prerequisites: a grade of C or above in BIOL 4250, 4250L and CHEM 2132. Morphology, classification, genetics, and pathogenicity of bacterial and animal viruses. (On demand)

BIOL 4260. Population Genetics. (3) Prerequisites: a grade of C or above in STAT 1221 and BIOL 3166. The genetics of qualitative and quantitative traits in populations, including an assessment of the factors affecting the extent and pattern of the genetic variation in these traits. (On demand)

BIOL 4277. Endocrinology. (3) Prerequisites: a grade of C or above in BIOL 3273. Endocrine glands and their physiological roles in metabolism, growth and reproduction. (On demand)

BIOL 4279. Neurobiology. (3) Prerequisite: A grade of C or above in BIOL 3273. Physiology and anatomy of nervous systems, especially mammalian. (On demand)
Biol 4279L. Neurobiology Laboratory. (1) Prerequisite or corequisite: a grade of C or above in BIOL 4279. One laboratory period of three hours a week. (On demand)

Biol 4282. Developmental Biology. (3) Prerequisite: A grade of C or above in BIOL 4251 or permission of department. Developmental processes occurring chiefly during gametogenesis, fertilization, early embryogenesis, and organogenesis. (On demand)

Biol 4292. Advances in Immunology. (3) Prerequisite: A grade of C or above in BIOL 4251 or permission of department. Current topics in immunology with particular emphasis upon the genetic systems and molecular mechanisms underlying immune reactions. Additional work required by graduate students. (On demand)

Biol 4293. Comparative Vertebrate Anatomy. (4) Prerequisite: A grade of C or above in BIOL 3111. Comparison of selected anatomical systems across vertebrates, with emphasis on evolution and functional analyses. Three hours of lecture and one laboratory period of three hours per week. (Spring)

Biol 4405. Internship/Laboratory Research. (1-3) Prerequisite: permission of the instructor, and permission of the Biotechnology Program director. A biotechnology-oriented internship with either an organization or within a biotechnology-related laboratory within the Departments of Biology, Civil Engineering, or Chemistry. This course is required to obtain a Minor in Biotechnology. (Spring, Summer, Fall)

Biol 4600. Senior Seminar. (1) (O,W) Prerequisite: Senior standing, BIOL 3111, BIOL 3144, BIOL 3166, and either BIOL 3273 or BIOL 3272. Required course for all majors. Student presentation of oral and written reports from pertinent biological literature. Exit exam for biology majors will be administered. (Fall, Spring, Summer)

Biol 4601. Honors Seminar. (2) (O,W) Open by invitation to juniors. Exploration of the nature of science, ethics in science, critical analysis, hypothesis testing and statistical analysis, peer review, and research skills. Students analyze professional research papers, present their analyses orally, select an Honors Advisor, and write a research proposal. Exit exam for biology majors will be administered. Two lecture hours with occasional additional hours to attend special lectures and seminars. (Spring)

Biol 4700. Honors Research I. (3) Prerequisite: a grade of C or above in Biol 4601. Senior status. Independent Honors project: proposal, and research. By invitation. (Fall, Spring, Summer)

Biol 4701. Honors Research II. (3) (O,W) Prerequisite: BIOL 4700. Independent Honors project: thesis preparation and presentation of results. May be substituted for BIOL 4600 and for one lab. (Fall, Spring, Summer)

Business Law (BLAW)

Blaw 3150. Business Law I. (3) Prerequisite: INFO 2130, Junior standing, business major or permission of the department. A study of the legal setting of business and its relationship to the business firm. Topics covered include: the nature of law and the court system, criminal and civil procedure, alternative dispute resolution, constitutional authority to regulate business, business ethics, criminal law, torts, contracts, the law of sales, intellectual property, and cyberlaw. (Fall, Spring)

Blaw 3250. Business Law II. (3) Prerequisite: BLAW 3150; Junior standing, business major or permission of the department. The study of the Uniform Commercial Code. Subjects covered include commercial paper, bank deposits and collections, letters of credit, documents of title, secured transactions, creditors rights and bankruptcy, agency law, employment law and government regulation of business, business organizations and securities regulation, real and personal property, insurance, wills, trusts, and estates. (Yearly)

Business Honors (BUSN)

Busn 1100. Freshman Honors Seminar. (1) Prerequisites: Freshman standing in the Business Honors Program. A study of selected topics that impact the potential for success of business honors students in school and beyond. Topics include university life, corporate and community interaction, student in school and beyond. Topics include career selection, keys to success and practitioner interaction, among others. (Fall)

Busn 2000. Topics in Business and Economics. (1-3) Current topics from business and economics. May be repeated for credit as topics vary with permission of student’s major department chair. (On demand)

Busn 2400. Business Honors Internship. (1) Prerequisites: Sophomore, junior or senior students in good standing in the Business Honors Program, and the completion of INFO 2130 or equivalent. Requires permission of Assistant Director of the Business Honors Program. May be taken for repeat credit with different companies for up to a maximum of three (3) semester hours of credit. Provides a meaningful work experience, appropriate for the level of completed coursework of the student. Requires 50-150 hours of supervised employment. Requires a summary paper describing the business issues and processes learned through the experience. Internship proposals may be initiated by the student or by the Director or Assistant Director of the Business Honors Program. Students should consult with the Director or Assistant Director of the Business Honors Program in advance of registration to verify acceptability of work experience. Proposal forms must be completed and approved prior to registration. Graded on a Pass/No Credit Basis. (Fall, Spring, Summer)
BUSN 3770. Business Honors Thesis Topics. (1) Prerequisite: permission of the Assistant Director of the Business Honors Program. Exploration of current business research topics through presentations by business faculty. Graded on a Pass/No Credit Basis. (Spring)

BUSN 3780. Business Honors Seminar. (3) Prerequisites: permission of the Assistant Director of the Business Honors Program. Exploration of current topics in business and the methods of research appropriate to them. Development of research project proposal for Business Honors Thesis (BUSN 3790). (Spring)

BUSN 3790. Business Honors Thesis. (3) Prerequisites: BUSN 3780 and permission of the Assistant Director of the Business Honors Program. Honors project directed by Business Honors committee or assigned faculty member. One faculty contact hour per week and independent research. (On demand)

CIVIL AND ENVIRONMENTAL ENGINEERING (CEGR)

Courses must be completed to progress within three attempts including withdrawing from the course with a grade of W. Failure to progress in three attempts will result in suspension from the program.

CEGR 2101. Civil Engineering Drawing. (2) Introduction to engineering drawing in the environmental, geotechnical, transportation, and structural sub-disciplines of civil engineering, including sketching, principles of Mechanical drawing, and computer-aided drawing (CAD). CAD utilizes the MOSAIC computing environment. One hour of lecture and three hours of laboratory per week. (Fall)

CEGR 2102. Engineering Economic Analysis. (3) Prerequisite: ENGR 1201. Economic analysis of engineering solutions; present and annual worth analysis; cost benefit analysis; internal rate of return analysis; bonds and cost estimating. Three hours per week. (Fall)

CEGR 2104. Surveying and Site Design. (3) Prerequisite: ENGR 1202. Elements of plane surveying, including tapping, use of level, transit, theodolite, and total station; topographical surveying and mapping; error adjustment; area and volume computations; introduction to photogrammetry; site development; computer applications. One hour of lecture and 3 hours of field work for four weeks: three hours of lecture for 11 weeks. (Spring)

CEGR 2154. Design Project Lab. (2) (O) Prerequisite: CEGR 2102. Corequisite: ENGR 1202. Problem definition, evaluation of design alternatives, design concepts, conceptual design. Students work together in teams to find, present, and defend their solutions to real world civil engineering problems.

One hour of lecture and 3 hours of laboratory per week. (Spring)

Upper division engineering courses (3000 level and above) used to satisfy degree requirements within the College of Engineering are restricted to majors and minors of the College of Engineering.

CEGR 3090. Special Topics in Civil Engineering. (1-4) Prerequisite: Permission of CE Advisor. Examination of specific new areas emerging in the various fields of civil engineering based upon and synthesizing knowledge students have gained from engineering science, mathematics, and physical science stems of the core curriculum. May be repeated for credit. (On demand)

CEGR 3122. Structural Analysis. (3) Prerequisites: MEGR 2144 and MATH 2171 and Junior standing. Analysis of statically determinate and indeterminate beams, trusses and frames to include shear and moment diagrams, rough deflected shapes and deflections; influence lines and criteria for moving loads; indeterminate analyses to include methods of consistent deflection, slope deflection, and moment distribution. (Fall, Spring)

CEGR 3141. Introduction to Environmental Engineering. (3) Prerequisite: MATH 2171, CHEM 1251, and Junior standing. Environmental engineering concepts, including stream pollution analysis, water and wastewater treatment processes; solid and hazardous waste management practices; pollution problems and controls; mass balance analyses, and review of pertinent legislation. (Fall, Spring)

CEGR 3143. Hydraulics and Hydrology. (3) Prerequisites: MEGR 2141 and MATH 2171 and Junior standing. Fluid properties, pressure, closed-conduit flow, pipe network, pumps, open channel flow, weirs, orifices, flumes; precipitation, runoff, groundwater flow, steam flow, flow measurement. (Fall)

CEGR 3153. Transportation Laboratory. (1) (W) Corequisite: CEGR 3161. Design of transportation systems, including highways, airports, pipelines, and mass transit; route layout, geometric design and earthwork calculations; computer-aided system simulation and evaluation. One hour of lecture and three hours of laboratory per week. (Spring)

CEGR 3155. Environmental Laboratory. (1) (W) Prerequisite: CHEM 1251L, Corequisite: CEGR 3141. Laboratory problems in environmental engineering. Emphasis on analysis and presentation of results as well as on the significance of results as they affect theory and/or practice. One hour of lecture and three hours of laboratory per week. (Fall)

CEGR 3161. Transportation Engineering I. (3) Prerequisite: MATH 2241; CEGR 2102, 2104, and Junior standing. Analysis of transportation facilities; planning, location, and economic considerations, with special emphasis on land transportation. (Fall, Spring)
CEGR 3201. Systems and Design I. (3)
Prerequisites: CEGR 2154, Senior standing; three of the following five courses and the rest in progress: CEGR 3122, 3151, 3143, 3161, 3278. Systems engineering techniques applied to civil engineering problems emphasizing methodological considerations and engineering projects carried out by small groups of students. (Fall)

CEGR 3202. Systems and Design II. (4)
Prerequisites: CEGR 3201 in immediately previous semester. Continuation of CEGR 3201. Creatively investigate the produce alternative solutions for a comprehensive engineering project resulting in written and verbal class presentations. One hour of lecture and three hours of laboratory per week. (Spring)

CEGR 3212. Computer Applications in Civil Engineering. (3)
Prerequisite: Three of the following: CEGR 3122, 3141, 3143, 3161, 3278. Application of computers and numerical methods to various types of civil engineering problems. Examinations in depth of selected civil engineering problems. (On demand)

CEGR 3221. Structural Steel Design I. (3)
Prerequisites: CEGR 3122 and CEGR 3255 or permission of CE Advisor. Analysis and design of structural steel components with emphasis on theories necessary for a thorough understanding of the design procedure. Design philosophies and types of steel structures. Columns, tension members and laterally supported beams are considered. General Flexural theory, including bending of unsymmetrical sections. Current AISC Specifications used. (Fall)

CEGR 3225. Reinforced Concrete Design I. (3)
Prerequisite: CEGR 3122 and CEGR 3255 or permission of CE Advisor. Analysis and design of reinforced concrete components with emphasis on fundamental theories. Mechanics and behavior of reinforced concrete. Flexural members to include singly and double-reinforced beams of various cross sections (rectangular, T-beams, joists, one-way slabs, and others). Shear in beams and columns. Short columns to include uniaxial and biaxial bending. Construction of short column interaction diagrams. Introduction to footings. Current ACI Specifications. (Fall)

CEGR 3232. Urban Engineering. (3)
Prerequisite: Permission of CE Advisor. An examination of those societal problems of metropolitan regions most amenable to engineering solutions. Current urban literature will be reviewed in seminar, and selected topics amenable to engineering analysis will be studied. Written reports will be presented. (On demand)

CEGR 3255. Structural Materials Laboratory I. (1)
Prerequisite: CEGR 3122. Composition, properties, and testing of: wood, natural and artificial aggregates, bitumens, portland cement concrete, pozzolans, and structural metals. Data analysis, presentation, and report writing. One hour of lecture and three hours of laboratory per week. (Spring)

CEGR 3258. Geotechnical Laboratory. (1) (W)
Prerequisite: CEGR 3278. Test to determine engineering properties of soils; consistency, permeability, shear strength, and consolidation. Data analysis, presentation, and report writing. One hour of lecture and three hours of laboratory per week. (Fall)

CEGR 3278. Geotechnical Engineering. (3)
Prerequisite: MATH 2171, and MGR 2144. Soil origin, formation, composition, and classification; permeability; seepage; soil mechanics principles, including stresses, shear strength, and consolidation; foundations, retaining structures, and slope stability. Integration of design and technical reporting. (Fall, Spring)

CEGR 3282. Professional Development. (1)
Prerequisite: graduation date before next fall semester. A series of one-hour lectures by faculty and invited speakers on basic concepts of professionalism and the nature and purpose of engineering ethics. Pass/No Credit grading. (Fall)

CEGR 3695. Civil Engineering Cooperative Education Seminar. (1)
Required of co-op students following each work semester. Presentation of engineering reports on work done prior semester. (Fall, Spring, Summer)

CEGR 3890. Individualized Study. (1-3)
Prerequisite: Permission of CEE Advisor. Supervised individual study within an area of a student’s particular interest which is beyond the scope of existing courses. May be repeated for credit. (On demand)

CEGR 3990. Undergraduate Research in Civil Engineering. (1-4)
Prerequisite: Permission of CE Advisor. This course involves independent study of a theoretical and/or experimental problem in a specialized area of Civil Engineering. May be repeated for credit. (On demand)

CEGR 4090. Special Topics in Civil Engineering. (1-4)
Prerequisite: Permission of CE Advisor. Study of specific new areas emerging in the various fields of civil engineering. May be repeated for credit. (On demand)

CEGR 4108. Finite Element Analysis and Applications. (3)
Prerequisite: CEGR 3122 with a grade of C or above. Finite element method and its application to engineering problems. Application of displacement method to plane stress, plane strain, plate bending and axisymmetrical bodies. Topics include but are not limited to dynamics, fluid mechanics, and structural mechanics. (Spring)

CEGR 4121. Prestressed Concrete Design. (3)
Prerequisites: CEGR 3225 and 4224 or permission of CE Advisor. Analysis and design of prestressed components and systems, including materials and systems for prestressing, loss of prestress, flexural and shear design in accordance with current building codes, analysis of indeterminate prestressed systems,
and control of camber, deflection and cracking. (On demand)

CEGR 4123. Bridge Design. (3) Prerequisites: CEGR 3221 and 3225, or permission of CE Advisor. Review of bridge design codes and loadings; superstructure and substructure design of short, intermediate, and long span bridges constructed of steel and concrete; earthquake design; segmental and cable-stayed bridges. (Spring) (Alternate years)

CEGR 4124. Masonry Design. (3) Prerequisite: CEGR 3122 with a grade of C or above and CEGR 3225. Introduction of masonry material and engineering and materials properties and testing procedures. Design of reinforced and nonreinforced masonry (clay and concrete) walls, beams, and columns for vertical, wind, and seismic loads. Analysis and design of masonry structures (including torsion) and introduction to computer applications. (On demand)

CEGR 4128. Matrix Methods of Structural Analysis. (3) Prerequisite: CEGR 3122 or permission of CE Advisor. Derivation of the basic equations governing linear structural systems. Application of stiffness and flexibility methods of trusses and frames. Solution techniques utilizing digital computer. (On demand)

CEGR 4141. Process Engineering. (3) Prerequisite: CEGR 3141 or permission of CE Advisor. Applications of material and energy balance principles to the study of chemical, biological, and environmental engineering processes. Overview of applied biotechnology, engineering thermodynamics, and kinetics. (Fall)

CEGR 4142. Water/Wastewater Engineering. (3) Prerequisite: CEGR 3141 or permission of CE Advisor. Analysis and design of water and wastewater treatment processes including physical, chemical and biological treatment. Computer-aided design of treatment systems. (Spring)

CEGR 4143. Solid Waste Management. (3) Prerequisite: CEGR 3141 or permission of CE Advisor. Solid waste management, sources, generation rates, processing and handling, disposal, recycling, landfill closures, and remedial actions for abandoned waste sites. (Spring) (Alternate years)

CEGR 4144. Engineering Hydrology. (3) Prerequisite: CEGR 3143. The quantitative study of the various components of the water cycle, including precipitation, runoff, ground water flow, evaporation and transpiration, steam flow. Hydrograph analysis, flood routing, frequency and duration, reservoir design, computer applications. (On demand)

CEGR 4145. Groundwater Resources Engineering. (3) Prerequisite: CEGR 3143. Overview of hydrological cycle principles of ground water flow and well hydraulics. Regional groundwater flow and flow nets. Water chemistry and contamination. Applications of groundwater modeling. (Fall) (Alternate years)

CEGR 4146. Advanced Engineering Hydraulics. (3) Prerequisite: CEGR 3143 or permission of CE Advisor. Problems of liquids as applied in civil engineering; open channel flow; dams and spillways; water power; river flow and backwater curves; pipe networks, fire flow, sewage collection, groundwater, computer applications. (On demand)

CEGR 4161. Advanced Traffic Engineering. (3) Prerequisite: CEGR 3161 or permission of CE Advisor. Analysis of basic characteristics of drivers, vehicles, and roadway that affect the performance of road systems. Stream flow elements, volume, density, speed. Techniques of traffic engineering measurements, investigations and data analysis, capacity analysis. Intersections, accidents, parking. (Fall)

CEGR 4162. Transportation Planning. (3) Prerequisite: CEGR 3161. Urban transportation; travel characteristics of urban transportation systems; analysis of transportation-oriented studies; analytic methods of traffic generation, distribution, modal split, and assignment; traffic flow theory. (On demand)

CEGR 4171. Urban Public Transportation. (3) Prerequisite: CEGR 3161 or permission of CE Advisor. Planning, design, and operation of bus, rail, and other public modes. Relationship between particular modes and characteristics of urban areas. Funding, security and other administrative issues. (On demand)

CEGR 4181. Human Factors in Traffic Engineering. (3) Prerequisite: CEGR 3161 or permission of CE Advisor. Study of the driver's and pedestrian's relationship with the traffic system, including roadway, vehicle, and environment. Consideration of the driving task, driver and pedestrian characteristics, performance and limitations with regard to traffic facility design and operation. (On demand)

CEGR 4182. Transportation Environmental Assessment. (3) Prerequisites: Senior standing and permission of CE Advisor. A study of the environmental impact analysis and assessment procedures for transportation improvements. Route location decisions. Noise, air quality, socio-economic, and other impacts. (Fall) (Even years)

CEGR 4183. Traffic Engineering Studies. (3) Prerequisite: STAT 3128. Introduction to the traffic engineering studies most used by traffic engineers, including data collection techniques, statistical analysis procedures, report writing and presentation. One hour of lecture and three hours of laboratory per week. (On demand)

CEGR 4184. Highway Safety. (3) Prerequisite: CEGR 3161 and STAT 3128. Engineering responses at the state and local levels to the problem of highway safety. Extent of the highway safety problem, elements of traffic accidents, common accident countermeasures, collection and analysis of accident data, evaluation of safety-related projects and programs, and litigation issues. (On demand)
CEGR 4185. Geometric Design of Highways. (3) Prerequisite: CEGR 3153 and CEGR 3161. Theory and practice of geometric design of highways including intersections, interchanges, parking and drainage facilities. Driver ability, vehicle performance, safety and economics are considered. Two hours of lecture and three laboratory hours per week. (On demand)

CEGR 4222. Structural Steel Design II. (3) Prerequisite: CEGR 3122 with a grade of C or above and CEGR 3221. Analysis and design of structural steel components and systems with emphasis on theories necessary for a thorough understanding of the design of complete structures. Compression members affected by local buckling, continuous beams, and beam columns are covered. Welded and bolted connections. Current AISC Specifications used. (Spring)

CEGR 4224. Advanced Structural Analysis. (3) Prerequisite: CEGR 3122 with a grade of C or above. A continuation of CEGR 3122. Methods to determine deflections in structural members, including moment area, conjugate beam, virtual work, and matrix stiffness methods. Project to compare analysis techniques and introduce use of structural analysis computer programs. (Spring)

CEGR 4226. Reinforced Concrete Design II. (3) Prerequisite: CEGR 3122 with a grade of C or above and CEGR 3225. Analysis and design of reinforced concrete components and systems with emphasis on the fundamental theories necessary for a thorough understanding of concrete structures. Concentrically loaded slender columns, slender columns under compression plus bending. Wall footings and column footings. Analysis of continuous beams and frames. Total design project involving the analysis and design of a concrete structure. Current ACI Specifications used. (Spring)

CEGR 4241. Chemical Processes in Water and Wastewater Treatment. (3) Prerequisites: CHEM 1251 and CEGR 3141, or permission of CE Advisor. Chemical principles involved in the treatment of water and wastewaters; principles of chemical equilibrium relevant to natural water systems; the nature and effect of chemical interactions of domestic and industrial waste effluents on natural water systems. (On demand)

CEGR 4262. Traffic Engineering. (3) Prerequisite: CEGR 3161 or permission of CE Advisor. Operation and management of street and highway systems. Traffic control systems, traffic flow theory, and highway capacity. Evaluation of traffic engineering alternatives and the conduct of traffic engineering studies. (Spring)

CEGR 4270. Earth Pressures and Retaining Structures. (3) Prerequisites: CEGR 3122 and 3278 or permission of CE Advisor. Earth pressure theories, effects of wall friction and external loads (including earthquake); design of rigid retaining walls (including structural details); sheetpile wall design; soil reinforcement systems for retaining structures; computer applications. (On demand)

CEGR 4271. Pavement Design. (3) Prerequisites: CEGR 3161 and 3278, or permission of CE Advisor. Pavement design concepts and considerations; engineering properties of pavement materials, including soils, bases, asphalt concrete, and portland cement concrete; design of flexible and rigid pavements including shoulders and drainage; computer applications for pavement analysis and design. (On demand)

CEGR 4278. Geotechnical Engineering II. (3) Prerequisite: CEGR 3278 or permission of CE Advisor; corequisite: CEGR 3258. Design of shallow and deep foundations, including structural considerations; lateral earth pressure theories; design of rigid and flexible earth retaining structures; advanced aspects of slope stability analysis; and computer applications. (Spring)

CEGR 4892. Individualized Study and Projects. (1-6) Prerequisites: Permission of CE Advisor. Individual investigation and exposition of results. May be repeated for credit. (On demand)

CHEMISTRY (CHEM)

Separate lecture and laboratory sections -- Although the laboratory and lecture sections of CHEM 1111, 1112, 1203, 1204, 1251, 1252, 2131 and 2132 are taught as separate courses, it is strongly recommended that students take the appropriate laboratory concurrently with the lecture. Students with severe scheduling problems or students with course programs that do not require the laboratory may take the lecture without the laboratory. Students who withdraw from a lecture course will automatically be withdrawn from the corresponding laboratory. A student wishing to withdraw from CHEM 1251/1252/2131 lecture but retain the co-requisite lab may be allowed to do so if the following conditions are met: (1) the student must make a formal written request to the lecture instructor on the “Request to Retain Corequisite Chemistry Laboratory Form” no later than ten calendar days before the deadline to withdraw from a course with a “W” grade; and (2) the lecture instructor must determine that the student has actively participated in the course up to the due date for submitting such a request. Decisions will be made during the week prior to the deadline for withdrawing from a course. The decision of the instructor is final. Students using CHEM 1111 and 1112 or CHEM 1203 and 1204 or CHEM 1251 and 1252 to satisfy the General Education requirements for the B.A. and B.S. degree must also take the appropriate associated laboratory courses (i.e., CHEM 1111L, CHEM 1203L, or CHEM 1251L).

CHEM 1111. Chemistry in Today's Society. (3) For students not majoring in a Physical or Biological Science, Engineering, or science-oriented pre-professional program. Qualifies as a prerequisite only
for CHEM 1112. The role of chemistry in society and the impact of chemistry on society. An introduction to the chemical concepts needed to understand many of the numerous scientific problems confronting society today. Three lecture hours and one Problem Session hour per week. Credit will be given for only one course: 1111, 1203, or 1251. (Fall or Spring)

CHEM 1111L. Laboratory in Chemistry. (1) Prerequisite or corequisite: CHEM 1111. Laboratory exercises to demonstrate what chemists do, techniques used in the laboratory, and the limitations inherent in any laboratory experiment. One three-hour laboratory per week. Credit will be given for only one course: 1111L, 1203L, or 1251L. (Fall or Spring)

CHEM 1112. Chemistry in Today's Society. (3) Prerequisite: CHEM 1111. Continuation of CHEM 1111. Does not qualify as a prerequisite for any other chemistry course. Three lecture hours and one Problem Session hour per week. Credit will be given for only one course: 1112, 1204 or 1252. (On demand)

CHEM 1112L. Laboratory in Chemistry. (1) Prerequisite: CHEM 1111 and 1111L. Prerequisite or corequisite: CHEM 1112. Continuation of CHEM 1111L. One three-hour laboratory per week. Credit will be given for only one course: 1112L, 1204L, or 1252L. (On demand)

CHEM 1200. Fundamentals of Chemistry. (3) Primarily for students with little or no chemistry background who intend to take CHEM 1251. Introduction to the basic concepts, problem solving skills, and language of chemistry. Develops relationships between chemical formulas and equations, and explores calculations dependent upon these. Students who already have credit for CHEM 1251 with a grade of C or above may not take CHEM 1200 for credit. CHEM 1200 will not fulfill chemistry degree requirements. (Fall, Spring)

CHEM 1203. Introduction to General, Organic, and Biochemistry I. (3) Primarily for nursing majors. Qualifies as a prerequisite only for CHEM 1204. Fundamentals of chemistry and selected topics from inorganic chemistry. Three lecture hours and one Problem Session hour per week. Note: credit will be given for only one course: CHEM 1111, 1203, or 1251. (Fall, Summer)

CHEM 1203L. Introduction to General, Organic, and Biochemistry I Laboratory. (1) Pre- or corequisite: CHEM 1203. Laboratory investigations into the nature of inorganic compounds. One three-hour laboratory per week. Credit will be given for only one course: CHEM 1111L, 1203L, or 1251L. (Fall, Summer)

CHEM 1204. Introduction to General, Organic, and Biochemistry II. (3) Prerequisite: CHEM 1203 with a grade of C or above. Continuation of CHEM 1203, with emphasis on organic chemistry and selected topics in biochemistry. Does not qualify as a prerequisite of any other chemistry course. Three lecture hours and one Problem Session hour per week. Credit will be given for only one course: CHEM 1112, 1204, or 1252. (Spring, Summer)

CHEM 1204L. Introduction to General, Organic, and Biochemistry II Laboratory. (1) Prerequisites: CHEM 1203 and 1203L, each with a grade of C or above. Pre- or corequisite: CHEM 1204. Continuation of CHEM 1203L with emphasis on the reactions and characterization of organic compounds. One three-hour laboratory per week. Credit will be given for only one course: CHEM 1112L, 1204L, or 1252L. (Spring, Summer)

CHEM 1251. Principles of Chemistry I. (3) A principles-oriented course for science majors. Fundamental postulates and laws of chemistry; the relationship of atomic structure to physical and chemical properties of the elements. Three lecture hours and one Problem Session hour per week. Students may attempt CHEM 1251 a total of three times. Withdrawing from the course after the Add/Drop deadline constitutes an attempt as does receiving any letter grade. Credit will be given for only one course: 1111, 1203, or 1251. (Fall, Spring, Summer) (Evenings)

CHEM 1251L. Principles of Chemistry Laboratory I. (1) Prerequisite or corequisite: CHEM 1251. Experimental investigations involving the fundamental postulates and laws of chemistry. One three-hour laboratory per week. Students may attempt CHEM 1251L a total of three times. Withdrawing from the course after the Add/Drop deadline constitutes an attempt as does receiving any letter grade. Credit will be given for only one course: 1111L, 1203L, or 1251L. (Fall, Spring, Summer) (Evenings)

CHEM 1252. Principles of Chemistry II. (3) Prerequisite: CHEM 1251 with a grade of C or above. Continuation of CHEM 1251. Three lecture hours and one Problem Session hour per week. Students may attempt CHEM 1252 a total of three times. Withdrawing from the course after the Add/Drop deadline constitutes an attempt as does receiving any letter grade. Credit will be given for only one course: 1112, 1204, or 1252. (Fall, Spring, Summer) (Evenings)

CHEM 1252L. Principles of Chemistry Laboratory II. (1) Prerequisites: CHEM 1251 and 1251L. Experimental investigations involving the fundamental postulates and laws of chemistry. One three-hour laboratory per week. Students may attempt CHEM 1252L a total of three times. Withdrawing from the course after the Add/Drop deadline constitutes an attempt as does receiving any letter grade. Credit will be given for only one course: 1112L, 1204L, or 1252L. (Fall, Spring, Summer) (Evenings)

CHEM 1253L. Introduction to Modern Laboratory Methods. (1) Prerequisite or corequisite: CHEM 1252. For students planning to take additional chemistry courses; can be substituted for the 1252L requirement for all degrees in Chemistry. Open-ended studies on topics compatible with CHEM 1252
lecture materials. A quasi-research approach is used, involving modern instrumentation extensively. The background needed to utilize microcomputers in data acquisition and data reduction is presented. One three-hour laboratory per week. (On demand)

CHEM 2125. Inorganic Chemistry. (3) Prerequisite: CHEM 1252 with a grade of C or above. Descriptive inorganic chemistry including acid-base and nonaqueous solvent concepts. (Spring)

CHEM 2130. Survey of Organic Chemistry. (3) Prerequisite: CHEM 1251 and 1252, each with a grade of C or above. A survey of organic chemistry, including aldehydes, ketones, amines, amides and carboxylic acids, designed to meet the needs of B.A. in Biology majors. (On demand)

CHEM 2131. Organic Chemistry I. (3) Prerequisite: CHEM 1251 and 1252, each with a grade of C or above. Descriptive principles and techniques of organic chemistry and their applications to reactions of aliphatic and aromatic compounds and natural products. (Students may attempt CHEM 2131 a total of three times. Withdrawing from the course after the Add/Drop deadline constitutes an attempt as does receiving any letter grade.) (Fall, Spring, Summer)

CHEM 2131L. Organic Chemistry Laboratory I. (1) Prerequisites: CHEM 1251, 1251L, 1252 and 1252L, each with a grade of C or above. Prerequisite or corequisite: CHEM 2131 or 2130 with a grade of C or above. Laboratory investigations into the physical and chemical properties of organic compounds. One laboratory period of three hours per week. (Students may attempt CHEM 2131L a total of three times. Withdrawing from the course after the Add/Drop deadline constitutes an attempt as does receiving any letter grade.) (Fall, Spring, Summer)

CHEM 2132. Organic Chemistry II. (3) Prerequisite: CHEM 2131 with a grade of C or above. Continuation of CHEM 2131. Three lecture hours and one Problem Session hour per week. (Students may attempt CHEM 2132 a total of three times. Withdrawing from the course after the Add/Drop deadline constitutes an attempt as does receiving any letter grade.) (Fall, Spring, Summer)

CHEM 2132L. Organic Chemistry Laboratory II. (1) Prerequisite: CHEM 2131L with a grade of C or above. Prerequisite or corequisite: CHEM 2132. Continuation of CHEM 2131L. One laboratory period of three hours per week. (Students may attempt CHEM 2132L a total of three times. Withdrawing from the course after the Add/Drop deadline constitutes an attempt as does receiving any letter grade.) (Fall, Spring, Summer)

CHEM 2136L. Organic Chemistry Laboratory. (1) Prerequisite or corequisite: CHEM 2132. Laboratory investigation involving a research-type project in lieu of CHEM 2132L. Available only upon departmental invitation. (On demand)

CHEM 2141. Survey of Physical Chemistry. (3) Prerequisites: CHEM 1252 and 1252L, each with grades of C or above; MATH 1120 or one semester of calculus (high school or above); and PHYS 1101 or one semester of physics (high school or above). A course designed for students in the life sciences or others desiring a one-semester survey of the physical aspects of chemistry. Application of thermodynamics to chemical reactions, energy transfer processes, and chemical and physical equilibria; the study of reaction rates and mechanisms; structure of gases, liquids, and solids; molecular structure and spectroscopy. (Spring)

CHEM 3090. Special Topics in Chemistry. (1-4) Prerequisite: Permission of department. Topics chosen from analytical, biochemistry, inorganic, organic, and physical chemistry. Repeatable for credit. Lecture and/or laboratory hours will vary with the nature of the course taught. (On demand)

CHEM 3111. Quantitative Analysis. (4) Prerequisites: CHEM 1252 and 1252L, each with grades of C or above. Introductory to quantitative and analytical chemistry. Principles of equilibrium, classical and simple instrumental approaches are considered. Two lecture hours and two laboratory periods of three hours each week. (Fall)

CHEM 3112. Modern Separation Techniques. (4) Prerequisites: CHEM 2131, 2131L and 3111, each with grades of C or above. A theoretical and application course in modern separation techniques with emphasis on liquid and gas chromatography. Two lecture hours and two laboratory periods of three hours each week. (On demand)

CHEM 3113. Survey of Instrumental Methods of Analysis. (4) Prerequisites: CHEM 3111 with a grade of C or above. Methods of instrumental analysis with emphasis on sample handling, instrument parameters, data handling, and trouble-shooting in various areas that include Potentiometry, Spectroscopy, Mass Spectrometry, and Chromatography. Either CHEM 3113 or 3112, but not both, may be used to meet requirements for the B.A. degree. Credit will not be given for both CHEM 3113 and 4111. Two lecture hours and two three-hour laboratory periods per week. (On demand)

CHEM 3141. Physical Chemistry. (3) Prerequisites: CHEM 1252 and 1252L, each with a grade of C or above; MATH 1241 and 1242; PHYS 2102 and 2102L. Prerequisite or corequisite: At least one of the following: MATH 2241, 2242, 2164, 2171, 3128, or a department-approved mathematics course. Quantum chemistry, atomic and molecular structure, spectroscopy. (Fall)

CHEM 3141L. Physical Chemistry Laboratory. (1) Prerequisite or corequisite: CHEM 3141. Experiments in laser spectroscopy, quantum mechanics, kinetics, and thermodynamics. One laboratory period of three hours per week. (Fall)

CHEM 3142. Physical Chemistry. (3) Prerequisites: CHEM 1252, 1252L and 3141, each with a grade of C or above; MATH 1241 and 1242; PHYS 2102 and 2102L; or permission of the instructor. Prerequisite
CHEM 3142L. Physical Chemistry Laboratory. (1) Prerequisite: CHEM 3141L with a grade of C or above. Prerequisite or corequisite: CHEM 3141 or 3142. Continuation of CHEM 3141L. One laboratory period of three hours per week. (Spring)

CHEM 3197. Internship in Community Education and Service. (1-3) Prerequisites: Junior standing, acceptance into the program, and approval of department. A project-oriented, service learning internship with a cooperating community organization. (Credit toward the B.A. and B.S. degrees in Chemistry will not be given.) May be repeated for credit with department permission. Graded on a Pass/No Credit basis. (On demand)

CHEM 3500. Chemistry Cooperative Education and 49ership Experience. (0) Prerequisites: Junior standing, chemistry through 2132 and acceptance into the Experiential Learning Program by the University Career Center. Enrollment in this course is required for chemistry majors during each semester or summer when they are working on a co-op or 49ership/service 49ership assignment. Participating students pay a course registration fee for transcript notation (49ership and co-op) and receive full-time student status (co-op only). Assignments must be arranged and approved in advance. Course may be repeated; evaluation is Satisfactory/Unsatisfactory. Only open to undergraduate students; Graduate level students are encouraged to contact their academic departments to inquire about academic or industrial internship options for credit. For more information, contact the University Career Center. (On demand)

CHEM 3695. Chemistry Seminar. (1) (W) Introduction to typical search methods, including computer searching, for the chemical reference works and chemical literature. Use of these search techniques for background development. Writing short papers on assigned topics in journal format. One three-hour laboratory session per week. (Fall, Spring)

CHEM 4090. Special Topics in Chemistry. (1-4) Prerequisite: Permission of the instructor. Selected topics in chemistry. Lecture and/or laboratory hours will vary with the nature of the course taught. Repeatable for credit. (On demand)

CHEM 4095. Topics for Teachers. (1-4) Prerequisite: Permission of instructor. Selected topics in chemical education. Lecture and/or laboratory hours will vary with the nature of the course taught. Repeatable for credit. (On demand)

CHEM 4111. Instrumental Analysis. (4) Prerequisites: CHEM 3111, 3141, and 3141L, each with a grade of C or above. Selected modern instrumental methods of analysis, including theory and practice, with considerable attention given to the instrument and elementary electronics involved in the techniques. Two lecture hours and six hours of lab per week. (Spring)

CHEM 4121. Advanced Inorganic Chemistry. (4) Prerequisites: CHEM 3142 and 3142L, each with a grade of C or above. Theoretical inorganic chemistry including the application of physicochemical principles to the study of inorganic systems. Laboratory work involves inorganic preparations and characterization techniques. Three lecture hours and one laboratory period of three hours a week. (Fall)

CHEM 4133. Methods of Organic Structure Determination. (2) Prerequisites: CHEM 2132 and 2132L, each with a grade of C or above. Study and application of modern techniques, primarily spectroscopy, to determine the structure of organic molecules. One hour of lecture and one laboratory period of three hours each week. (Spring)

CHEM 4134. Organic Reaction Mechanisms. (2) Prerequisites: CHEM 2132 and 2132L, each with a grade of C or above. Mechanistic and theoretical topics which are beyond the scope of CHEM 2131/2132, including orbital symmetry control of organic reactions, the Hammett Equation and other linear free energy relationships, heterocyclic compounds, polycyclic aromatic compounds, organic photochemistry, carbynes, nitrenes, arynes and other short lived, reactive intermediates. (Spring) (Alternate years)

CHEM 4135. Concepts and Techniques in Organic Synthesis. (2) Prerequisite or corequisite: CHEM 4133. Modern techniques of organic synthesis. Laboratory includes one or more multi-step syntheses of complex molecules. One hour of lecture and one laboratory period of three hours each week. (Spring) (Alternate years)

CHEM 4165. Principles of Biochemistry I. (3) Prerequisite: CHEM 2132 with a grade of C or above. A study of the structures, properties, and functions of biological molecules, bioenergetics of biological reactions, and enzyme catalysis, with particular emphasis on the underlying chemical principles, including thermodynamics and kinetics. (Fall)

CHEM 4165L. Principles of Biochemistry I Laboratory. (1) Prerequisite: CHEM 2132L with a grade of C or above. Prerequisite or corequisite: CHEM 4165. Physical properties of biological molecules and an introduction to experimental techniques of biochemical research. Eleven four-hour lab periods. (Fall)

CHEM 4166. Principles of Biochemistry II. (3) Prerequisite: CHEM 4165 with a grade of C or above. A study of various metabolic pathways and information transfer, including molecular aspects of cell biology and genetics, with particular emphasis on the underlying chemical reactions, including thermodynamics and kinetics. (Spring)

CHEM 4167. Structure and Mechanism in Protein Chemistry. (3) Prerequisites: CHEM 4165, and either CHEM 4166 or BIOL 4171, or permission of the
instructor. Examination of structures, properties, and functions of proteins, enzyme catalysis, and bioenergetics, emphasizing underlying mechanistic chemical and biochemical principles. *(On demand)*

**CHEM 4171. Biochemical Instrumentation.** *(4)* Prerequisites: CHEM 3111, 4165, and 4165L, each with a grade of C or above or the permission of the department. Modern instrumental methods used in biorelated areas such as biochemistry, biotechnology, and medical technology. Theory and practice. Electrochemistry, immunochemistry, spectroscopy, chromatography, sedimentation, and electrophoresis. Two lecture hours and six hours of lab per week. *(Spring) (Alternate years)*

**CHEM 4175. Physical Biochemistry.** *(3)* Prerequisites: CHEM 4165, 4165L, 4166, and 3141 with a grade of C or above. Colloid systems, equilibria in biological fluids, mass and energy transport in fluids and in association with membranes, energy storage and dissipation with relation to specific chemical bonding, enzyme kinetics. *(On demand)*

**CHEM 4185. Chemical Fate of Pollutants.** *(3)* Prerequisites: Senior or Graduate Standing and CHEM 2132. Chemical reactivity and fate of pollutants (in air, water, soil) in terms of their chemical structure and energetics, mechanisms, structure/energy relationships and their interaction with reactive environmental species including light. *(On demand)*

**CHEM 4200. Computational Chemistry.** *(4)* Prerequisite (BA): CHEM 2125 or 2141 or permission of instructor. Prerequisite or corequisite (BS and MS): CHEM 3141 or permission of instructor. Electronic and molecular mechanics-based computational methods, including properties, optimized equilibrium and transition state structures and potential energy surfaces of reactions. Three lecture hours and three hours of laboratory each week. Additional projects required of graduate students. *(Spring)*

**CHEM 4695. Chemistry Seminar.** *(1) (O, W)* Prerequisites: CHEM 3695 and Senior standing. Discussion of recent developments and special topics in chemistry. Written and oral reports are required. *(Fall, Spring)*

**CHEM 4696. Chemistry Seminar.** *(1) (O, W)* Prerequisites: CHEM 3695, CHEM 4695, and Senior standing. Discussion of recent developments and special topics in chemistry. Written and oral reports are required. *(Fall, Spring)*

**CHEM 4900. Directed Undergraduate Research.** *(1-4)* Prerequisite: Permission of the instructor overseeing the research. Independent study and research in any of these fields of chemistry: organic, physical, analytical, inorganic chemistry or biochemistry. Hours for laboratory and library work to be determined. Repeatable for credit. *(Fall, Spring, Summer)*

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**CHILD AND FAMILY DEVELOPMENT (CHFD)**

**CHFD 2111. Child Study: Interpreting Children's Behavior.** *(3)* Focuses on the behavior of children within the context of the family, culture, community, and society. The complex interactions among heredity, identity, and the environment are presented through the study of current theories of child development. A field-based clinical assignment of approximately 20 hours is required for the purpose of completing a case study and child's developmental portfolio with emphasis on the child within the context of the family. *(Fall, Summer)*

**CHFD 2113. Development: Prenatal to 36 Months.** *(3)* Focuses on development beginning at conception through 36 months of age. The potential influences of biological, genetic, environmental, and cultural factors on development are explored. Examined within the course are theories and research related to developmental processes. Relationship-based approaches (e.g., Touchpoints) will be embedded throughout course content. A field-based clinical assignment of approximately 8 hours is required. *(Fall, Summer)*

**CHFD 2412. The Practice of Observation, Documentation, and Analysis of Young Children's Behavior.** *(3)* Prerequisite: Completion of or concurrent enrollment in CHFD 2111. Provides students with knowledge and experience in effective methods of observation, documentation, and assessment as related to developmental theory for young children, Birth – 8, who are culturally, linguistically, and ability-diverse. A field-based clinical assignment of approximately 30 clinical is required. *(Fall)*

**CHFD 3112. Supporting Diverse Young Learners – Birth through Eight.** *(3)* Prerequisite: CHFD major or minor with GPA of at least 2.5 overall and 2.75 in the major. Focuses on various developmental and individual needs of children as related to group settings, curriculum decisions, and the design of early learning environments. Emphasis is on current issues, the role of the caregiver (family and/or teacher), the process of guiding and teaching, and the facilitation of development and learning of young children who are culturally, linguistically, and ability diverse. *(Fall)*

**CHFD 3113. Families as the Core of Partnerships.** *(3)* Prerequisite: CHFD major or minor with GPA of at least 2.5 overall and 2.75 in the major. Pre-or corequisites: CHFD 3115 and CHFD 3412. Examines diverse family systems and dynamics as related to the developmental process of parenting in adolescence and adulthood. Emphasis on the role of formal and informal support systems, and effective family-professional collaborative partnerships that are family driven. *(Spring)*

**CHFD 3114. Responsive Approaches for Infants and Toddlers.** *(3)* Prerequisites: Admittance to Teacher Education in Child and Family Development, GPA of at least 2.5 overall and 2.75 in the major, CHFD
CHFD 3115. An Ecological Approach to Learning and Development - Early Childhood to Pre-Adolescence. (3) (W) Prerequisite: CHFD major or minor with GPA of at least 2.5 overall and 2.75 in the major. Examines learning and development in the context of the child’s physical and social environments, including home, neighborhoods, schools, communities, national policies and global influences. Specific attention to the approaches to learning, emotional/social, health/physical, cognitive, and language/communication domains and theories as seen in a multicultural context. (Fall, Summer)

CHFD 3116. Approaches to Integrated Curriculum for Young Children (3–8). (3) Prerequisites: Admission to Teacher Education in Child and Family Development, GPA of at least 2.5 overall and 2.75 in the major, CHFD 3112, CHFD 3115. Examines approaches to learning within the context of emotional/social, health and physical, language and communication, and cognitive domains with an emphasis on practice in applied settings. This course provides opportunities to select, modify, present, and extend curriculum for young children who are culturally, linguistically, and ability diverse in a developmental framework. (Fall)

CHFD 3118. Family Support. (3) Prerequisites: Admission to Teacher Education, GPA of at least 2.5 overall and 2.75 in the major, CHFD 3113, and CHFD 3412. Corequisite: CHFD 3416. Applies in-depth research, theory, and practices to create and implement research based supports that build upon family strengths in a variety of home and community settings. (Fall)

CHFD 3412. Internship 1: The Family and the Community (Birth to 3 Years). (3-6) Prerequisites: Admission to Teacher Education, GPA of at least 2.5 overall and 2.75 in the major. Pre- or corequisite: CHFD 3113. Explores the influence of family and community on the development of infants and toddlers through field-based experiences. This course provides opportunities to examine relationships that support and facilitate learning. (Spring)

CHFD 3416. Internship 2: Child and Family Development. (3) Prerequisites: Admission to Teacher Education in Child and Family Development, GPA of at least 2.5 overall and 2.75 in the major, CHFD 3113, and CHFD 3412. Corequisite: CHFD 3118. Provides intensive work with children and families in home and community settings planned by student and advisor with focus on integration of theory and practice. (Fall)

CHFD 3800. Individual Study in Child and Family Development. (1-6) Prerequisite: Permission of the student’s advisor. Independent study under the supervision of an appropriate faculty member. May be repeated for credit. (Fall, Spring, Summer)

CHFD 4000. Topics in Child and Family Development. (1-6) May include classroom and/or clinical experiences in the content area. With department approval, may be repeated for credit for different topics. (Fall, Spring, Summer)

CHFD 4410. Student Teaching/Seminar: B-K Child and Family Development. (15) Prerequisite: Approval of an Application for Student Teaching. Planned sequence of experiences in the student’s area of specialization conducted in an approved setting under the supervision and coordination of a University supervisor and a cooperating teacher. Student must demonstrate the competencies identified for the B-K teaching field. Approximately 35-40 hours per week in an assigned school setting and 10-12 on-campus seminars scheduled throughout the semester. (Fall, Spring)

CHNS 1201. Elementary Chinese I. (4) Fundamentals of the Chinese language, including speaking, listening comprehension, reading, and writing. (Fall)

CHNS 1202. Elementary Chinese II. (4) Prerequisite: CHNS 1201 or permission of the department. Fundamentals of the Chinese language, including speaking, listening comprehension, reading, and writing. (Spring)

CHNS 2201. Intermediate Chinese I. (4) Prerequisite: CHNS 1202 or permission of the department. Review of grammar, with conversation and composition. (Fall)

CHNS 2202. Intermediate Chinese II. (4) Prerequisite: CHNS 2201 or permission of the department. Review of grammar, conversation, and composition. (Spring)

CHNS 3050. Topics in Chinese. (1-3) (W) Course may be repeated with change of topic. (On demand)

CHNS 3201. Chinese Grammar and Conversation. (3) Prerequisite: CHNS 2202 or permission of the department. Review of Chinese grammar and guided conversation on prepared topics. Emphasis on spoken Chinese. (Fall)

CHNS 3202. Chinese Grammar and Conversation. (3) Prerequisite: CHNS 3201 or permission of the department. Review of Chinese grammar and guided compositions on prepared topics. Emphasis on vocabulary, idiomatic expressions, and stylistics. (Spring)
CRIMINAL JUSTICE AND CRIMINOLOGY (CJUS)

CJUS 1100. Introduction to Criminal Justice. (3) REQUIRED COURSE FOR MAJORS AND MINORS. Components of the criminal justice system are reviewed and their interrelatedness assessed; law enforcement, corrections and courts discussed; studies of the functions of the system reviewed. (Fall, Spring)

CJUS 2000. Introduction to Law Enforcement. (3) Critical examination of policing in terms of the past and present structures, methods, ethics, legal framework, and operations typical of contemporary American law enforcement agencies. (Fall, Spring)

CJUS 2102. Ethics and the Criminal Justice System. (3) The study of applied and professional ethics and ethical issues in the administration of justice. (Fall, Spring)

CJUS 2120. Juvenile Justice. (3) Intensive analysis of the administration of juvenile justice within the United States. Particular emphasis on decision-making and procedures of police, courts, and correctional agencies for juveniles. (Fall, Spring)

CJUS 2154. Introduction to Corrections. (3) An overview of community and institutional corrections in the U.S. such as jails, probation, alternatives to incarceration, correctional institutions, treatment strategies, and parole. (Fall, Spring)

CJUS 3000. Topics in Criminal Justice. (3) Prerequisite: CJUS 1100. Specialized criminal justice topics. May be repeated for credit. (On demand)

CJUS 3031. Criminal Justice Learning Community I. (3) (W) Prerequisite: CJUS 1100. First course in the year-long sequence Learning Community for Criminal Justice. Designed to introduce transfer students to criminal justice and expose them to the discipline with an emphasis in writing, including exploration of academic and social culture at the University and within the discipline. (Fall)

CJUS 3032. Criminal Justice Learning Community II. (3) (O) Prerequisite: CJUS 1100 and CJUS 3031. Second course in the year-long sequence Learning Community for Criminal Justice Transfer Students, focuses on career and job seeking skills, including preparation for work experience and community involvement. (Spring)

CJUS 3100. Criminal Justice Theory. (3) Prerequisites: CJUS 1100, Criminal Justice major or minor, and Junior standing. Required course for majors and minors. An overview of the dominant theoretical explanations for crime and deviance. Special attention is given to the empirical research on these theories and their corresponding policy/program recommendations for reducing crime and delinquency in society. (Fall, Spring)

CJUS 3101. Research Methods in Criminal Justice. (4) (W) Prerequisite: CJUS 1100, STAT 1222, Criminal Justice major, and Junior standing. Required course for majors. Research designs, data collection, and data analysis relevant to criminal justice. (Fall, Spring)

CJUS 3102. American Criminal Courts. (3) Prerequisite: CJUS 1100. Analysis of the court area of criminal justice with emphasis on social science literature concerning prosecutors, defense attorneys, judges, juries, and court reform policies. (Fall, Spring)

CJUS 3110. Criminal Justice and the Law. (3) Nature and development of criminal law including the concepts of criminal liability, responsibility, and capacity; comprehensive analysis of the various crimes against persons, property, and morality. (Fall)

CJUS 3111. Criminal Procedure. (3) Examines the rules that govern everyday operation of the criminal justice system from investigation to appeal. (Fall, Spring)

CJUS 3112. Famous Criminal Trials of the Twentieth Century. (3) Prerequisites: CJUS 1100 and at least Junior standing or with permission of instructor. The study of American criminal trials from 1900 to the present, with a review of specific cases to determine their effect upon, and reflection of, American society and culture. (On demand)

CJUS 3114. Mediation and Conflict Resolution. (3) (O) Prerequisite: CJUS 1100 or permission of the instructor. Introduction to conflict and dispute resolution, with a specific emphasis on mediation. Course format includes lecture, case studies, and practice mediation role plays with instructor and peer feedback. (Fall)

CJUS 3120. The Juvenile Offender. (3) Measurement of juvenile delinquency, explanations of delinquent behavior, and policies intended to both prevent and respond to delinquent behavior. (On demand)

CJUS 3121. Juvenile Law. (3) Statutory and case law relating to juveniles with special emphasis on the North Carolina Juvenile Code. (On demand)

CJUS 3130. The Administration of Criminal Justice. (3) (O, W) Examines major organizational theories and administrative functions with direct application to criminal justice agencies. (Yearly)

CJUS 3132. Interviewing in Criminal Justice. (3) (O) Examines the interpersonal dynamics, theories, empirical research, and legal basis of the investigative interview necessary for the criminal justice professional. Special emphasis will be given to the establishment of rapport, the process of inquiry, the evaluation of response, cultural and age differences, and the need to remain within the legal bounds of the U.S. Constitution. (Yearly)

CJUS 3141. Law Enforcement Behavioral Systems. (3) Examines the issues surrounding the individual
officer. Such issues include: selection, discretion, ethics, stress, the use of force, and the effects of culture. *(Yearly)*

**CJUS 3150. Community Corrections.** *(3)* Structure, functions, and effectiveness of community corrections. Emphasis on the deinstitutionalization movement, community-based treatment centers, community service agencies, work release programs, and current trends in community corrections. *(Yearly)*

**CJUS 3151. Institutional Corrections.** *(3)* Structure, functions, and effectiveness of correctional institutions. Emphasis is on the history of corrections, classification of offenders, institutionalization, treatment programs, juvenile training schools, and the future of corrections. *(Yearly)*

**CJUS 3152. Correctional Law.** *(3)* Development, substance, and operationalization of the law of corrections. *(On demand)*

**CJUS 3153. Juvenile Corrections.** *(3)* Examination of community-based and institutional correctional programs for juveniles and analysis of the effectiveness of these programs. *(On demand)*

**CJUS 3160. Domestic Violence.** *(3)* Prerequisite: CJUS 1100. Examination of the interpersonal dynamics of abusive relationships and how the cycle of violence perpetuates the home resulting in the physical, psychological and sexual abuse of women and children and how men can become part of the solution to this social cancer. *(On demand)*

**CJUS 3200. Security and Loss Prevention.** *(3)* Overview of the field of private security and loss prevention with emphasis on current legislation, loss prevention, risk management, and security countermeasures. *(On demand)*

**CJUS 3210. Problems and Decisions in Criminal Justice.** *(3)* (W) Prerequisites: Junior standing and permission of the department. Evaluation of criminal justice policy and decision-making. *(Yearly)*

**CJUS 3220. The Criminal Offender.** *(3)* Examines the research, theory, and practice of criminal behavior focusing primarily on interaction of the offender with social-environmental factors. *(On demand)*

**CJUS 3310. Punishment and Freedom.** *(3)* Cross-listed as HONR 3700-H01. Prerequisite: CJUS 1100 with a grade of C or above. Examines the manner in which the notions of freedom and punishment are fundamentally bound to one another, and how, at their intersections, these constructs are the source of considerable speculation regarding consumerism, democracy, capitalism, and ethics. *(On demand)*

**CJUS 3400. Criminal Justice Practicum.** *(1-6)* Prerequisite: CJUS 1100 and permission of the department and criminal justice agency. Supervised experience in a criminal justice agency. May be repeated for credit up to a maximum of 12 hours but with no more than six hours counting toward the major. *(Fall, Spring, Summer)*

**CJUS 3800. Directed Individual Study.** *(1-4)* Prerequisite: Junior standing and permission of the department. May be repeated for credit. Graded on a Pass/No Credit basis. *(Fall, Spring, Summer)*

**CJUS 4000. Topics in Criminal Justice.** *(1-6)* Prerequisite: Junior standing. Specialized topics in criminal justice. May be repeated for credit. *(On demand)*

**CJUS 4101. Drugs, Crime, and the Criminal Justice System.** *(3)* Use of drugs and their relationship to crime, including the impact of drugs on the individual and the criminal justice system. *(On demand)*

**CJUS 4103. International Criminal Justice.** *(3)* Prerequisite: Junior standing. Examination of the patterns and trends in international crime such as terrorism, transnational organized crime, and trafficking in people, and a review of how the legal traditions of common law, civil law, Islamic law and socialist legal systems are structured and function. *(On demand)*

**CJUS 4140. Community Oriented Policing and Problem Solving.** *(3)* Prerequisites: CJUS 1100, CJUS 2000, and Junior standing. Designed to help students learn, in a practical hands on way, about community policing concepts, problems solving tools and resources, and crime prevention strategies that are currently used by law enforcement and community leaders. *(On demand)*

**CJUS 4160. Victims and the Criminal Justice System.** *(3)* (0) Relationship between victims of crime and the criminal justice system. Specific topics include: an analysis of the characteristics of crime victims, victim reporting and non-reporting patterns, treatment of victims by the various segments of the criminal justice system, victim assistance programs, and the issue of compensation and/or restitution for victims of crime. *(On demand)*

**CJUS 4161. Violence and the Violent Offender.** *(3)* Issues surrounding violence in today's society and their impact on offenders involved in homicide, child and domestic abuse, and other forms of violence. Examination of myths about violence, victim-offender characteristics and relationships, and theories of violence. *(On demand)*

**CJUS 4162. Seminar on Sexual Assault.** *(3)* (0) A comprehensive and systematic critical examination of sexual exploitation in the United States. Topics may include historical and legal perspectives, theories of causation, and practical policy implications in the areas of rape, child sexual abuse, and incest, among others. *(On demand)*

**CJUS 4400. Research Practicum.** *(3)* Prerequisites: CJUS 3100 and CJUS 3101. Development, analysis, and presentation of independent research under the supervision of a faculty member. Graduate students
are encouraged to register for CJUS 6800. (On demand)

CONSTRUCTION MANAGEMENT (CMET)

CMET 1680. Professional Development I: Construction Safety. (1) Prerequisite: Open to freshman level Civil Engineering Technology and Construction Management majors. Professional seminar laboratory study of OSHA regulations pertaining to construction safety. Course includes presentations by industry professionals. Three hours per week. (Spring)

CMET 2680. Professional Development II: Plan Reading and Quantity Takeoff. (1) Prerequisite: ETCE 1104. Professional seminar laboratory study of construction plans and the methods and tools used to estimate quantities of work. Course includes presentations by industry professionals. Three hours per week. (Spring)

CMET 3123. Cost Estimating. (3) Prerequisites: CMET 2680 and CMET 3224. Methods used to prepare construction cost estimates, engineer production and cost, and determine labor and equipment resources. (Spring)

CMET 3224. Construction Project Administration. (3) Prerequisite: CMET 2680 or AAS degree. A study of the project management processes used in the design and construction of civil engineering projects. Topics include the roles and responsibilities of project participants, project delivery methods, engineering and construction contracts, project control and documentation, and dispute resolution mechanisms. (Fall)

CMET 3680. Professional Development III: Temporary Structures. (1) Prerequisite: ETCE 3131 and ETCE 3163. Professional seminar laboratory study of the design and construction of temporary structures. Course includes presentations by industry professionals. Three hours per week. (Spring)

CMET 4073. Special Topics – Construction Management. (1-4) Prerequisite: Senior standing and permission of instructor. A study of new and emerging technical topics pertinent to the field of construction management. May be repeated for credit. (On demand)

CMET 4125. Construction Codes, Documents, and Permits. (2) Prerequisites: CMET 1680 and CMET 3224. An analysis of technical specifications, construction regulations and permits, procurement documents, and safety programs and plans. (Fall)

CMET 4126. Project Scheduling and Control. (3) Prerequisites: CMET 3123 and CMET 3224. Methods for planning, scheduling, and controlling construction projects, emphasizing manual and computer based techniques for critical path method scheduling, resource management, construction cost control, and reporting practices. (Fall)

CMET 4127. Construction Law and Regulatory Issues. (3) Examination of the legal problems encountered by architects, engineers, contractors, owners, sureties, and lenders involved in the construction process. Special emphasis on the legal rights and liabilities of the various participants in construction projects. Claims preparation, negotiation, arbitration, and litigation methods of dispute resolution. (On demand)

CMET 4129L. Construction Planning Laboratory. (1) (W) Prerequisite or corequisite: CMET 4126. Methods for planning construction operations and projects for directed projects with an emphasis on developing schedules and cost estimates to reflect the plan. Three laboratory hours per week. (Fall)

CMET 4228. Construction Office Operations. (2) Prerequisite: CMET 3224. A study of management issues encountered in home and job-site office operations. Topics include insurance and bonds, risk management, cost accounting, and quality management. (Spring)

CMET 4272. Capstone Project. (2) (O,W) Prerequisite: Senior standing in Construction Management and permission of the department. Utilization of students’ previous coursework to creatively investigate and produce solutions for a comprehensive construction management project. (Spring)

CMET 4680. Professional Development IV. (1) Prerequisite: Open to senior level Civil Engineering Technology and Construction Management majors. Seminar discussing professional development issues relating to the civil engineering technology and construction management professions. Course includes presentations by industry professionals. (Spring)

COMMUNICATION STUDIES (COMM)

COMM 1101. Public Speaking. (3) (O) Prerequisite: Pre-Communication Studies major/minor, English major, Pre-Elementary Education major, Elementary Education major, Pre-Kinesiology major, Athletic Training major, Exercise Science major, or Pre-Public Health major. For students who want to upgrade their oral communication skills. Opportunity to study theory and practice of public speaking. Special emphasis placed on constructing and delivering speeches. (Fall, Spring, Summer) (Evenings)

COMM 1107. Introduction to Communication Contexts. (3) A survey of the nature and practice of communication in interpersonal, small group, intercultural, organizational, public relations, and mass communication contexts. (On demand)

COMM 2050. Topics in Oral Communication. (3) (O) Timely and important areas relevant to the study and practice of oral communication. May be repeated for credit with permission of advisor. (On demand)
COMM 2100. Introduction to Communication Theory. (3) Prerequisite: Pre-Communication Studies major/minor, Pre-Public Health major, Public Health major, or Software and Information Systems major. Introduces students to traditional and contemporary theories about human communication processes including the nature of theory building, and major theoretical developments within the field of communication. May not be taken more than twice. (Fall, Spring)

COMM 2101. Introduction to Rhetorical Theory. (3) Prerequisite: Communication Studies major or minor. Evolution of rhetorical theory from ancient to modern times and examination of major rhetorical theorists. Emphasis on using rhetorical theory to better understand contemporary persuasive messages. (Fall, Spring)

COMM 2102. Advanced Public Speaking. (3) Prerequisite: Communication Studies major or minor; COMM 1101 or permission of the instructor. Advanced theory and practice of speaking in public. Research, composition, and delivery of various types of speeches and presentations. (Fall, Spring)

COMM 2103. Argumentation and Debate. (3) Prerequisite: Communication Studies major or minor. Introduction to the basic theory and skills of argumentation and debate. Assumptions of argumentation, evidence, reasoning, argument construction, cross-examination, refutation, and ethics included. (Fall)

COMM 2105. Small Group Communication. (3) Prerequisite: Pre-Communication Studies major/minor, Computer Science major, Software and Information Systems major, Pre-Public Health major, or Public Health major. Principles of discussion and deliberation in small groups. Practice in organizing, leading, and participating in various forms of group communication. Emphasis on problem solving and group management. (Fall, Spring, Summer)

COMM 2107. Interpersonal Communication. (3) Prerequisite: Pre-Communication Studies major/minor, Pre-Elementary Education major, Elementary Education major, Pre-Public Health major, or Public Health major. Study of the dynamics of one-to-one human communication. The relation of language to human communication, perception and reality, self-concept, nonverbal communication codes, development of trust and self-disclosure, and development of positive communication style. (Fall, Spring)

COMM 2110. Women and the Media. (3) Cross-listed as WGST 2110. Examination of messages about women as conveyed in contemporary media (magazines, newspapers, videos, the Internet, video games, television, and movies.) The role of gender in the power structures of the media producers is also analyzed. (Fall)

COMM 2120. Black Images in the Media. (3) Cross-listed as AFRS 2105. Examination of African-American images projected through electronic and print media, historically and currently. (Yearly)

COMM 2145: Principles of Public Relations. (3) Prerequisite: Communication Studies major or minor. Pre- or corequisite: JOUR 2100. Familiarizes students with basic concepts and principles of public relations within the context of communication theory. Acquaints students with the history, functions, roles, social contexts, tools, techniques, and strategies of the profession. (Fall, Spring)

COMM 3050. Topics in Communication Studies. (3) Prerequisite: COMM 1101. Timely and important areas relevant to communication studies. May be repeated for credit with permission of the major advisor. (On demand)

COMM 3051. Topics in Health Communication. (3) Prerequisite: COMM 3115. Timely and important areas relevant to the study of health communication. May be repeated for credit with permission of the major advisor. (On demand)

COMM 3052. Topics in Mass Media. (3) Timely and important areas relevant to the study of the mass media. May be repeated for credit with permission of the major advisor. (On demand)

COMM 3054. Topics in Organizational Communication. (3) Prerequisite: COMM 3141. Timely and important areas relevant to the study of organizational communication. May be repeated for credit with permission of the major advisor. (On demand)

COMM 3055. Topics in Public Relations. (3) Prerequisite: COMM 2145. Timely and important areas relevant to the study of public relations. May be repeated for credit with permission of the major advisor. (On demand)

COMM 3100. Communication Research Methods. (3) (W) Prerequisites: Communication Studies major or minor; COMM 2100; and STAT 1220 or STAT 1222. Methods for systematic investigation of communication behavior in all primary communication contexts, including utilization of library materials and quantitative and qualitative techniques for data analysis. (Fall, Spring)

COMM 3101. Persuasion. (3) Prerequisite: Communication Studies major or minor, and COMM 2101. Emphasis on the theory and practice of persuasion. Topics include attitude modification, theories of persuasion, source credibility, persuasive strategies, ethics, and audience analysis. (Fall, Spring)

COMM 3110. Gender and Communication. (3) Cross-listed as WGST 3110. Examination of the relationship between language and gender. Topics covered include how language shapes perceptions of men/women; gender differences in verbal and nonverbal communication; and gendered communication in relationships, friendships, and the workplace. (Spring)
COMM 3115. Health Communication. (3)
Prerequisites: COMM 2100 or HLTH 2101; Communication Studies major/minor, Pre-Public Health major, Public Health major, or Interdisciplinary Health Studies minor. This course is designed to provide a broad introduction to human communication in a health-care context. Emphasis will be on issues of social support, patient-health professional/caregiver interaction, organizational culture, planning health promotion campaigns, and cultural conceptions of health and illness. (Spring)

COMM 3120. Communication and Mass Media. (3)
Prerequisites: COMM 2100 and Communication Studies major or minor. A survey of the function and history of print and electronic media as forms of communication, their influence upon society, and the legal and economic environments in which they operate. (Fall, Spring)

COMM 3121. Mass Communication and Society. (3)
Examines important issues involving mass communication. Critical study of the effect mass communication exacts on society. (On demand)

COMM 3125. New Media for Communications. (3)
Examines the theoretical perspectives and practical skills necessary to create and design content using digital tools. Course covers components of digital media including designing, writing and communication through the web, creating and editing online podcasts and original creation of online digital video. (Fall, Spring)

COMM 3126. Globalization and Digital Media. (3)
Cross-listed as INTL 3115. An analysis of the role and impact of digital media on globalization. The course considers how the internet and social networks have changed our connection from a physical global society to a virtual culture and explores the ways in which digital communication has fostered the globalization of artistic styles, cultural forms, political relationships and economic transactions. (Yearly)

COMM 3127. Global Media. (3)
Cross-listed as INTL 3127. The course examines the theories and practices of globalization as related to mediated communication and the operation of global media, its consumption and impact. Specific issues studied include global media conglomeration, global media law, media systems, and international development. (Annually)

COMM 3130. Communication and Public Advocacy. (3)
Prerequisites: COMM 2100 and Communication Studies major/minor, Pre-Public Health major, or Public Health major. Examination of how symbols are used in public advocacy from both applied and theoretical perspectives with emphasis on rhetorical uses of language and non-verbal symbols in the creation and transmission of public messages. (Fall, Spring)

COMM 3131. African-American Oratory. (3)
Oratory by African-Americans using in-depth study of speech texts and video and general rhetorical principles to examine historic as well as lesser known speeches. (On demand)

COMM 3135. Leadership, Communication, and Group Dynamics. (3)
Study of leadership theories, behaviors, and group processes. Emphasis on group dynamics in organizations and the role of the leader. Assessment of leadership style. (Fall)

COMM 3136. Leadership, Service, and Ethics. (3)
The focus of this course is on leadership issues facing our society, the role of values and ethics in leadership, and servant leadership. (Fall, Spring)

COMM 3141. Organizational Communication. (3)
Prerequisites: COMM 2100 and Communication Studies major/minor, Pre-Public Health major, Public Health major, or Software and Information Systems major. Examines the importance of the operation of communication processes within organizations and between organizations and their environments. (Fall, Spring)

COMM 3142. Applications in Organizational Communication. (3)
Prerequisite: Communication Studies major, and COMM 3141 or permission of the instructor. This course applies the principles, theory and concepts of organizational communication to organizational settings. This course further explores how organizational theories are realized in everyday organizational life through case studies, interviews, various research methodologies, assessments, and evaluations. (Fall, Spring)

COMM 3150. Gender, Culture, and Communication. (3)
Cross-listed as ANTH 3160. Addresses cultural experiences of gender through communication; material covered includes cultural constructions of femininity and masculinity, cultural socialization toward gender and sexuality, gendered communication in private and public settings, popular representations of gender and sexuality in U.S. media, and language diversity based upon ethnicity, class, gender, and sexual orientation. (On demand)

COMM 3160. Business Communications. (3) (O, W)
Prerequisites: INFO 2130 and Junior standing. The nature and problems of individual, interpersonal and organizational communication in business. Various verbal techniques such as business presentations and writing will be developed and practiced for effective organizational and individual performance. (Fall, Spring, Summer) (Evenings)

COMM 3245. Public Relations Writing. (3)
Prerequisites: Communication Studies major, JOUR 2100, JOUR 2160, and COMM 2145. Instruction and writing practice designed to develop the professional-level writing skills expected of entry-level public relations practitioners. Extensive writing exercises in preparing plans, releases, newsletters, brochures, web pages, media kits and other public relations products. Individual and group projects required. (Fall, Spring)
COMM 3246. PR Strategy. (3) Prerequisites: Communication Studies major and COMM 2145. This course focuses on the planning, problem-solving, and management skills required in the contemporary practice of public relations. Students will analyze a variety of public relations models and will learn to develop problem statements, goals, objectives and tactics, identify and research target publics, and evaluate strategic program results. (Fall, Spring)

COMM 3403. Debate Practicum. (2) Prerequisites: COMM 2103 or equivalent and permission of instructor. Application of debate principles and practices as a member of UNC Charlotte Debate Team. Research, argument construction and tournament competition required. Can be repeated four times. No more than four hours of COMM 3403 may be used toward requirements for the minor. (Fall, Spring)

COMM 3880. Independent Study. (1-3) Prerequisites: COMM 1101, permission of instructor and major advisor. Area of study beyond the scope of current offerings to be devised by student and faculty advisor. Area of study beyond the scope of current offerings to be devised by student and faculty advisor. May be repeated four times. Three hours of COMM 3880 may be used toward requirements for the minor. (Fall, Spring; Summer)

COMM 4050. Topics in Communication Studies. (3) Timely and important areas relevant to communication studies. May be repeated for credit with permission of the major advisor. (On demand)

COMM 4101. Media and the Law. (3) Prerequisites: Communication Studies major, Junior or Senior standing or permission of instructor. Survey of legal rights, restrictions, and ethical considerations in field of communication including the First Amendment, libel, invasion of privacy, obscenity law, regulation of electronic media, relationships between media and judiciary. (Fall, Spring)

COMM 4102. Federal Interpretation of the First Amendment. (3) Prerequisite: Junior or Senior standing or permission of instructor. In-depth case analysis of tests determining Constitutional boundaries of expression, including clear and present danger, prior restraints, fighting words/symbolic speech, strict scrutiny, obscenity, indecency. (On demand)

COMM 4115. Seminar in Health Communication. (3) Prerequisites: COMM 3115, Senior standing, and Communication Studies major. Course provides in-depth examination of a major area of health communication utilizing extensive readings, discussion and written work. (Fall, Spring)

COMM 4141. Advanced Organizational Communication. (3) Prerequisites: Communication Studies major and COMM 3142. Critical examination of the communication practices of organizations which accomplish such tasks as establishing organizational identification, influencing organizational members, and making decisions. Includes application of research methods to assess and analyze an organization's communication practices. (Fall, Spring)

COMM 4145. Communication Campaigns. (3) Prerequisites: Communication Studies major, COMM 3245, and COMM 3246. Lectures, workshops, and guest speakers provide knowledge to enable students to research, design, implement, and complete public relations projects for community-based, not-for-profit organizations. The course is structured and run in a manner similar to a professional public relations agency with students assuming appropriate agency roles. May be repeated once. (Fall, Spring)

COMM 4147. International Public Relations. (3) Prerequisites: Communication Studies major and COMM 2145. Course examines the complexities of public relations practice in an international setting. Includes overview of the factors that complicate communication across cultures and borders and an examination of the effect those factors have on public relations practice in specific global regions. (Yearly)

COMM 4410. Professional Internship. (3 or 6) Prerequisites: Junior or Senior standing; Communication Studies major/minor or Journalism minor, and 2.0 GPA in all coursework in the major or minor. Students work 8-10 hours per week (total 120 hours per semester) for 3 credit hours, or 16-20 hours (total 240 hours per semester) for 6 credit hours in an approved placement. With permission of the student’s advisor and the Communication Studies Internship Coordinator, the course may be repeated for credit in a different internship placement. Graded on a Pass/No Credit basis. (Fall, Spring; Summer)

DANCE (DANC)

DANC 1109. Pilates. (2) Introduction and practice of the Pilates Method of body conditioning and training. May be repeated for credit. Three contact hours. (Fall, Spring)

DANC 1209. Ballet for Majors IA. (2) Prerequisite: Dance major or minor or permission of instructor. Beginning Ballet Technique. A grade of C or above is required to move to DANC 1210. May be repeated for credit. Three contact hours. (Fall)

DANC 1210. Ballet for Majors IB. (2) Prerequisite: Completion of DANC 1209 or permission of instructor. Beginning Ballet Technique. Continuation of DANC 1209. May be repeated for credit. A grade of C or above is required to move to DANC 2209. Three contact hours. (Spring)

DANC 1212. Ballet I. (2) Fundamentals of ballet technique, barre and floor work. May be repeated for credit. Three contact hours. (Fall, Spring)

DANC 1213. Ballet II. (2) Prerequisite: DANC 1212 or permission of instructor. Continuation of DANC 1212. May be repeated for credit. Three contact hours. (Fall, Spring)
DANC 1214. Modern Dance I. (2) Combination of improvisation, elementary modern styles. May be repeated for credit. Three contact hours. (Fall, Spring)

DANC 1215. Modern Dance II. (2) Prerequisite: DANC 1214 or permission of instructor. Continuation of DANC 1214. May be repeated for credit. Three contact hours. (Fall, Spring)

DANC 1217. Modern Dance for Majors IA. (2) Prerequisite: Dance major or minor or permission of instructor. Beginning Modern Dance Technique. May be repeated for credit. A grade of C or above is required to move to DANC 1218. Three contact hours. (Fall)

DANC 1218. Modern Dance for Majors IB. (2) Prerequisite: DANC 1217 or permission of instructor. May be repeated for credit. Beginning Modern Dance Technique. A grade of C or above is required to move to DANC 2217. Three contact hours. (Spring)

DANC 1280. Improvisation. (2) Pre- or corequisites: DANC 1210, DANC 1217. Exploring body movement in time and space using different energies and relationships in order to understand how movement becomes a language of expression for composing original dances. Three contact hours. (Spring)

DANC 2016. Choreographic Analysis. (3) (O) Prerequisite: Dance major or minor, or permission of the instructor. Study of the form and content of choreographic dance works through observation, description, technical analysis, interpretation and evaluation. Crafting tools and aesthetic communication will examined through daily guided discussion, formal debate, oral project presentation and writing.

DANC 2119. Anatomy for Dancers. (3) Study and application of basic anatomy and kinesiology principles to dance. Three contact hours. (Fall)

DANC 2124. Irish Traditional Dance. (2) An introduction to Traditional Irish Dance and music. May be repeated for credit. Three contact hours. (Spring, On demand)

DANC 2125. West African Dance. (2) An introduction to the theory and practice of selected West African traditional dance styles in terms of cultural context, function and form. May be repeated for credit. Three contact hours. (Fall)

DANC 2126. Tap Dance. (2) An introduction to tap dance. May be repeated for credit. Three contact hours. (Spring, On demand)

DANC 2127. Introduction to Traditional Latin Dance. (2) An introduction to traditional Latin dances such as Salsa, Bachata, Merengue and Cumbia. May be repeated for credit. Three contact hours. (Spring, On demand)

DANC 2209. Ballet for Majors IIA. (2) Prerequisite: DANC 1210 or permission of instructor.
DANC 2401. Production Practicum - Dance Running Crew. (1) Practical application of production work in the areas of scenery, lighting, sound, costuming, properties, and stage management. May be repeated for credit. (Fall, Spring)

DANC 2402. Performance Practicum. (1) Prerequisite: Audition. Corequisite: Any dance technique course. Technique course must be taken concurrently. Practical application of performance techniques within a production setting, including auditions, rehearsals and performances. May be repeated for credit. (Fall, Spring)

DANC 2403. Dancing for Choreographers. (2) Corequisite: any level of technique course (DANC 1209, 1210, 1217, 1218, 2209, 2210, 2217, 2218, 3210, 3218). Experience in rehearsal and performance in conjunction with student choreographers from Choreography II: DANC 3230. May be repeated for credit. Four contact hours plus a minimum of 2-3 hours lab time. (Fall)

DANC 3100. Pointe. (2) Corequisite: a Ballet technique course and/or permission of instructor. Beginning Pointe technique. May be repeated for credit. Three contact hours. (Fall, Spring)

DANC 3201-3202. Professional Training Certificate in Dance. (8) Prerequisite: By audition only, or permission of the department. Both courses must be taken sequentially during the same academic year. First year of a two-year program of pre-professional technical training in ballet, performance experience, and professional dance company observation with the North Carolina Dance Theatre. Emphasis on adagio vocabulary and partnering skills. (Fall, Spring)

DANC 3210. Ballet for Majors III. (2) Intermediate/Advanced Ballet Technique. Prerequisite: DANC 2210, or permission of instructor. May be repeated for credit. Three contact hours. (Fall, Spring)

DANC 3218. Modern Dance for Majors III. (2) Prerequisite: DANC 2218, or permission of instructor. Intermediate/Advanced Modern Dance Technique. May be repeated for credit. Three contact hours. (Fall, Spring)

DANC 3221. Dance History I. (3) Historical and cultural developments of theatrical/concert dance from the Renaissance to the 20th century. (Fall)

DANC 3222. Dance History II. (3) Historical and cultural influences affecting the development of concert dance in the Twentieth Century. (Spring)

DANC 3227. Ballet Pedagogy. (3) Prerequisites: DANC 2119 and DANC 2110; Dance major or permission of instructor. Methods and resources in the teaching of ballet techniques for young dancers. How, why, and when to teach the ballet vocabulary. Integration of concepts of anatomy, kinesiology, physics and the laws of motion and musical accompaniment. Three contact hours. (Spring)

DANC 3229. Contact Improvisation. (2) Pre- or corequisite: DANC 1218 or any level of technique course (DANC 1209, 1210, 1217, 1218, 2209, 2210, 2217, 2218, 3210, 3218). Experiential exploration of basic concepts of contact improvisation including skills of weight sharing, falling, and lifts. Three contact hours. (On demand)

DANC 3230. Choreography II. (3) Prerequisites: DANC 2216 and 2217. Methods and sources for dance composition, culminating in creative experience. May be repeated for credit. Four contact hours plus a minimum of 2-3 hours lab time. (Fall)

DANC 3261. Essay Writing for Dance. (1) Special topic in dance. May be repeated for credit with change in topic. Two to six contact hours. (On demand)

DANC 3262. Performance Practicum. (1) Prerequisites: DANC 3202 and audition. Both courses must be taken sequentially during the same academic year. Continuation of DANC 3201-3202 with emphasis on allegro vocabulary, and technical precision of complex combinations. (Fall, On demand)

DANC 4001. Topics in Dance. (1-3) Special topic in dance. May be repeated for credit with change in topic. Two to six contact hours. (On demand)

DANC 4110. Writing for Dance. (3) (W) Prerequisites: DANC 3222, Senior standing, and Dance major. Concert Dance and related professional communication are used as a basis for discussion and writing. (Fall, On demand)

DANC 4201-4202. Professional Training Certificate in Dance. (8) Prerequisites: DANC 3202 and audition. Both courses must be taken sequentially during the same academic year. Continuation of DANC 3201-3202 with emphasis on allegro vocabulary, and technical precision of complex combinations. (Fall)

DANC 4227. Dance Education Methods I. (3) Prerequisite: DANC 1202 or permission of instructor. Corequisite: DANC 4227L. Examination of dance, movement, pedagogic and assessment philosophies, theories and practices toward lesson planning and curriculum development for elementary education. (Fall)

DANC 4227L. Elementary Clinical Experience. (1) Corequisite: DANC 4227. Observation and teaching in an elementary school setting. Application of theories and methodologies introduced in DANC 4227. Two contact hours. (Fall)

DANC 4257. Dance Education Methods II. (3) Prerequisite: DANC 1202 or permission of instructor. Corequisite: DANC 4257L. Skill development in utilization of dance, movement, pedagogic theories and practices, and assessment toward lesson planning and curriculum development for secondary education. (Spring)

DANC 4257L. Secondary Clinical Experience. (1) Corequisite: DANC 4257. Observation and teaching in a secondary school setting. Application of theories and methodologies introduced in DANC 4257. Two contact hours. (Spring)

DANC 4400. Internship in Dance (3-6) Prerequisite: GPA of at least 2.5, junior status, and permission of department chair. Research and/or in-service training for dance majors and minors in cooperating organizations. Specific content is based upon a contract between the students department and
professional organization. *Graded on a Pass/No Credit basis.* (Fall, Spring, Summer)

**DANC 4467. Student Teaching/Seminar: K-12 Fine and Performing Arts: Dance. (15) (O)** Prerequisite: Approved application for student teaching; Senior standing; completion of professional education requirements; and grades of C or above in all courses required for licensure. Corequisite: Enrollment only in student teaching. Additional classes may not be taken while student teaching. A planned sequence of experiences in the student’s area of specialization conducted in an approved school setting under the supervision and coordination of a University supervisor and a cooperating teacher in which the student demonstrates the competencies identified for his/her specific teaching field in an appropriate grade level setting. *(Fall, Spring)*

**DANC 4601. Individual Project. (1-6)** Prerequisite: Permission of department chair. May be repeated for credit. *(Fall, Spring, Summer)*

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**ELECTRICAL AND COMPUTER ENGINEERING (ECGR)**

Courses must be completed to progress within three attempts including withdrawing from the course with a grade of W. Failure to progress in three attempts will result in suspension from the program.


**ECGR 2111. Network Theory I. (3)** Prerequisites: MATH 1242 and PHYS 2101 both with a grade of C or above. Pre- or corequisites: MATH 2171 and PHYS 2102, or permission of the department. Introduction to Kirchhoff’s laws and terminal equations. Circuit analysis techniques and network theorems. Singularity functions and signals. Transient and natural response of first and second order networks. State variable analysis.

**ECGR 2112. Network Theory II. (3)** Prerequisites: ECGR 2111, MATH 2171, and PHYS 2102, all with a grade of C or above. Continuation of ECGR 2111. Introduction to sinusoidal steady state. Time frequency domain analysis. Power and energy. Two port networks. Fourier series. Introduction to Fourier and Laplace transforms.

**ECGR 2155. Instrumentation and Networks Laboratory. (1) (W)** Prerequisites: MATH 1242 with a grade of C or above. Pre- or corequisite: ECGR 2111 or permission of department. Network measurements and applications, introduction to laboratory equipment and techniques.

**ECGR 2156. Logic and Networks Laboratory. (1) (W)** Prerequisites: ECGR 2155 and 2181. Pre- or corequisite: ECGR 2112 or permission of department. Experimental logic design, network measurements, applications, and instrumentations.

**ECGR 2161. Basic Electrical Engineering I. (3)** Prerequisite: PHYS 2102 with a grade of C or above. Fundamental concepts and methods of analysis of D.C. and A.C. circuits, elementary operation of electronic devices. Not open to Electrical and Computer Engineering majors.

**ECGR 2181. Logic Systems Design I. (3)** Prerequisite: MATH 1242 with a grade of C or above or permission of the department. Introduction to Boolean algebra; mixed logic; design of combinational circuits; introduction to sequential systems; MSI building blocks; includes laboratory design projects.

**ECGR 2252. Electrical Engineering Design I. (2) (O)** Prerequisites: ECGR 2111 and ECGR 2155 or equivalents. Pre- or corequisites: ECGR 2112 and ECGR 2181 or equivalents. Introduction to the electrical engineering design process including teamwork, design specifications, conceptual design, detailed design, design integration, cost estimation and market considerations. Product design projects are completed and laboratory prototypes are developed and tested by design teams. Oral presentations and written technical reports on the design projects are required.

**ECGR 2255. Digital Design Laboratory. (2)** Prerequisites: ECGR 2156 and ECGR 2381 with grades of C or above. Experiments in Digital Systems Design including the use of Programmable Logic Devices.

Upper division engineering courses (3000 level and above) used to satisfy degree requirements within the College of Engineering are restricted to majors and minors of the College of Engineering.

**ECGR 3090. Special Topics in Electrical Engineering. (1-4)** Prerequisite: Permission of the department. The course builds upon and synthesizes knowledge from the engineering science, mathematics, and physical sciences stem of the core curriculum. The specific topics teach engineering analysis, synthesis, and design, while simultaneously affording an opportunity for the students to investigate an area of specialization. May be repeated for credit.


**ECGR 3112. System Analysis II. (3)** Prerequisite: ECGR 3111 with a grade of C or above. A continuation of ECGR 3111 emphasizing system response characteristics in the frequency domain. Introduction to techniques of analysis of continuous and discrete systems.

**ECGR 3121. Introduction to Electromagnetic Fields.**
ECGR 3122. Electromagnetic Waves. (3) Prerequisite: ECGR 3121 with a grade of C or above. A study of electric and magnetic fields using the vector formulation. Vector analysis. Electrostatics: potential functions, dielectrics, capacitance, energy, and forces associated with electric fields, solution of Laplace’s and Poisson’s equations. Magnetostatics: vector potential functions, Lorentz forces, hysteresis, magnetic polarization and induction, and energy. Gauss’s, Ampere’s, Faraday’s laws, etc., leading to the Maxwell’s equations.

ECGR 3123. Data Communications and Networking. (3) Prerequisites: ECGR 2111 and ECGR 2181. An introduction to data communications, including transmission media, signal encoding, link control, and multiplexing. Concepts of networking including protocols, LAN, WAN, and wireless networks.

ECGR 3131. Fundamentals of Electronics and Semiconductors. (3) Prerequisite: ECGR 2112 with a grade of C or above. Study of the fundamental concepts and applications of semiconductor devices. Diode characteristics and applications, including clamping and rectifier circuits. MOS, JFET, and bipolar transistor fundamentals, including D.C. biasing and small-signal analysis of single-stage amplifiers. Operational amplifier fundamentals.

ECGR 3132. Electronics. (3) Prerequisites: ECGR 3131 with a grade of C or above. Low and high-frequency analysis of transistor amplifiers. Multistage and feedback amplifier design. Stability and oscillation. Operational amplifier design and applications.

ECGR 3133. Solid State Microelectronics I. (3) Prerequisites: ECGR 3121 and PHYS 3141, or permission of the department. Simple crystal structures, energy bands, and charge carriers in semiconductors, distribution functions for photons and electrons, optical and electrical properties, carrier diffusion, generation, and recombination.

ECGR 3134. Industrial Electronics. (3) Prerequisite: ECGR 3131 with a grade of C or above. High power solid state circuits. Topics include choppers, phase controlled rectifiers, triggering devices, inverters and dual converters, limiting and regulating circuits.


ECGR 3155. Systems and Electronics Laboratory. (1) (W) Prerequisites: ECGR 2112 and ENGR 2156. Pre- or corequisites: ECGR 3111 and ECGR 3131, or permission of the department. Systems and signals measurements and applications; electronic circuits.

ECGR 3156. Electromagnetic and Electronic Devices Laboratory. (1) (W) Prerequisite: ECGR 3155. Pre- or corequisite: ECGR 3132 or permission of the department. Measurements and applications of electromagnetic and solid state devices.

ECGR 3157. Electrical Engineering Design II. (2) (O) Prerequisites: ECGR 2112, ECGR 2252, and ECGR 2181. Pre- or corequisites: ECGR 3111 and ECGR 3131, or permission of the department. Application of conceptual design; circuit design; parameter sensitivity analysis; cost-performance tradeoff analysis and interconnection compatibility design. A design project completed in a laboratory setting and a written technical report and oral presentation on the project are required.

ECGR 3159. Professional Practice. (2) Prerequisite: Senior standing in engineering. Ethics; safety and liability in the manufacturing workplace; product design; product development; cost estimating for non-recurring engineering work; production planning; Total Quality Management; and effective technical presentation.

ECGR 3181. Logic System Design II. (3) Prerequisite: ECGR 2181 with a grade of C or above or permission of the department. Digital systems design and test. Top-down design of multi-input based controller systems; programmable logic devices.

ECGR 3182. Digital Electronics. (3) Prerequisites: ECGR 3131 and ECGR 3181, both with a grade of C or above. Bipolar and field-effect transistors, switching characteristics, device models, logic families. Memory devices, one-shots, Schmitt triggers, logic gates, drivers. Use of logic analyzers.

ECGR 3183. Computer Organization. (3) Prerequisites: ECGR 3181 and ECGR 2103 or ITCS 1213 or permission of instructor. Introduction to key concepts in computer organization, design, and engineering including the following topics: CPU performance analysis, instruction set design, systems-level view of computer arithmetic, design of the datapath and control for a simple processor using VHDL, pipelining, hierarchical memory, I/O systems.

ECGR 3253. Senior Design I. (2) (O, W) Prerequisites: Senior standing in engineering, ECGR 2155, ECGR 2156, ECGR 3111, and ECGR 3131, all with a grade of C or above. A project-oriented course stressing the planning and design of experiments to support the student’s project. Formation of the design problem and specification.

ECGR 3254. Senior Design II. (3) (O, W) Prerequisite: ECGR 3253 with a grade of C or above. A continuation of ECGR 3253 consisting of project development and analysis, culminating in a written and oral presentation.
ECGR 3695. Electrical Engineering Cooperative Education Seminar. (1) Prerequisites: ENGR 3590 and permission of the ECE department's co-op advisor. Required for co-op students during semesters immediately following each work assignment for presentation of engineering reports on work done the prior semester. Graded on a Pass/No Credit basis. May be repeated for credit.

ECGR 3890. Individualized Study. (1-3) Prerequisite: Permission of the department. Supervised individual study within an area of a student's particular interest which is beyond the scope of existing courses. May be repeated for credit.

ECGR 3990. Undergraduate Research. (1-4) Prerequisite: Permission of the department. This course involves the independent study of theoretical and/or experimental problems in the specialized area of engineering analysis and design. The student can pursue some particular area or problem to a depth much greater than can be undertaken within the scope of existing courses. May be repeated for credit.

ECGR 4090. Special Topics in Electrical Engineering. (1-4) Prerequisite: Permission of the department. Directed study of current topics of special interest. May be repeated for credit.

ECGR 4101. Embedded Systems. (3) Prerequisite: ECGR 3183 or ITCS 3182. Introduction to designing microcontroller-based embedded computer systems using assembly and C programs. Examination of real-time operating systems and their impact on performance. Computer engineering applications will be emphasized.

ECGR 4102. Engineering Simulation. (3) Prerequisite: ECGR 2103 or permission of the department. A wide range of simulation related topics will be introduced including the theory of simulation, characteristics of simulators, and trade-offs in simulation studies. Continuous and discrete simulation with primary emphasis on application of simulation techniques to engineering problems. Simulation of actual problems based on students' interest and experience areas.

ECGR 4103. Applied Computer Graphics. (3) Prerequisite: ECGR 3111 or permission of the department. Interactive graphics; raster, character, vector, graphics, display technologies; rotation, scaling, translating of graphics image; image processing/enhancement; feature extraction; 3-D graphics.

ECGR 4104. Computational Methods in Power Systems. (3) Prerequisite: ECGR 4142 or permission of the department. Numerical techniques for analysis, operation, and planning of power systems. Sparse matrix techniques applied to power flow algorithms. Economic operation of power systems. Optimum power flow.


ECGR 4121. Antennas. (3) Prerequisite: ECGR 3122 with a grade of C or above or permission of the department. Radiation into free space, the point source, thin linear antenna, arrays of linear elements, aperture antennas, impedance, methods of feeding, matching and termination. Antenna systems.

ECGR 4122. Acoustics. (3) Prerequisite: ECGR 3122 with a grade of C or above. Vibrations and simple vibrating systems; radiating systems; plane waves of sound, dynamic analogies, microphones and other acoustic transducers; acoustic measurements.

ECGR 4123. Analog and Digital Communication. (3) Prerequisite: ECGR 3111 with a grade of C or above. Analysis and transmission of signals, including analog communication systems (amplitude and frequency modulation); digital communications systems (pulse code modulation and data transmission systems).

ECGR 4124. Digital Signal Processing. (3) Prerequisite: ECGR 3111 with a grade of C or above. Sampling and signal recovery in linear systems; analysis of sampled systems; discrete and fast Fourier transforms; z-transform; discrete convolution; design of digital FIR and IIR filters.

ECGR 4125. Foundation of Optical Engineering. (3) Prerequisites: ECGR 3121 and PHYS 3141, with a grade of C or above or permission of the department. The engineering aspects and applications of modern optics, optical communications, optical materials, optical devices, basic optical fiber and integrated optics, optical signals, and optical modulation, multiplexing, and related networks, basic Fourier optics and its application in optical images and information. Credit will not be given for ECGR 5125 where credit has been given for ECGR 4125. (Fall)
ECGR 4131. Linear Integrated Electronics. (3) Prerequisite: ECGR 3132 with a grade of C or above. Design of linear integrated circuits utilizing bipolar and MOS devices. Application in linear amplifier design, control, and processing of analog signals.

ECGR 4132. Analog Integrated Circuits Design. (3) Prerequisite: ECGR 4131 with a grade of C or above or Permission of the department. Topics include analog MOS modeling, design of current mirrors, references, and operational amplifiers. Both hand analysis and SPICE simulation utilized.

ECGR 4134. Solid State and Semiconductor Microelectronics II. (3) Prerequisites: ECGR 3133 with a grade of C or above or permission of the department. PN-junctions and Schottky junctions; bipolar and field effect transistors; optoelectronic and heterojunction devices; lithography and integrated circuits; microwave devices; light emitting devices and detectors; quantum devices using superlattices; quantum wells and quantum dots; material preparation and characterization; and measurement techniques.

ECGR 4135. Physical Electronics. (3) Prerequisite: ECGR 3122 or PHYS 3181 or permission of the department. Dynamics of charged particles; electron motion in electromagnetic fields; types of electron emission; beam focusing; longitudinal and transverse beam waves; microwave generation; plasma parameters.

ECGR 4136. Semiconductor Optoelectronic Materials and Devices. (3) Prerequisite: ECGR 3133 with a grade of C or above, or permission of department. Direct and indirect bandgap materials; Compound and wide bandgap semiconductors; Electronic properties; Optical properties; Generation and recombination; Junction theory; Light emitting devices; Optical detectors. (Fall)

ECGR 4137. Device Electronics for Integrated Circuits. (3) Prerequisites: ECGR 3132 with a grade of C or above or permission of the department. The basic operating principles of electronic devices in integrated circuits are treated. The physical models of these devices are discussed. Graduate students are required to carry out laboratory experimentation.

ECGR 4138. Electronic Thin Film Materials and Devices. (3) Prerequisite: ECGR 3132 or ECGR 3133, both with a grade of C or above or permission of the department. Applications of thin films in microelectronics/optoelectronics manufacturing processes; vacuum technology, deposition techniques, and the characterization methods relevant to optoelectronic applications; thin film applications such as metallization, silicide formation, light emitting diodes (LED) and lasers, and doping of semiconductors.

ECGR 4139. Digital Communication Systems. (3) Prerequisites: ECGR 2181 and ECGR 3131. Topics include digital data transmission systems, signal and system representation, digital system performance characterization, pulse code modulation, and statistical communications theory.

ECGR 4140. Introduction to VLSI Processing. (3) Prerequisite: permission of the department. Microelectronic fabrication; relevant materials, processes, and tools; fabrication of a simple structure in the VLSI clean room/lab.


ECGR 4143. Electrical Machinery. (3) Prerequisite: ECGR 3121 and PHYS 3141, or permission of the department. Basic principles of quantum electronics, interaction of light with atoms, properties of laser light, and laser applications. Electromagnetic aspects of lasers, Maxwell’s Equations and beam, ray optics, matrix methods for the analysis and synthesis of optical systems. Laser resonator design, oscillation modes, mode frequency and stability.

ECGR 4146. Introduction to VHDL. (3) Prerequisites: ECGR 3181 with a grade of C or above and knowledge of a computer language, or permission of the department. Introduction to VHSIC Hardware Description Language (VHDL) including VHDL-based high-level design of microelectronic systems, VHDL programming, and VHDL synthesis; emphasis on learning and using industry-standard VHDL tools.

ECGR 4161. Introduction to Robotics. (3) Prerequisite: Senior standing. Modeling of industrial robots including homogeneous transformations, kinematics, velocities, static forces, dynamics, computer animation of dynamic models, motion trajectory planning, and introduction to vision, sensors, and actuators.

ECGR 4162. Control of Robotic Manipulators. (3) Prerequisites: ECGR 4161 and ECGR 4111. Control of industrial robots including linear, nonlinear, and adaptive control of robot’s motion plus control of forces and torques exerted by the end-effector. Additional topics include computer animation of the controlled behavior of industrial robots, actuator and sensor types, robot vision, and control computer/robot interfacing.


**ECGR 4181. Computer Architecture.** (3) Prerequisite: ECGR 3183 or permission of the department. Latest research and development in the area of computer architecture; multiprocessor architecture, multi-computers, interconnection networks, branch prediction, instruction-level, data-level and thread-level parallelism, and memory hierarchy; high-performance machines and special purpose processors.

**ECGR 4182. Digital System Testing.** (3) Prerequisite: ECGR 3181 with a grade of C or above or permission of the department. Introduction to VLSI testing, test process and automatic test equipment, test economics and product quality, test economics, fault modeling, logic and fault simulation, testability measures, combinational and sequential circuit test generation, memory test, analog test, delay test, IDDQ test, design for testability, built-in self test, boundary scan, analog test bus, system test and core test.


**ECGR 4184. Device Characterization, Parameterization and Modeling.** (3) Prerequisite: ECGR 3132 permission of the department. Advance device and circuit analysis; device and circuit simulation using SPICE, ECAP or equivalent. Parametric modeling of active devices. Device characterization and parameterization; temperature effects; thermal cycling. Analysis of device failure modes.

**ECGR 4185. Electromagnetic Optics.** (3) Prerequisites: ECGR 3122 or permission of the department. This course includes topics of electromagnetic wave in optical devices and optical systems. Electromagnetic wave propagation in dielectric media: optical waveguide, periodic structure, multi-layer dielectric, photonic crystals, anisotropic, and nonlinear materials.

**ECGR 4186. Optical Communication and Optical Signals.** (3) Prerequisites: ECGR 4125 or permission of the department. The course covers the fundamentals of modern optical networks, optical systems, and protocols. These include transmission, detection, multiplexing/demultiplexing and related prevailing technology.

**ECGR 4187. Data Communications and Networking II.** (3) Prerequisite: ECGR 3123 or permission of the department. Principles of data communication networks; computer communications network architecture (layering) with emphasis on the network layer, transport layer, and application layer; local area networks; medium access control; routing; data transport; Internet applications.

**ECGR 4188. Advanced VLSI Systems Design.** (3) Prerequisite: ECGR 4433. A project-oriented course dealing with advanced topics in VLSI systems design and analysis such as circuit design techniques, array structures, performance estimation, automated routing, and device electronics.


**ECGR 4191. Dynamic and Transient Analysis of Power Systems.** (3) Prerequisite: ECGR 4142 or permission of department. Large-scale systems state descriptions and hierarchical control. State space models, dynamic stability and testing. Stability of simple and multi-machine systems. Transient phenomena in electrical power systems. Transient stability problem.

**ECGR 4193. Experiments in Modern Optical Engineering.** (3) Prerequisites ECGR 4125 and ECGR 4165 or permission of department. This course offers lectures and laboratory experiments in lasers, optical fiber, optical sensing, and optical signal processing. This course is offered as supplement to ECGR 4125 and ECGR 4165 with emphasis on hands on experiments, measurements, and design.

**ECGR 4222. Multidimensional Stochastic Signal Processing.** (3) Prerequisites: ECGR 3111 or permission of department. Review of probability, univariate and multivariate distribution functions, noise modeling, least-squares estimation, non-linear optimization, Markov chains, Bayes theorem; applications. (On demand)

**ECGR 4231. Sensors & Actuators.** (3) Prerequisite: ECGR 3121, ECGR 3132, or permission of department. Fundamentals of sensors and actuators, and their applications in smart machines, industry, metrology, and the environment. Materials for sensors, actuators, electronic and optical sensors, electrooptics, magneeto-optics, and fiber optics sensors, microsensors and actuators, sensors and actuators, signal processing and interfaces.

**ECGR 4261. Microwave Circuit Design I.** (3) Prerequisites: ECGR 3131; and senior/graduate standing, or permission of department. Design and analysis of microwave devices and circuits; including microwave aspects of discrete active (i.e., field effect and bipolar transistors, etc.) and passive (i.e., microstrips, inductors, capacitors) components; device parameter extraction, using computer aided design (CAD) tools.

**ECGR 4265. Microwave Devices and Electronics.** (3)
Prerequisites: ECGR 3122 and PHYS 2102 with grades of C or above or permission of department. Microwave transmission line theory, parameters, microwave waveguides, microstrip line and components including resonators, slow-wave structures, tees, rings, couplers, circulators, isolators, and microwave tubes. Microwave solid state electronics, including microwave transistors, tunnel diodes, transferred electron devices, avalanche transit-time devices, and mono-lattice microwave integrated circuits.

ECGR 4299. Nuclear Reactor Engineering. (3) Prerequisites: ECGR 4399 and PHYS 3141 or permission of the department. Reactor operation and control, neutron diffusion, distribution, moderation, interaction, and transport, nuclear reactor theory, the time-dependent reactor, heat removal, radiation protection, radiation shielding, radiation damage, IV generation reactors, and advanced topics in nuclear reactor technologies and nuclear applications.

ECGR 4399. Fundamentals of Nuclear Science and Nuclear Energy: A Contemporary Overview. (3) Prerequisite: Modern physics or permission of the department. Atomic nucleus, kinematics, cross-section, and energy conversion, essential topics in atomic theory, nuclear theory, radioactive decay, interaction of radiation with matter, neutron physics, neutron transport, nuclear reaction. Principles of fission reactors, the fission process, the controlled chain reaction and the critical conditions. Principles of a nuclear reactor, overview of different reactor types, components of the core, reactor containment, reactor safety systems, steam turbine plant, thermo hydraulic aspects of the core and the fuel elements, loss of coolant, break of steam turbine plant, thermo hydraulic aspects of the core and of the fuel elements, loss of coolant, break of steam generator pipe, nuclear reactors accidents, consequences of core melt, and new topics in nuclear reactor design in III and IV generation of reactors.

ECGR 4422. Random Processes and Optimum Filtering. (3) Prerequisites: ECGR 3111 and STAT 3128 or permission of department. Review of probability, univariate and multivariate distribution functions; random processes, discrete and continuous time processes, widesense stationary, ergodicity; time- and frequency-domain analysis; linear systems, optimum filtering, Wiener filters, Kalman filters; application.

ECGR 4433. VLSI Systems Design. (3) Prerequisites: ECGR 3131 and ECGR 3181, both with a grade of C or above or permission of the department. Analysis, design, and synthesis of very large scale integrated circuits. A project-oriented course relying heavily on computer-aided design tools for logic, layout design, and simulation.

ECGR 4892. Individualized Study. (1-6) Individual investigation and exposition of results. May be repeated for credit.

ECON 1090. Topics in Economics. (1-3) Consideration of topics from the areas of economic theory, economic development, consumer economics, welfare economics, and current economic problems. May be repeated for credit as topics vary. (On demand)

ECON 1101. Economics of Social Issues. (3) Economic issues without emphasis on theoretical models. Contemporary economic issues such as pollution control, health care, unemployment, and crime are studied. A student is ineligible to take this course if credit has already been received for either ECON 2101 or ECON 2102. (Fall, Spring, Summer)

ECON 2101. Principles of Economics-Macro. (3) Scope and methodology of economics as a social science, the measurement of national income, the theory of national income determination, money and banking, monetary and fiscal policy, and international economics. (Fall, Spring, Summer) (Fall Evenings)

ECON 2102. Principles of Economics-Micro. (3) Pricing mechanism of a market economy, the industrial organization of the U.S. economy, problems of economic concentration, the theory of income distribution, and comparative economic systems. (Fall, Spring, Summer) (Spring Evenings)

ECON 3090. Topics in Economics. (3) Prerequisite: Permission of the department. Topics from the areas of economic theory, economic development, consumer economics, welfare economics, and current economic problems. May be repeated for credit. (On demand)

ECON 3105. Industrial Relations. (3) Prerequisite: introductory course in economics or permission of instructor. Systematic analysis of the sociological, economic, and legal forces affecting the work environment. Emphasis on labor unions and employment law. (On demand)

ECON 3106. Labor Economics. (3) Prerequisites: ECON 2101 and 2102. Economics of labor markets with emphasis on wage and employment theory, collective bargaining, and human capital theory. Historical and legal forces affecting labor markets. (Fall)

ECON 3107. Employment Law. (3) Cross-listed as MGMT 3243. Legal principles and legislation which control employment decisions in union and non-union settings. Topics include fair employment practices, anti-discrimination law, representation elections, unfair labor practices, and dispute settlement processes. (On demand)

ECON 3112. Econometrics. (3) Prerequisites: ECON 2101 and 2102, MATH 1120 or 1241, STAT 1220 and INFO 2130. Econometric techniques, including simple and multiple least squares regression with problems and analyses. (Fall, Summer)
ECON 3114. Research Methods. (3) Prerequisites: STAT 1220, INFO 2130, and ECON 3112. Introduction to research in economics, including major sources of data and information and application of elementary research methods to economic problems. (On demand)

ECON 3115. Money and Banking. (3) Prerequisite: ECON 2101. The characteristics and functions of money in the modern economy, monetary theory and policy, and financial institutions. (Fall)

ECON 3122. Intermediate Microeconomics. (3) Prerequisites: ECON 2101 and 2102 and MATH 1120 or 1241. Microeconomic analysis with emphasis on consumer theory and the theory of production. Resource allocation and the determination of optimum output and pricing by a firm operating under various market structures. Distribution and welfare theories. (Fall, Spring, Summer) (Evenings)

ECON 3123. Intermediate Macroeconomics. (3) Prerequisites: ECON 2101 and 1202 and MATH 1120 or 1241. Analysis of economic aggregates with inflation, unemployment, and income determination. Keynesian, Classical, Monetarist, and supply side models. (Spring)

ECON 3125. Managerial Economics. (3) Prerequisites: ECON 2102, MATH 1120 or 1241, STAT 1220, and INFO 2130. Economic decisions of particular interest to business firms, e.g., demand theory and forecasting; cost analysis and pricing policies. (Fall, Spring, Summer) (Evenings)

ECON 3131. Economic History of the United States. (3) Prerequisite: ECON 2101 or 2102. Use of economic models to further understanding of the growth and development of the U.S. economy from colonial times to the Great Depression. Emphasis on the sources and consequences of American growth, with particular emphasis on technological, demographic, and institutional changes. (On demand)

ECON 3141. Health Economics. (3) Prerequisite: ECON 2102. The application of microeconomic concepts to markets for health/medical care, including issues such as health care delivery, financing, regulation, and costs. (On demand)

ECON 3151. Law and Economics. (3) Prerequisite: ECON 2102. The application of microeconomic concepts to the law with an emphasis on examining the impact of laws on resource use, with the goal of using resources efficiently. The emphasis will be on property, contract, tort, and criminal law. (Fall)

ECON 3171. International Business Economics. (3) Prerequisite: ECON 2101 and 2102. Survey of international trade and international monetary theory including determination of international trade patterns, welfare implications of international trade and trade restrictions, economic integration, exchange rate determination, and the balance of payments. Credit will not be given for ECON 3171 where credit has already been given for ECON 4171 or 4172. (On demand)

ECON 3400. Economic Internship. (1-3) Prerequisites: Open to junior and senior Economics majors in good standing. Requires 50 hours of supervised employment per hour of credit and the completion of an academic project. Students must consult the department chair in advance of registration to discuss the availability of positions. A proposal form must be completed and approved prior to registration and the commencement of the work experience. Graded on a Pass/No Credit basis. Cannot be taken for credit at the same time or following any other internship for credit and cannot be repeated. (Fall, Spring, Summer)

ECON 3500. Cooperative Education and 49ership Experience. (0) Enrollment in this course is required for the department’s Cooperative Education and 49ership/service 49ership students during each semester they are working in the position. Restricted to majors in the department of Economics. Participating students pay a course registration fee for transcript notation (49ership and co-op) and receive full-time student status (co-op only). Assignments must be arranged and approved in advance. Course may be repeated; evaluation may be Satisfactory/Unsatisfactory. Only open to undergraduate students; Graduate level students are encouraged to contact their academic departments to inquire about academic or industrial internship options for credit. For more information, contact the University Career Center. (Fall, Spring, Summer)

ECON 3895. Directed Individual Study. (1-3) Prerequisites: permission of the instructor and the department. Independent study of a theoretical and/or a policy problem in a special area of economics. Students may pursue a particular program in depth. Topics of the investigation may originate from the student or from the faculty member supervising the study. May be repeated for credit. (Fall, Spring, Summer) (Evenings)

ECON 4100. Mathematical Economics. (3) Prerequisites: ECON 2101 and 2102 and MATH 1120 or 1241. Both microeconomic and macroeconomic problems are analyzed with quantitative techniques. Emphasis is given to the study of methods for mathematically formulating economic relationships including the tools used for finding maximums, minimums, and limits to single, recursive, and simultaneous economic relationships. Not available for credit in the M.S. program in Economics. (Spring)

ECON 4112. Econometrics II. (3) Cross-listed as ECON 6112. Prerequisite: ECON 3112 or permission of instructor. Tools of analysis are more extensive and of a greater depth than those studied in ECON 3112. Regression and correlation techniques are applied to economic and business problems derived from government and business environments. Not available for credit in the M.S. program in Economics. (On demand)

ECON 4116. Public Finance. (3) Prerequisite: ECON 3122. Revenue and expenditure problems of
governmental units, intergovernmental financial relationships and the impact of federal fiscal policy upon the American economy. (On demand)

ECON 4117. Business and Economic Forecasting. (3) Prerequisite: ECON 3112. Analysis of fluctuations in economic activity, including production, employment, prices and industry sales. Topics include forecasting methods, business cycle theories, historical record, industry and sales forecasting. Not available for credit in the M.S. program in Economics. (Spring)

ECON 4135. Economics of Growth and Development. (3) Prerequisite: ECON 2102. Theories of economic growth and development applied to varying economic and social systems. Emphasis on current theoretical models of technological innovation and growth. (On demand)

ECON 4150. Urban and Regional Economics. (3) Prerequisite: ECON 2102. Spatial and economic organization of cities and regional areas and their special economic problems. Topics include economic growth, urban location and land use, poverty, housing, public finance, and urban transportation. (On demand)

ECON 4160. Economics of Transportation. (3) Prerequisite: ECON 2102. Analysis of transportation systems. Topics include the historical development of various modes, costs and rate-making, regulation and national transportation policy. (On demand)

ECON 4171. Economics of International Trade. (3) Prerequisite: ECON 3122, or ECON 3171 and ECON 2102. Theory of international trade, including determination of international trade patterns, welfare implications of international trade, economic integration, and effects of tariffs and quotas. (On demand)

ECON 4172. Economics of International Finance. (3) Prerequisite: ECON 3123, or ECON 3171 and ECON 2102. Survey of international monetary theory. Topics include exchange rate determination, balance of payments and adjustment, international liquidity, capital movements, international financial organizations, and monetary reform proposals. (Fall)

ECON 4177. History of Economic Thought. (3) Prerequisite: ECON 3122 and ECON 3123. One of the two courses may be taken as a corequisite. History of economics as a science and the evolution of theories of value, distribution and employment. Review of the works of Adam Smith, Thomas Malthus, David Ricardo, Karl Marx, Alfred Marshall, Thorstein Veblen, and John Maynard Keynes. (On demand)

ECON 4180. Industrial Organization and Public Policy. (3) Prerequisite: ECON 3122. An examination of monopolistic competition, oligopoly, and monopoly and questions of public policy in dealing with problems created by industrial concentration. (Spring, Summer)

ECON 4181. Energy and Environmental Economics. (3) Prerequisite: ECON 2102. Economic issues of both energy and environment. Energy issues include the historical development of energy resources, supply and demand considerations and projections of the future energy balance. Environmental issues are externalities, common property resources, and government regulation. Policy considerations include environmental standards, pollution charges, and property rights. Cost-benefit analysis and microeconomic theory are applied. (On demand)

EDUC 2100. Introduction to Education and Diversity in Schools. (3) Social, historical, and philosophical foundations of the educating professions, the organization and various levels of education, and the major issues in American education. Field-based activities in observing in-class and non-classroom settings: 5 hours. (Fall, Spring, Summer)

EDUC 2150. Human Development Across the Life Span. (3) Biological, psychological and social development throughout the life span. (On demand)

EDUC 3600. Teaching Fellows Seminar. (1) Prerequisite: Membership in good standing in the North Carolina Teaching Fellows Program. A discussion-oriented course in contemporary school issues led by the program’s faculty sponsors to cover Teaching Fellows Program expectations and prepare students to participate in required school, community, campus, and other enrichment activities. May be repeated for credit. (Fall, Spring)

EDUC 3789. Seminar: Honors in Education. (3) Prerequisite: admission to the Honors in Education program. The seminar prepares honors students for a successful thesis by introducing them to the Honors in Education program and by helping them identify an appropriate committee chair and reader. The seminar also covers guidelines for preparing a thesis and appropriate thesis designs and themes. The course culminates in the presentation and defense of an acceptable honors proposal. (Spring)

EDUC 3790. Honors Thesis in Education. (3) Prerequisite: completion of EDUC 3789 with a grade of C or above. In this course honors students conduct their research and data analysis, and they write and defend their thesis before their honors committee. A grade of “A” is required for honors recognition from UNC Charlotte. The thesis must be approved and substantially completed (only minor, editorial revisions remain) prior to the student teaching seminar. (Fall)

EDUC 4290. Modifying Instruction for Learners with Diverse Needs in the Elementary School. (3) Prerequisite: admission to Teacher Education. Corequisite: enrollment in methods course(s) with field experience requirement. Strategies for adapting standard instruction to meet the learning needs of all members of elementary classrooms, including students at risk for school failure, individuals from culturally and linguistically diverse backgrounds,
EDUC 4291. Modifying Instruction for Learners with Diverse Needs in Middle/Secondary Schools. (3) Prerequisites for Middle Grades Majors: EDUC 2100, SPED 2100, MDSK 3151, and MDLG 3130. Corequisites for Middle Grades Majors: One of the following: MDSK 4251, MDSK 4253, ENGL 4254, or MAED 4252. Prerequisites for Secondary Education Minors: MDSK 2100, MDSK 3151, and SECD 4140. Corequisites for Secondary Education Minors: READ 3255 and one of the following: MDSK 4251, MDSK 4253, ENGL 4254, or MAED 4252. Strategies for adapting standard instruction to meet the learning needs of all members of middle or secondary classrooms, including students at risk for school failure, individuals from culturally and linguistically diverse backgrounds, gifted learners, and students with disabilities. (Fall, Spring, Summer)

ELED 3111. Instructional Design and Technology Integration with Elementary School Learners. (3) Prerequisite: Admission to Elementary Education Program. Introduction to setting goals and objectives for instruction, various formats of lesson addressing, alignment between instructional objectives, activities, and assessments and the related use of technology in the development of effective and systematic learning environments; focused on current PC operation system, word processing, spreadsheet, presentation package, database, email, web browser, multimedia tools, and the Internet. (Fall, Spring)

ELED 3120. The Elementary School Child. (3) Prerequisite: Admission to Teacher Education. Child development theories and research findings, conceptual relationships between education and developmental paradigms, pathways of individual student development, child-centered and other types of educational reforms, the concept of developmental “needs” and the roles and responsibilities of school staff for meeting children’s developmental needs. Includes approximately 10 hours of field activities. (Fall, Spring)

ELED 3221. Teaching Science to Elementary School Learners. (3) Prerequisite: Admission to Teacher Education. Teaching strategies and materials appropriate for teaching inquiry science in grades K-6 with emphasis on using science process skills and content to develop effective science learning experiences for elementary school children. Includes 10 hours of field experiences. (Fall, Spring)

ELED 3222. Teaching Social Studies to Elementary School Learners. (3) Prerequisite: Admission to Teacher Education. Teaching strategies and materials for social studies in grades K-6 with emphasis on using social science content to develop effective social studies instructional plans for elementary school children. Includes 10 hours of field experiences in a classroom setting. (Fall, Spring)

ELED 3226. Teaching Language Arts to Elementary School Learners. (3) (W) Prerequisite: Admission to Teacher Education. Teaching of language arts in grades K-6, including how the study of language acquisition and growth informs and guides instructional practice. Emphasis on methods for fostering growth in speaking, listening, writing, and reading across the curriculum. Includes 10 hours of field experiences. (Fall, Spring)

ELED 3800. Individual Study in Elementary Education. (1-6) Prerequisite: Permission of the student’s advisor. Independent study under the supervision of an appropriate faculty member. May be repeated for credit. (Fall, Spring, Summer)
ELED 4111. Instructional Design and Technology Integration with Elementary School Learners. (1) Prerequisite: Admission to Education Elementary Education Program: completion of all ELED coursework, except 4000-level courses, and Admission to Yearlong Internship. Examination of the North Carolina Standard Course of Study and higher-order thinking skills. Design of technology-rich instruction to address curriculum standards, and exploration of how technology can further enhance student learning. (Fall, Spring, Summer)

ELED 4121. Measuring and Evaluating Learning in the Elementary School Curriculum. (3) Prerequisite: Admission to Teacher Education. Planning for K-6 classroom measurement and evaluation based on objectives with emphasis on writing cognitive, affective, and psychomotor outcomes using an accepted system, and the development of teacher-made tests and other types of classroom assessment, including objectives, essay, oral, performance, and portfolio evaluation. Includes 5 hours of field experiences. (Fall, Spring, Summer)

ELED 4122. Research and Analysis of Teaching Elementary School Learners. (3) Prerequisite: Admission to Teacher Education. Concepts, methods, and practices used by effective teachers in their daily K-6 classroom routines with emphasis on classroom management and organization. Approximately 10 hours of field experience. (Fall, Spring)

ELED 4220. Integrating Curriculum for Elementary School Learners. (3) Prerequisite: Admission to Teacher Education. Curriculum planning and development skills with emphasis on relating school content and skills to societal and individual needs, designing and implementing integrated activities, and attending to the nature and functions of elementary schools. Includes 12 hours of field experiences. (Fall, Spring)

ELED 4255. CAMMP: Computer Applications and Manipulative Mathematics Programs. (3) Prerequisite: Admission to Teacher Education and permission of instructor. Examination of constructivism in K-8 mathematics teaching, with emphasis on concrete, representational and symbolic manipulatives; developmentally appropriate computer software. (Summer)

ELED 4292. Multicultural Education: Modifying Instruction for Urban Learners. (3) Prerequisite: Admission to Elementary Education Program: completion of all ELED coursework, except 4000-level courses, and Admission to Yearlong Internship. This course assists teachers in developing strategies for differentiating instruction to meet the learning needs of all members of elementary classrooms, including but not limited to, students at risk for school failure, gifted students, and individuals form culturally diverse backgrounds. There will also be a focus on socioeconomic class, religion, language, and gender. (Fall, Summer)

ELED 4420. Student Teaching/Seminar: K-6 Elementary Education. (15) (O) Prerequisites: Completion of all other coursework and approved Application for Student Teaching. Planned sequence of experiences in the student’s area of specialization conducted in an approved school setting under supervision and coordination of a University supervisor and a cooperating teacher. Students must demonstrate the competencies identified for their specific teaching field in an appropriate grade-level setting. Approximately 35 to 40 hours per week in an assigned school setting and 10-12 on-campus seminars scheduled throughout the semester. (Fall, Spring)

ELECTRICAL ENGINEERING TECHNOLOGY (ELET)

ELET 1101. Simulation and Schematic Capture. (1) This course introduces computer-aided design and engineering (CAD/CAE) with an emphasis on applications in the electronics field. Topics include electronics industry standards (symbols, schematic diagrams, and layouts); drawing electronic schematics; simulating electronic circuits and printed circuit board layout of electronic circuits. Techniques for capturing CAD/CAE output to include with reports are also covered. This course meets for three (3) lab hours per week in a computer lab. (Fall)

ELET 1111. DC Circuits. (3) Corequisites: ELET 1101, ELET 1111L. Prerequisite or Corequisite: MATH 1100. This course is an introduction to electric circuits with an emphasis on DC circuit analysis and design. Topics include fundamental electrical and magnetic principles, circuit analysis laws and theorems, and component characteristics and behaviors. This course meets for three (3) lecture hours per week. (Fall)

ELET 1111L. DC Circuits Laboratory. (1) Corequisites: ELET 1101 and ELET 1111. This laboratory course supports concepts and practices covered in ELET 1111. This course meets for three (3) laboratory hours per week. (Fall)

ELET 1212. AC Circuits. (3) Prerequisites: ELET 1101, ELET 1111 and ELET 1111L with a grade of C or above. Corequisites: ELET 1212L and MATH 1103. This course is the continuation of an introduction to electric circuits with an emphasis on AC circuit analysis and design. Topics include application of electrical and magnetic principles, analysis laws and theorems in AC circuits, an introduction to frequency response and circuit behaviors under AC excitation. This course meets for three (3) lecture hours per week. (Spring)

ELET 1212L. AC Circuits Laboratory. (1) Prerequisites: ELET 1101 and ELET 1111L with a grade of C or above. Corequisite: ELET 1212. This laboratory course supports concepts and practices covered in ELET 1212. This course meets for three (3) laboratory hours per week. (Spring)

ELET 1231. Digital Circuits. (3) Prerequisites: ELET 1101, ELET 1111 and ELET 1111L with a grade of C or above. Corequisites: ELET 1231L. This course
covers fundamental digital concepts including number systems, logic gates, Boolean algebra, Karnaugh Maps, and combinational logic. Topics include combinational digital circuit design and analysis, minimization methods, and hardware descriptor languages such as VHDL. This course meets for three (3) lecture hours per week. (Spring)

ELET 1231L. Digital Circuits Laboratory. (1) Prerequisites: ELET 1111 and ELET 1111L with a grade of C or above. Corequisite: ELET 1231. This laboratory course supports concepts and practices covered in ELET 1231. This course meets for three (3) laboratory hours per week. (Spring)

ELET 2121. Electronics I. (3) Prerequisites: ELET 1212 and ELET 1212L with a grade of C or above, MATH 1103. Corequisite: ELET 2121L. This course is an introduction to semiconductor electronic devices and circuits. Topics include semiconductor diodes, bipolar junction transistors (BJTs), field-effect transistors (FETs), ideal operational amplifiers and the application of these solid state devices in basic circuits and systems. This course meets for three (3) lecture hours per week. (Fall)

ELET 2021L. Electronics I Laboratory. (1) Prerequisites: ELET 1212 and ELET 1212L with a grade of C or above. Corequisite: ELET 2121. This laboratory course supports concepts and practices covered in ELET 2121. This course meets for three (3) laboratory hours per week. (Fall)

ELET 2141. Introduction to Power Systems (3) Prerequisites: ELET 1212, ELET 1212L, and MATH 1103. This course is an introduction to electromagnetic fundamentals, power generation and distribution, ac and dc machines. This course meets for three (3) lecture hours per week. (Fall)

ELET 2201. C Programming. (3) This course is an introduction to the C programming language with an emphasis on applications in Electrical Engineering Technology. This course meets for three (3) lecture hours per week. (Spring)

ELET 2231. Microprocessor Fundamentals. (3) Prerequisite: ELET 1231. Corequisite: ELET 2201. This course covers application and design assembly and C language programming for AVR microprocessors. Topics include system timing, bus cycles, interrupts, stacks and subroutines. Upon completion, students should be able to design, program, verify, analyze, and troubleshoot AVR assembly and C language programs. This course meets for three (3) lecture hours per week. (Spring)

ELET 2241. Instrumentation and Controls. (3) Prerequisites: ELET 1212, ELET 1212L, and MATH 1103. Corequisite: ELET 2241L. This course is an introduction to instrumentation for measurement and control of physical variables, with an emphasis on electronic systems. Topics include a review of basic circuit analysis, electrical instruments, sensors and measurement principles and a survey of automatic controls from a systems point of view. This course is cross-listed as ETME 3163 and meets for three (3) lecture hours per week. (Spring)

ELET 2241L. Instrumentation Laboratory. (1) Prerequisites: ELET 1212 and ELET 1212L. Corequisite: ELET 2241. This laboratory course supports concepts and practices covered in ELET 2241. This course is cross-listed as ETME 3251 and meets for three (3) laboratory hours per week. (Spring)

Upper division engineering courses (3000 level and above) used to satisfy degree requirements within the College of Engineering are restricted to majors and minors of the College of Engineering:

ELET 3113. Network Analysis. (3) Prerequisites: ELET 1212 and ELET 1212L and with a grade of C or above, MATH 1121, and Junior standing in department. This course is an introduction to frequency domain analysis through Laplace Transforms and Fourier Analysis. Topics include a review of circuit analysis fundamentals in the time domain, circuit transformations, waveform analysis and synthesis and first order natural and forced response with extensive utilization of circuit simulation software. This course meets for three (3) lecture hours per week. (Fall)(Internet)

ELET 3132. Digital Systems. (3) Prerequisites: ELET 1231 and ELET 1231L with a grade of C or above and Junior standing in department. This course covers the design and implementation of digital systems. Topics include combinational and sequential digital circuits, minimization methods, state machine design and state assignment techniques, hardware descriptor languages such as VHDL, circuit implementation using MSI integrated circuits and programmable logic devices. This course meets for three (3) lecture hours per week. (Spring)(Internet)

ELET 3132L. Digital Systems Laboratory. (1) Prerequisites: ELET 1231 and ELET 1231L with a grade of C or above and Junior standing in department. This laboratory course supports concepts and practices covered in ELET 3132 or permission of the department. This course covers for three (3) laboratory hours per week. (Fall,Summer)

ELET 3222. Electronics II. (3) Prerequisites: ELET 2121 and ELET 2121L with a grade of C or above and Junior standing in department. This course is a continuation of the study of solid state devices begun in ELET 2121. Topics include frequency response of single and multistage amplifiers, feedback and stability, linear and nonlinear operational amplifier circuits, and CMOS and BICMOS circuits with extensive utilization of circuit simulation software. This course meets for three (3) lecture hours per week. (Spring)(Internet)

ELET 3222L. Electronics II Laboratory. (1) Prerequisites: ELET 2121 and ELET 2121L with a grade of C or above and Junior standing in department. This laboratory course supports concepts and practices covered in ELET 3222. This
ELET 3232. Microcontroller Systems. (3) Prerequisites: ELET 2201 and ELET 2231. This course covers application and design of ARM (Advanced RISC Machine) systems. Topics include assembly and C language programming and an introduction to the control and interfacing of ARM based systems. Upon completion, students should be able to design, construct, program, verify, analyze and troubleshoot ARM assembly and C language programs and supporting hardware. This course meets for three (3) lecture hours per week. (Spring, Summer)

ELET 4133. Embedded Systems. (3) Prerequisites: ELET 2231 and ELET 3132. This course covers the external characteristics of digital and analog integrated circuits and their applications when interfaced to embedded digital systems. Design constraints and considerations due to device limitations and device selection based upon application requirements will be discussed. Upon completion, students should be able to design, program, verify, analyze, and troubleshoot hardware and software in embedded systems. This course meets for three (3) lecture hours per week. (On demand) (Internet)

ELET 4142. Power Electronics/Networks. (3) Prerequisites: ELET 2141, ELET 3222 and ELET 3222L. This course is an introduction to power electronic devices in electrical systems, including their characteristics, operation and application. It also introduces topics on transmission of electric power with emphasis on modeling of power network components and systems, power flow studies and calculations. This course meets for three (3) lecture hours per week. (Spring) (Internet)

ELET 4151. Communication Systems. (3) Prerequisites: ELET 3222, ELET 3222L, and ETGR 3171. This course covers basic principles and concepts underlying modern communication systems. Topics include systems, signals, modulations (AM, FM, PM, FSK, PSK, QAM, PCM), transmission, reception, cellular, caller ID, and networks. This course meets for three (3) lecture hours per week. (Fall) (Internet)

ELET 4151L. Communication Systems Laboratory. (1) (W) Prerequisites: ELET 3222, ELET 3222L, and ETGR 3171. Corequisite: ELET 4151 or permission of the department. This laboratory course supports concepts and practices covered in ELET 4151. This course meets for three (3) laboratory hours per week. (Fall) (Internet)

ELET 4152. Digital Signal Processing. (3) Prerequisite: ELET 3113. Discrete-time signals; discrete-time systems; Linear constant-coefficient difference equations; Periodic sampling; reconstruction from samples; changing the sampling rate; the z-transform; z-transform properties; transform analysis of linear time-invariant systems; digital filter design techniques; discrete Fourier Transform and the FFT algorithm. This course meets for three (3) laboratory hours per week. (Spring, Summer)

ELET 4191. Applied Project Management. (2) Prerequisite: MATH 1100 and Senior standing in department. Corequisite: ELET 4192. Statement of work, activity decisions, timelines, scheduling, and resource allocation methods. Techniques will be appropriate for large and small projects within commercial, academic, or non-profit organizations. This course meets for two (2) lecture hours per week. (Fall) (Internet)

ELET 4192. Senior Project I. (2) (W) Prerequisite: Senior standing in department. Corequisite: ELET 4191. This is the first of a two semester sequence in senior design. Students will utilize previous coursework to creatively investigate and produce solutions for a comprehensive practical engineering technology project. This course meets for two (2) lecture hours per week. Graded on a Pass/No Credit basis. (Fall) (Internet)

ELET 4223. Active Filters. (3) Prerequisites: ELET 3222 and ETGR 3171. This course involves the design, analysis, simulation and implementation of composite, cascaded and summation filters. Topics include bilinear transfer functions; cascade design with first-order circuits; biquad circuits; Butterworth, lowpass circuits; Butterworth bandpass circuits; the Chebyshev response; sensitivity; frequency transformations; highpass and band-elimination filters. This course meets for three (3) lecture hours per week. (Spring) (Internet)

ELET 4242. Control Systems. (3) Prerequisites: ELET 3113 and ETGR 3171. Automatic control system concepts, system modeling, control system components, state space model, transfer function model, time responses, poles and zeros, closed loop, reduction of multiple subsystems, stability analysis, Routh-Hurwitz, performance analysis, design techniques, root locus, Bode, Nyquist, PID, and MATLAB control tool box. This course meets for three (3) lecture hours per week. (Spring) (Internet)

ELET 4293. Senior Project II. (2) (O, W) Prerequisites: ELET 4191 with a grade of C or above and a passing grade in ELET 4192. This is the second of a two semester sequence in senior design. Students will incorporate Applied Project Management techniques into the capstone project identified in ELET 4192 to finalize project analysis, development and implementation. This course meets for two (2) lecture hours per week. (Spring, Summer)

ENGLISH (ENGL)

ENGL 1101/1102 or ENGL 1103 or their equivalents are prerequisites for all English courses at the 2000-level or above.

ENGL 1100. Supplemental Writing for English Language Learners. (3) Corequisite: ENGL 1101. Limited to students whose primary language is not
English who may need additional support while concurrently enrolled in a designated section of ENGL 1101. Does not count toward an English major or toward the General Education requirement. Students may not register for ENGL 1100 before taking the Department of English's placement test for persons whose primary language is not English. (Fall, Spring)

ENGL 1101. Writing and Inquiry in Academic Contexts I. (3) Writing is both the primary subject of inquiry and the primary activity. Students write, revise, edit and reflect on their writing with the support of the teacher and peers. Students also engage critically with the opinions and voices of others, as they are encouraged to understand how their writing can have an effect on themselves and their environments. As the primary subject of readings and discussion, writing is explored as it relates to different contexts, discourses, cultures and textual media. As students inquire into literacy, they understand their own writing and development with heightened awareness. Grades are derived primarily from portfolios that include work generated throughout the term.

ENGL 1102. Writing and Inquiry in Academic Contexts II. (3) Prerequisite: ENGL 1101. Students develop an extended inquiry project that integrates materials from varied sources and includes writing in multiple genres. Students write, revise, edit and reflect on their writing with the support of the teacher and peers. Students also immerse themselves in a conversation about a topic through reading, questioning, and process writing. Polished writing might assume the forms of presentations, reviews of research, essayistic arguments, or multi-media and web-based projects. Students learn to distinguish rhetorical contexts, practice different conventions, and develop positions in relation to research. They also adopt digital technologies to network, compose, and/or critique and disseminate their work. Grades are derived primarily from portfolios that include work generated throughout the term.

ENGL 1103. Accelerated College Writing and Rhetoric. (3) Prerequisite: Placement by the Department of English. Accelerated writing curriculum that fulfills the requirement for ENGL 1101 and ENGL 1102. (Fall)

ENGL 2014. Topics in Writing. (1-3) (W) Offers instruction and practice in special types of writing, such as research or legal writing, that are not included in other writing courses. In addition, some sections may be designed for students who need strengthening of composition skills, or may offer instruction in various aspects of effective writing. Not more than three hours of 2014 may be used toward the requirements for the English major (and those three hours may not be used toward fulfillment of the 12 hours of English language or composition required for licensure in English). The maximum hours of credit allowed for any student are six for ENGL 2015 or 2014, or for 2015 and 2014 together. (On demand)

ENGL 2015. Topics in Writing. (1-3) (W) Offers instruction and practice in special types of writing, such as writing for publication (exclusive of poetry, drama, and fiction), which are not included in other writing courses. In addition, some sections may offer instruction in various aspects of effective writing. Not more than three hours of 2015 may be used toward the requirements for the English major (and those three hours may not be used toward fulfillment of the 12 hours of English language or composition required for licensure in English). The maximum hours of credit allowed for any student are six for ENGL 2015 or 2014, or for 2015 and 2014 together. (On demand)

ENGL 2050. Topics in English. (3) Designed to offer topics of general interest not included in other courses. May be repeated for additional credit with the approval of the English department. Does not count toward the English major. (Yearly)

ENGL 2051. Topics in English – Writing Intensive. (3) (W) Designed to offer topics of general interest not included in other courses. May be repeated for additional credit with the approval of the English department. Does not count toward the English major. Fulfills General Education writing goal. (On demand)

ENGL 2052. Topics in English – Oral Communication. (3) (O) Designed to offer topics of general interest not included in other courses. May be repeated for additional credit with the approval of the English department. Does not count toward the English major. Fulfills General Education oral communication goal. (On demand)

ENGL 2053. Topics in English – Writing Intensive & Oral Communication. (3) (O, W) Designed to offer topics of general interest not included in other courses. May be repeated for additional credit with the approval of the English department. Does not count toward the English major. Fulfills General Education writing goal and oral communication goal. (On demand)

ENGL 2090. Topics in English. (3) Special topics not included in other courses. May be repeated for credit as topics vary. Does not fulfill General Education writing goal. (On demand)

ENGL 2091. Topics in English – Writing Intensive. (3) (W) Special topics not included in other courses. May be repeated for credit as topics vary. Fulfills General Education writing goal. (On demand)

ENGL 2092. Topics in English – Oral Communication. (3) (O) Designed to offer topics of general interest not included in other courses. May be repeated for additional credit with the approval of the English department. Fulfills General Education oral communication goal. (On demand)

ENGL 2093. Topics in English – Writing Intensive & Oral Communication. (3) (O, W) Designed to offer topics of general interest not included in other courses. May be repeated for additional credit with the approval of the English department. Fulfills General Education writing goal and oral communication goal. (On demand)
ENGL 2100. Writing About Literature. (3) (W)
Combined practice in writing and study of literature, emphasizing writing processes including revision. Must be completed before ENGL 3100 and other English coursework. Restricted to English majors and minors and Education majors. (Fall, Spring, Summer)

ENGL 2101. Masterpieces of British Literature I. (3)
An introduction to British Literature written before 1800. The course also provides backgrounds in the society and culture of the Middle Ages, the Renaissance, and the Age of Reason. (On demand)

ENGL 2102. Masterpieces of British Literature II. (3)
An introduction to masterpieces of British Literature written since 1800. The course also provides backgrounds in the society and culture of the Romantic, Victorian, and Modern periods. (On demand)

ENGL 2103. Masterpieces of Modern Fiction. (3)
Readings in selected novels and short stories written since 1850. (On demand)

ENGL 2104. Major American Writers. (3)
Introductory readings in six to eight authors, approximately half from the 19th century and half from the 20th century, both poetry and prose. (On demand)

ENGL 2105. Introduction to Poetry. (3) (W)
Representative poems and poets, drawn from several literary periods that introduce students to several poetic genres, to varied treatments of universal themes (such as love, death, disappointment, joy), and to various ideas about poetic imaginations. (Yearly)

ENGL 2106. Film Criticism. (3) Introduction to film as an art form. Emphasis will be on the critical analysis of the form and the content of films with attention to issues of visual narrative, audience, cinematography, editing, acting, etc. (On demand)

ENGL 2108. Introduction to Drama. (3) (W)
Representative plays of the western world from the classical period to the modern period to introduce students to drama as literature, with consideration of staging, conventions of the theater, types of drama, and dramatic theory. (On demand)

ENGL 2114. Learning Community Seminar. (1)
Educational forum for activities of the English Learning Community. Students will devise and complete assignments relating to their cultural and intellectual activities. Enrollment restricted to students accepted into the English Learning Community; may be repeated for up to three units of credit. Does not count toward the English major. Graded on a Pass/No Credit basis. (Fall, Spring)

ENGL 2116. Introduction to Technical Communication. (3) (W) Technical Communication theory (such as organization, audience analysis, and editing) is taught in the context of oral and written formats, such as memoranda, proposals, reports, PowerPoint presentations, and includes formats and content common to students' own disciplines. (Fall, Spring, Summer) (Evenings)

ENGL 2126. Introduction to Creative Writing. (3) (W)
This course introduces students to creative writing, including both poetry and fiction writing, assuming little or no previous creative writing experience. (Fall, Spring, Summer)

ENGL 2127. Introduction to Poetry Writing. (3) An introductory course for those with little experience in reading, writing, and critiquing poetry. Students will read and discuss poetry in an anthology and also be responsible for writing poems based on assigned formal strategies or themes and for bringing them to a workshop setting for group critique. (On demand)

ENGL 2128. Introduction to Fiction Writing. (3) An introductory course for those with little experience in reading, writing, and critiquing fiction. Students will read and discuss short stories in an anthology and also be responsible for writing stories based on assigned formal strategies or themes and bringing them to a workshop setting for group critique. (On demand)

ENGL 2301. Introduction to African-American Literature. (3) Cross-listed as AFRS 2301.
Prerequisites: ENGL 1101 and 1102 or 1103, or departmental permission. Survey of the major periods, texts, and issues in African-American literature. Prerequisite to 4000 level African-American literature courses in English department. (Fall, Spring)

ENGL 2400. American Literature Survey. (3)
This course surveys the whole of American literature from the Colonial to the Modern period. Major authors and literary movements, as well as important ideas and cultural issues will be addressed. Required of English majors. (Fall, Spring, Summer) (Evenings)

ENGL 2401. British Literature Survey I. (3)
This course surveys British literature from the Medieval period to the Renaissance. Major authors and literary movements as well as important ideas and cultural issues will be addressed. Required of English majors. (Fall, Spring, Summer) (Evenings)

ENGL 2402. British Literature Survey II. (3)
This course surveys British literature from the Neoclassical to the Modern period. Major authors and literary movements as well as important ideas and cultural issues will be addressed. Required of English majors. (Fall, Spring, Summer) (Evenings)

ENGL 3050. Topics in English. (3) Special topics not included in other courses. May be repeated for credit as topics vary. Does not fulfill General Education writing goal. (On demand)

ENGL 3051. Topics in English – Writing Intensive. (3) (W) Special topics not included in other courses. May be repeated for credit as topics vary. Fulfills General Education writing goal. (On demand)
ENGL 3052. Topics in English – Oral Communication. (3) (O) Designed to offer topics of general interest not included in other courses. May be repeated for additional credit with the approval of the English department. Fulfills General Education oral communication goal. (On demand)

ENGL 3053. Topics in English – Writing Intensive & Oral Communication. (3) (O, W) Designed to offer topics of general interest not included in other courses. May be repeated for additional credit with the approval of the English department. Fulfills General Education writing goal and oral communication goal. (On demand)

ENGL 3100. Approaches to Literature. (3) (W) Introductory study and application of major critical approaches to literature, such as historical, psychological, mythological, and formalistic. Required of English major and minor. (Fall, Spring, Summer) (Evenings)

ENGL 3102. Literature for Young Children. (3) Critical study of literature for children under the age of eight, covering such topics as picture books, nursery rhymes, and books for beginning readers. (Spring)

ENGL 3103. Children’s Literature. (3) Critical study of various genres of children’s literature, such as realistic fiction, fantasy, and picture books. (Fall, Spring)

ENGL 3104. Literature for Adolescents (3) Critical study of literature intended for adolescent and pre-adolescent readers, as well as texts that deal with coming-of-age themes. (Fall, Spring)

ENGL 3132. Introduction to Contemporary American English. (3) Introduction to the study of word formation, the sound system, and the structure of contemporary American English, including characteristics and applications of traditional grammar. (Fall, Spring)

ENGL 3157. Twentieth Century Black American Literature: Prose. (3) Intensive study of selected black American 20th-century writers of fiction and nonfiction, beginning with the Harlem Renaissance. (Alternate years)

ENGL 3158. Gender and African-American Literature. (3) Cross-listed as AFRS 3158. Exploration of the intersection of gender and African-American literature, focusing on either Black women writers or Black male writers, or a combination in dialogue. (Alternate years)

ENGL 3159. African-American Poetry. (3) Cross-listed as AFRS 3159. Intensive study of African-American poetry, focusing on one period or traversing several. (Alternate years)

ENGL 3852. Independent Study. (1-3) Prerequisite: Permission of the department. Individual investigations and appropriate exposition of the results. (Unless special permission is granted by the department chair, no more than six hours of 3852 may apply toward the English major.) (Fall, Spring, Summer)

ENGL 4002. Women and Literature. (3) Selected topics focusing on women and literature, such as images of women, women as writers, and women as literary critics. With permission of the English department, may be repeated for credit as topics vary. (However, only six hours may be used for the requirements for the English major.) (On demand)

ENGL 4008. Topics in Advanced Technical Communication. (3) Prerequisites: ENGL 2116 and COMM 1101. Exploration, both theoretically and practically, of the interrelation of written, oral, graphic, and digital communication within technical rhetorical contexts. May be repeated once for additional credit with the approval of the English department. (On demand)

ENGL 4050. Topics in English. (3) Special topics not included in other courses. May be repeated for credit as topics vary. Does not fulfill General Education writing goal. (On demand)

ENGL 4051. Topics in English – Writing Intensive. (3) (W) Special topics not included in other courses. May be repeated for credit as topics vary. Fulfills General Education writing goal. (On demand)

ENGL 4052. Topics in English – Oral Communication. (3) (O) Designed to offer topics of general interest not included in other courses. May be repeated for additional credit with the approval of the English department. Fulfills General Education oral communication goal. (On demand)

ENGL 4053. Topics in English – Writing Intensive & Oral Communication. (3) (O) Designed to offer topics of general interest not included in other courses. May be repeated for additional credit with the approval of the English department. May be used as an elective toward the English major. Fulfills General Education writing goal and oral communication goal. (On demand)

ENGL 4090. Major Authors. (3) The works, ideas, and life of one to three significant authors. With permission of the English department, may be repeated once for credit as long as different authors are considered. (On demand)

ENGL 4102. Classics in British Children’s Literature. (3) Focuses on pivotal works in the history of British and British Colonial Children’s literature. (Fall)

ENGL 4103. Classics in American Children’s Literature. (3) Focuses on pivotal works in the history of American Children’s literature. (Fall)

ENGL 4104. Multiculturalism and Children’s Literature. (3) Focuses on works that represent one or more kinds of cultural, ethnic, or social diversity of the United States and other national literatures. (Fall)
ENGL 4111. Ancient World Literature. (3) Readings of ancient world literature, in English translation. (On demand)

ENGL 4112. Modern World Literature. (3) Readings in modern world literature, in English and in English translation. (On demand)

ENGL 4114. Milton. (3) A study of the major poems and selections from the minor works of Milton. (On demand)

ENGL 4116. Shakespeare’s Early Plays. (3) A study of 10 representative plays from the comedies, histories, and tragedies written 1590-1600. (Yearly)

ENGL 4117. Shakespeare’s Late Plays. (3) A study of 10 representative plays from the period 1600-1611, including the late tragedies and tragi-comedies. (Yearly)

ENGL 4118. British Renaissance Literature. (3) Readings of prose, poetry, and/or drama from the Renaissance period in England (16th and 17th centuries), which may include works by men and women writers such as Shakespeare, Milton, Donne, Lanier, Wroth, and others. (On demand)

ENGL 4120. Romantic British Literature, 1785-1832. (3) Literature from the Romantic period, with emphasis on the works of specific writers, which may include works by men and women writers such as Wordsworth, Blake, Coleridge, Wollstonecraft, Austen, and Smith. (On demand)

ENGL 4121. British Literature of the Restoration and 18th Century. (3) Representative poetry, prose, and/or drama from this period in British literary history, which may include works by men and women writers such as Pope, Dryden, Sheridan, Behn, Centlivre, and others. (On demand)

ENGL 4122. British Victorian Literature (3) Readings in British literature during the Victorian period in England. Texts studied may include selections from poetry, prose, and/or drama and men and women writers such as Dickens, Browning, Tennyson, Bronte, Eliot, and Wilde. (On demand)

ENGL 4123. Modern British Literature. (3) Representative British literary texts (poetry, prose, and/or drama) that embody the cultural and literary developments of the 20th century. (On demand)

ENGL 4132. British Drama to 1642, Excluding Shakespeare. (3) A survey of late-medieval and Renaissance drama in England. (On demand)

ENGL 4139. Early American Literature. (3) Origins of American literature, from Colonial times to Washington Irving, including such authors as Edwards, Taylor, Franklin, Crevecoeur, Frenneau, Brown. (On demand)

ENGL 4140. American Literature of the Romantic Period. (3) Important writers and ideas of the period of American romanticism, from Irving through Whitman, including such authors as Poe, Emerson, Thoreau, Hawthorne, Melville. (On demand)

ENGL 4141. American Literature of the Realist and Naturalist Periods. (3) Important writers and ideas of American literature, from Whitman through the period of World War I, including such authors as Dickinson, Twain, Howells, James, Crane, Dreiser, Frost. (On demand)

ENGL 4142. Modern American Literature. (3) Important writers and ideas of modern American literature, including such authors as Faulkner, Eliot, Hemingway, Cummings. (On demand)

ENGL 4145. Literature of the American South. (3) Selected works of Southern writers that reflect literary and cultural concerns from Colonial times to the present, including such authors as Poe, the early humorists, local color writers, Chopin, Faulkner, Warren, O’Connor, Welty. (Yearly)

ENGL 4150. Poetry. (3) Poetry written in English, focusing on a particular period, nationality, or topic. With permission of the English department, may be repeated once for credit as topics vary. (On demand)

ENGL 4151. Drama. (3) Drama written in English, focusing on a particular period, nationality, or topic. With permission of the English department, may be repeated once for credit as topics vary. (On demand)

ENGL 4153. Fiction. (3) Fiction written in English, focusing on a particular period, nationality, or topic. With permission of the English department, may be repeated once for credit as topics vary. (On demand)

ENGL 4155. Pan-African Literature. (3) Introduction to significant Pan-African literature, emphasizing the oral tradition, selected works of major authors in the Caribbean and Africa, and the relationships of these traditions to American, British and other literary traditions. Works not originally written in English will be studied in translation. (On demand)

ENGL 4161. Modern English Grammar. (3) A study of the structure of contemporary English, with an emphasis on descriptive approaches. (On demand)

ENGL 4165. Language and Culture. (3) Readings in and discussion and application of the interrelationships between language and culture, including basic introduction to contemporary American dialects and to social contexts of language. (Yearly)

ENGL 4167. The Mind and Language. (3) Introduction to the study of the mind from a linguistic perspective. Topics include language growth and loss, language deficits, modularity and hierarchical processing, the interaction of cognitive and linguistic faculties, parsing/processing strategies and limitations, and applications such as therapy, forensics, computing, teaching. (Alternate years)

ENGL 4180. Theories of Technical Communication. (3) Prerequisite: ENGL 2116. Rhetorical,
psychological, and anthropological theories that underscore the interrelations of written, graphic, and digital communication within technical, rhetorical contexts. (Fall)

**ENGL 4181. Writing and Designing User Documents.** (3) Prerequisite: ENGL 2116. Researching and analyzing audiences to write publishable instructions. This includes the production, testing, and revision of tutorials, reference manuals, on-line documents, and digital media for users of computers and other technologies. (Spring)

**ENGL 4182. Information Design and Digital Publishing.** (3) Prerequisite: ENGL 2116. Theoretical and practical exploration of visual communication. By rhetorically integrating text and graphics, students will write and publish documents and online content for digital environments. (Fall)

**ENGL 4183. Editing Technical Documents.** (3) Prerequisite: ENGL 2116. Substantive editing, copyediting, project management, and editing in hardcopy documents and web and digital environments. (Spring)

**ENGL 4202. Writing Poetry.** (3) Prerequisite: ENGL 2126 or 2127, or permission of instructor. Further study of and practice in the writing of poetry within a workshop format. May be repeated once for credit with the permission of the English department. (Fall, Spring) (Evenings)

**ENGL 4203. Writing Fiction.** (3) Prerequisite: ENGL 2126 or 2128, or permission of instructor. This course provides further study of and practice in the writing of fiction within a workshop format. May be repeated once for credit with the permission of the English department. (Fall, Spring) (Evenings)

**ENGL 4204. Expository Writing.** (3) (W) Writing of essays, criticism, and various forms of exposition. (Fall, Spring) (Evenings)

**ENGL 4208. Poetry Writing Workshop.** (3) Prerequisite: ENGL 4202. Designed for advanced writers of poetry. Focuses primarily on student work and peer criticism of it. May be repeated once for credit with permission of department. (Yearly)

**ENGL 4209. Fiction Writing Workshop.** (3) Prerequisite: ENGL 4203. Designed for advanced writers of fiction. Focuses primarily on student work and peer criticism of it. May be repeated once for credit with permission of department. (Yearly)

**ENGL 4211. Chaucer and Medieval Literature.** (3) Readings that focus on the works of Chaucer, including The Canterbury Tales, and other works from the medieval period in England, which may include Troilus and Criseyde and various dramatic texts. (On demand)

**ENGL 4254. Teaching English/Communication Skills to Middle and Secondary School Learners.** (3) Prerequisite: Senior English major with a secondary education minor; senior middle grades major, or permission of the department. Approaches to the teaching of English, including recent theories and research related to writing and literary study, with special attention to technology. Designed primarily for teaching in grades 6-12. (Fall, Spring)

**ENGL 4260. History of the English Language.** (3) Origins and development of the English language, both spoken and written, from its earliest forms to contemporary usage. (Yearly)

**ENGL 4263. Linguistics and Language Learning.** (3) Readings in, discussions of, and application of linguistically oriented theories of language acquisition, directed toward gaining an understanding of language-learning processes and stages. (Alternate years)

**ENGL 4290. Advanced Creative Project.** (3) Prerequisite: ENGL 4208 or 4209, or permission of the instructor. The planning, writing, and polishing of a work of at least 20 pages of poetry or at least 40 pages of fiction or creative non-fiction by advanced undergraduate or graduate students with the guidance of a member of the department's creative writing faculty. The final work may be a single piece or a collection of pieces and will evolve under the supervision of the primary instructor. With permission of the department, students who took the course as undergraduates may repeat as graduate students. (On demand)

**ENGL 4400. Theory and Practice of Tutoring Writing.** (1-3) (W) Prerequisite: Permission of the instructor. Through supervised tutorial experience and seminars, this course introduces the student to current developments concerning composition and to a variety of methods for teaching English composition. This course is highly recommended for those planning to teach or those currently engaged in teaching. With permission of the English department may be repeated once for credit. (Fall)

**ENGL 4405. Literacy and Language.** (3) Exploration of how language and literacy can be effectively taught to adolescents. Topics include composing strategies and the effects of new media on literacy practices. (Fall, Spring)

**ENGL 4410. Professional Internship.** (3 or 6) Prerequisites: Permission of English Internship Coordinator. Restricted to juniors and seniors majoring or minoring in English or minoring in Technical/Professional Writing, who have at least a 2.5 GPA and have had a course in professional communication (e.g., journalism, technical communication, public relations, public relations lab, or mass media). Students work 8-10 hours (3 hours credit) or 16-20 hours (6 hours credit) per week in a placement arranged by the Internship Coordinator. May be repeated once for credit: only three credit hours may be applied to the English major; three additional hours may be counted as a University elective. (Fall, Spring, Summer)

**ENGL 4852. Independent Study.** (1-3) Prerequisite: Permission of department. Individual investigations
and appropriate exposition of the results. (Unless special permission is granted by the department chair, no more than six hours may apply toward the English major.) May be repeated for additional credit with approval of the Department of English. (Fall, Spring, Summer)

**ENGINEERING (ENGR)**

Courses must be completed to progress within three attempts including withdrawing from the course with a grade of W. Failure to progress in three attempts will result in suspension from the program.

**ENGR 1201. Introduction to Engineering Practices and Principles I.** (2) Corequisite: MATH 1241. An introduction to the different disciplines within engineering; the college’s computing system; academic, personal and professional development; teamwork; project planning; engineering design; engineering calculations; and oral and written communication skills within a multi-disciplinary format.

**ENGR 1202: Introduction to Engineering Practices and Principles II.** (2) Prerequisite: ENGR 1201 with a grade of C or above. Additional prerequisite for mechanical engineering majors: MATH 1241 with a grade of C or above. Corequisite: ENGR 1201 with permission of department. Applications in the disciplines of Civil, Electrical, Mechanical, and Systems Engineering using tools and techniques specific to the major. Emphasis on analytical and problem solving skills and understanding of the profession/curriculum.

**ENGR 1241. Engineering Analysis.** (3) Prerequisites: Engineering major and an appropriate score on the Mathematics Placement Test, MATH 1103 with a grade of C or above, or placement by the department. Elementary functions, derivatives and their applications in engineering problems, introduction to definite integrals in solving engineering problems. May not be taken for credit if credit for MATH 1241 has been given. (Fall, Spring)

Upper division engineering courses (3000 level and above) used to satisfy degree requirements within the College of Engineering are restricted to majors and minors of the College of Engineering.

**ENGR 3095. Leadership Academy Capstone.** (0) Prerequisite: Admission into the Leadership Academy program. Participants apply leadership, teamwork, ethical decision-making, communication, and strategic planning principles learned during prior semester Leadership Academy modules to a community-based service learning project. Implementation and evaluation of projects are approved by Leadership Academy staff and advisory board members. Graded on a Satisfactory/Unsatisfactory basis.

**ENGR 3290. Fundamentals of Engineering Review.** (1) Prerequisite: Senior standing. Review of the basic engineering and science material covered on the Fundamentals of Engineering examination, the first step toward professional licensure. Graded on a Pass/No Credit basis.

**ENGR 3295. Multidisciplinary Professional Development.** (1) Prerequisite: Senior standing or Junior standing per departmental requirements. A series of multidisciplinary and disciplinary seminars and activities designed to introduce students to basic concepts of professionalism in engineering. Topics include global, societal, and contemporary issues of current interest such as leadership, entrepreneurship, ethics, cultural diversity, and professional licensure.

**ENGR 3590. Engineering Cooperative Education and 49ership Experience.** (0) This course is required of Co-op and 49ership/service 49ership students during the semester they are working. Acceptance into the Experiential Learning Program by the University Career Center is required. Participating students pay a course registration fee for transcript notation (49ership and Co-op) and receive full-time student status (Co-op only). Assignments must be arranged and approved in advance. Course may be repeated; evaluation is Satisfactory/Unsatisfactory. Only open to undergraduate students; Graduate level students are encouraged to contact their academic departments to inquire about academic or internship options for credit. For more information, contact the University Career Center.

**ENGR 3670. Total Quality Systems.** (3) Prerequisite: Junior or Senior status and permission of instructor. An interdisciplinary approach to principles and practice in the applications of continuous quality improvement (CQI) and Total Quality Management (TQM). Classroom work on major applications, re-engineering processes; process mapping, personal effectiveness and time management; technical presentations; CQI tools, statistical process control, designed experimentation; management and planning tools, engineering economy, and case studies; assignments and projects in team building, communication, and group problem solving.

**ENGR 4090. Special Topics.** (1-4) Directed study of current topics of special interest. May be repeated for credit. (On demand)

**BUSINESS ENTREPRENEURSHIP (ENTR)**

**ENTR 2101. Introduction to Entrepreneurship.** (3) Prerequisite: Sophomore standing. This course will examine the foundations of entrepreneurial thinking from an interdisciplinary perspective. Students will gain an overview of how successful entrepreneurs learn about the marketplace, conduct financial/accounting analyses, and utilize management skills to develop entrepreneurial opportunities in a variety of disciplines including psychology, sociology, humanities, technology, engineering, and health care. Principles will be drawn from historical analysis, business, design, engineering, and technology. This course will involve guest speakers.
and could possibly be team taught (across different sections). (Fall, Spring)

ENTR 2102. Opportunities, Products, and Project Management. (3) Prerequisite: ENTR 2101 with a grade of C or above. An introduction to the first stage of creating an entrepreneurial venture: generating and evaluating ideas in a competitive environment; product development, design, and management; and the project management skills needed to keep the disparate venture activities progressing on schedule. Emphasis will be on real case studies and local entrepreneurs' experiences. (Fall, Spring)

ENTR 3101. Managing the Start-Up. (3) Prerequisite: ENTR 2102 with a grade of C or above. An introduction to financial, legal, and technological concepts for entrepreneurs. Emphasis will be on case studies and experience drawn from entrepreneurs, leveraging local entrepreneurs to the extent possible. Topics to be covered include planning for financial feasibility, measuring profitability, forecasting cash flows, monitoring ongoing financial performance, technology and infrastructure requirements, the alternative legal forms of business, and the importance of contracts. (Fall, Spring)

ENTR 3102. Managing Growth. (3) Prerequisite: ENTR 3101 with a grade of C or above. This course addresses the business resources and techniques that will face the entrepreneurial business as it begins operations and moves into the successful growth phase. The topics covered include networking and managing professional services, logistics and operations, marketing communications and distribution, and organizational design and management. (Fall, Spring)

ENTR 4101. Business Planning. (3) Prerequisite: ENTR 3102 with a grade of C or above. The capstone course designed as an experiential learning opportunity for prospective entrepreneurs pursuing a Certificate in Business Entrepreneurship. The course involves the application of entrepreneurship skills and knowledge through either working closely with the startup of a new venture to aid in the development of a business plan. (Fall, Spring)

ENTR 4102. Entrepreneurship Internship. (3) Prerequisite: ENTR 3102 with a grade of C or above. The Entrepreneurship internship will provide a meaningful work experience. The internship requires 150 hours of supervised employment. Internship proposals can be initiated by the student or by the company. Students should consult the Director of the Entrepreneurship Program well in advance of registration to discuss suitability and availability of positions. Proposal forms must be completed and approved prior to registration. This course cannot be repeated for credit or taken for credit at the same time or following any other internship for credit. (Fall, Spring)

ESCI 1101. Earth Sciences-Geography. (3) Basic geographical principles and processes in physical geography and the earth sciences: geographic locational methods, earth-sun relationships, earth radiation balance, atmospheric temperature and pressure, interpretation and simple forecasting of weather from mapped data, interpretation of soil-moisture and evapotranspiration balances, soil, climate systems, and biomes. (Fall, Spring) (Evenings)

ESCI 1101L. Earth Sciences-Geography Laboratory. (1) Prerequisite or corequisite: ESCI 1101. Experimental study and investigation of the basic principles and processes in physical geography and the earth sciences; geographic locational methods, earth-sun relationships, earth radiation balance, atmospheric temperature and pressure, interpretation and simple forecasting of weather from mapped data, interpretation of soil-moisture and evapotranspiration balances, soil, climate systems and biomes. One laboratory period of two hours per week. (Fall, Spring) (Evenings)

Note: Although the laboratory and lecture sections of ESCI 1101 are taught as separate courses, it is strongly recommended that students take ESCI 1101L concurrently with ESCI 1101. Students with scheduling problems or students not fulfilling the University science and technology requirements may take the lecture without the laboratory. Students fulfilling the University science and technology requirements must either: (a) Take ESCI 1101 and ESCI 1101L concurrently; or (b) Take ESCI 1101L in a semester subsequent to taking ESCI 1101.

ESCI 2000. Topics in Earth Sciences. (1-4) Treatment of major topical issues in Earth Sciences. May be repeated for credit as topics vary. (On demand)

ESCI 2010. National Parks: Science Behind the Scenery. (3) A discussion of the geological, environmental, and policy aspects of America's national parks, which preserve some of the finest landscapes and scenic beauty in the world. Students will learn about the geological processes that created the landscapes in Yellowstone, Yosemite, and the Grand Canyon, as well as many other parks and monuments. The role the parks play as protectors of endangered species, habitats, and undeveloped lands will also be discussed. (Fall)

ESCI 2030. Near-Space Balloon Exploration. (2) Students in this course will design, build, and launch their own near-space capsule on a weather balloon, 15-20 miles into the stratosphere at the very edge of space. Students learn about the composition and conditions of the atmosphere and near-space environment, how to engineer a vehicle for that environment, take pictures and meteorological data during the flight, track the capsule with GPS, and recover the capsule on a parachute. (Spring)
ESCI 2101. The Environmental Dilemma. (3) Nature, causes, and responses to major environmental problems. (Yearly)

ESCI 2200. Introduction to Earth Sciences Research. (3) Prerequisites or corequisites: ESCI 1101; GEOL 1200 and 1200L. Basic techniques common to research in all of the earth sciences. Research design and organization, utilization of literature resources, and the use of quantitative methods. (On demand)

ESCI 2210. Field Methods in the Earth Sciences. (4) Prerequisites: ESCI 1101-1101L; GEOL 1200-1200L; and ENGL 2116 or permission of instructor. Field techniques used in studies of geology, topography, and earth sciences. Skills related to the collection and presentation of scientific data emphasized. Three lecture hours, three hours of lab per week. Earth Sciences majors should take ESCI 2210 as soon as possible after completion of ESCI 1101-1101L and GEOL 1200-1200L. (Spring, Fall)

ESCI 3000. Selected Topics in Earth Sciences. (1-4) Prerequisite: ESCI 1101-1101L or GEOL 1200-1200L and permission of instructor. In-depth treatment of specific topics selected from one of the fields of the earth sciences. May be repeated for credit as topics vary. (On demand)

ESCI 3105. Oceanography. (3) Prerequisites: ESCI 1101 and GEOL 1200, or permission of instructor. Physical, chemical and geological aspects of the world’s oceans. Emphasis on oceanic exploration techniques, oceanic circulation, seawater chemistry, marine geology, and coastal systems. (On demand)

ESCI 3150. Natural Environments of North America. (3) Prerequisites: ESCI 1101 or GEOL 1200-1200L. Regional geomorphology and ecology of North America with emphasis on development, maintenance, and interaction of the geomorphic and ecological provinces. (On demand)

ESCI 3170. Environmental Quality Management. (3) Prerequisites: ESCI 1101-1101L. Selected methods of air and water resource analysis with emphasis on conceptual models and statistical techniques of environmental and risk assessment. (Fall)

ESCI 3180. Environmental Impact Analysis. (3) Prerequisites: ESCI and GEOL majors with junior or Senior standing. Environmental impact requirements and associated procedures, guidelines, and methods of assessing physical environmental impacts. Three hours per week of combined lecture and supervised field work leading to the preparation of an environmental impact statement for a locally proposed action. (On demand)

ESCI 3500. Earth Sciences Cooperative Education and 49ership Experience. (0) Enrollment in this course is required for the department’s earth sciences cooperative education and 49ership/service 49ership students during each semester that they are working. Acceptance into the Experiential Learning Program by the University Career Center is required. Participating students pay a course registration fee for transcript notation (49ership and co-op) and receive full-time student status (co-op only). Assignments must be arranged and approved in advance. Course may be repeated; evaluation is Satisfactory/Unsatisfactory. Only open to undergraduate students; Graduate level students are encouraged to contact their academic departments to inquire about academic or industrial internship options for credit. For more information, contact the University Career Center. (Fall, Spring, Summer)

ESCI 3501. Earth Sciences Cooperative Education Seminar. (1) This course is required of earth sciences cooperative education students in each semester following a work assignment for presentation of earth sciences reports on the co-op learning experience. (Fall, Spring, Summer)

ESCI 4000. Selected Topics in Earth Sciences. (1-4) Prerequisites: ESCI 1101-1101L, GEOL 1200-1200L, or permission of the instructor. In-depth treatment of specific topics selected from one of the fields of the earth sciences. May be repeated for credit as topics vary. (On demand)

ESCI 4005. Engineering Geology. (3) Prerequisites: GEOL 1200, 1200L, or permission of instructor. The application of geologic principles, techniques, and data to problems in the technology and use of earth materials. (On demand)

ESCI 4140. Hydrologic Processes. (4) Prerequisite: ESCI 1101-1101L or GEOL 1200-1200L. Atmospheric, soils, and geologic aspects of surface and ground water processes. Three lecture hours and one three-hour lab per week. (Fall)

ESCI 4155. Fluvial Processes. (4) Prerequisites: ESCI 1101-1101L or GEOL 1200-1200L. Hydrologic and geomorphic study of the transport of water and earth materials within stream systems. Erosion, mass wasting, open channel flow, sediment transport, flooding, stream channel morphology, morphometry of drainage basins, and related topics. Three lecture hours, three lab hours per week. (Fall)

ESCI 4160. Contaminant Transport. (3) Prerequisites: GEOL 1200, 1200L, ESCI 1101, 1101L, GEOL 4145, or permission of instructor. Development and application of equations describing mass and energy transport in the subsurface environment. Three hours lecture per week. (On demand)

ESCI 4170. Fundamentals of Remote Sensing. (4) Prerequisite: ESCI 1101-1101L or GEOL 1200-1200L, or permission of instructor. Physical fundamentals of remote sensing and overview of airborne and satellite systems operating in the visible, infrared, and radar regions, and a review of applications for resource exploration, environmental studies, land use and land cover analysis, and natural hazards. Three lecture hours and one three-hour lab per week. (Fall)

ESCI 4180. Digital Image Processing in Remote Sensing. (4) Prerequisite: ESCI 4170 or permission
COURSE DESCRIPTIONS

ESCI 4210. Soil Science. (4) Prerequisites: GEOL 1200, 1200L, ESCI 1101, 1101L, GEOL 3115, GEOL 3124, or permission of instructor. Study of soils, soil-forming processes and soil morphology with an emphasis on soils as they relate to geologic landscapes and surficial processes. Students will learn how to describe and interpret soils in the field. Three hours lecture, three hours lab per week with occasional field trips. (Fall)

ESCI 4222. Watershed Science. (3) Prerequisites: Earth Science Majors and M.A. Geography students: ESCI 4140 or 4155 or GEOL 4145; Biology Majors and M.S. Biology students: BIOL 4149 and permission of the instructor; Civil Engineering Majors and M.S.C.E. students: CEGR 3141 or 5144 and permission of the instructor; all others require the permission of the instructor. Examinations of the cycling of water and chemical elements in natural and perturbed watersheds with emphasis on linkages between the hydrologic and biogeochemical processes which control runoff water quality. Topics include runoff processes, evapotranspiration, nutrient export and stream, riparian and hyporheic zone hydrochemical dynamics. (Spring, Alternate years)

ESCI 4233. Geoenvironmental Site Characterization. (4) Prerequisites: Earth Sciences, Geology, and M.A. Geography Majors: ESCI 4140 or 4155. Others require permission of the instructor. Advanced field-based examination of hydrologic and geologic conditions in the southeastern United States within the context of current state and federal regulatory requirements and site characterization activities currently performed by professional environmental geoscientists. Topics include hydrologic investigation and water quality characterization, and geological and geophysical site investigations. (On demand)

ESCI 4400. Internship in Earth Sciences. (3-6) Prerequisite: Permission of the department. Research and/or work experience designed to be a logical extension of a student's academic program. The student must apply to the department for an internship by submitting a proposal which specifies the type of work/research experience preferred and how the internship will complement his or her academic program. The department will attempt to place the selected students in cooperating community organizations to complete specified research or work-related tasks which are based on a contractual arrangement between the student and community organization. The student can receive three to six hours credit, depending on the nature and extent of the internship assignment. (On demand)

ESCI 4600. Earth Sciences Seminar. (1-0) Prerequisites: ESCI 1101, 1101L, GEOL 1200, 1200L and Senior standing for Earth Sciences and Geology Majors or permission of the instructor. Advanced seminar series examining major historical and modern research themes in the Earth Sciences. Coursework consists of a series of independent and group oral presentations. The seminar meets weekly for two hours. Course may be repeated for credit as topic varies. (Fall, Spring)

ESCI 4800. Individual Study in Earth Sciences. (1-4) Prerequisite: Permission of the department and credit hours established in advance. Tutorial study or special research problems. May be repeated for credit as topics vary. (On demand)

CIVIL ENGINEERING TECHNOLOGY (ETCE)

ETCE 1104. Civil/Construction CAD Applications. (2) Prerequisite: ETGR 1103 and civil engineering technology or construction management major standing or permission of the department. This course introduces students to civil and construction applications of AutoCAD Land Desktop and/or other similar civil engineering survey and design oriented CAD applications. One hour of lecture and three hours of laboratory per week. (Spring)

ETCE 1121. Construction Methods. (3) An introduction to the basic construction methods and operations used on civil engineering projects. Topics include basic construction and civil engineering terminology, identification and selection of construction equipment and techniques, and an overview of the components and processes used in the construction of concrete, steel, and wood-framed structures. (Fall)

ETCE 1211. Surveying I. (3) Prerequisite or corequisite: MATH 1103. Corequisite: ETCE 1211L. An introductory field surveying and site planning course covering standards, units, and calibration of equipment, measurement of distance, elevation, angles, and analysis of systematic and random errors in the measurement, adjustments of measurements, weighting, and principle of least squares. Two hours of lecture per week. (Spring)

ETCE 1211L. Surveying I Laboratory. (0) Prerequisite or corequisite: MATH 1103. Corequisite: ETCE 1211. Laboratory supporting ETCE 1211. Three hours of laboratory per week. Graded on a Pass/No Credit basis. (Spring)

ETCE 1222. Construction Materials. (3) Corequisite: ETCE 1222L. Study of the behavior and physical properties of basic construction materials. Topics include mineral aggregates, Portland cement concrete, masonry, wood, asphalt concrete, metals, plastics, and other materials. Two hours of lecture per week. (Spring)

ETCE 1222L. Construction Materials Laboratory. (0) Corequisite: ETCE 1222. Laboratory supporting ETCE 1222. Three hours of laboratory per week. Graded on a Pass/No Credit basis. (Spring)

ETCE 2112. Construction Surveying and Layout. (3) Prerequisites: CMET 1211 and ETCE 1104.
Corequisite: ETCE 2112L. An intermediate surveying and site-planning course covering plane survey, design and layout of horizontal and vertical curves, direction and traversing, design of site plant, control of grading, and global positioning system. Two hours of lecture per week. (Fall)

ETCE 2112L. Constructions Surveying and Layout Laboratory. (0) Prerequisites: CMET 1211, ETGR 1103. Corequisite: ETCE 2112. Laboratory supporting ETCE 2112. Three hours of laboratory per week. Graded on a Pass/No Credit basis. (Fall)

ETCE 2410. Introduction to Environmental Engineering Technology. (3) Prerequisites: MATH 1103 and ETGR 2101 with a grade of C or above. This course is designed to serve as an introduction to environmental engineering technology. The course will provide an overview of the environmental field to include laws and regulations, water quality, hydraulic and hydrologic fundamentals, water and wastewater treatment, groundwater contamination, and solid waste management. (Spring)

Upper division engineering courses (3000 level and above) used to satisfy degree requirements within the College of Engineering are restricted to majors and minors of the College of Engineering:

ETCE 3131. Foundations and Earthwork. (3) Prerequisite: ETGR 2102 or AAS degree. Study of basic design and construction of foundations. Background theories are generally introduced in concise forms as formulas or charts. Emphasis on practical aspects of foundation design and earthwork construction. (Fall)

ETCE 3131L. Soil Testing Laboratory. (1) (W) Prerequisite or Corequisite: ETCE 3131. Laboratory designed to familiarize the student with the common laboratory soil tests and analysis procedures with emphasis on the significance of the various tests, the testing procedures and the detailed computations. Three laboratory hours per week. (Fall)

ETCE 3163. Structural Analysis and Design I. (3) Prerequisite: ETGR 2102. This course presents basic concepts and principles of structural analysis and design of structural steel, reinforced concrete, masonry products, and timber and engineered wood systems. Emphasis is placed on practical aspects of structural analysis and design to include beams, joists, rafters, columns, trusses, and elementary frames. (Fall)

ETCE 3163L. Structures and Materials Laboratory. (1) (W) Prerequisite or Corequisite: ETCE 3163. Laboratory designed to evaluate structural materials commonly encountered in the civil and construction environments. Basic beam, truss and frame experiments will be conducted. Standard laboratory and field tests for typical materials such as block, brick, asphalt, concrete, steel and timber will be performed. Three laboratory hours per week. (Fall)

ETCE 3242. Hydraulics & Hydrology. (3) Prerequisites: ETGR 2102, ETCE 2410, PHYS 1102, or AAS degree. A study of the fundamental principles of hydraulics and their application in engineering practice, including the fundamentals of fluid flow through orifices, tubes and pipes, in open channels, and over weirs, pump design, network analysis, and modeling. (Spring)

ETCE 3242L. Hydraulics Laboratory. (1) (W) Prerequisite or Corequisite: ETCE 3242. Laboratory designed to provide the student with an understanding of the apparatus, techniques, and procedures used to measure hydraulic fluid properties and to verify the fundamentals of fluid flow through orifices, tubes and pipes, in open channels, and over weirs. Three laboratory hours per week. (Spring)


ETCE 3271. Building Systems. (3) Prerequisites: ETCE 2410 and PHYS 1102. Basic theory and practical application of heating, ventilation, air conditioning, plumbing and electrical systems in construction. Study of National Fire and Plumbing Codes. (Spring)

ETCE 3271L. Building Systems Laboratory. (1) (W) Prerequisite or Corequisite: ETCE 3271. Laboratory exercises demonstrating the basic theory and practical application of heating, ventilation, air conditioning, plumbing and electrical systems in construction. Three laboratory hours per week. (Spring)

ETCE 4073. Special Topics – Civil Engineering Technology. (1-4) Prerequisite: Senior standing and permission of instructor. A study of new and emerging technical topics pertinent to the field of civil engineering technology. May be repeated for credit. (On demand)

ETCE 4143. Water and Wastewater Systems. (3) Prerequisite: ETCE 3242 and CHEM 1111 or CHEM 1251. Study of water supply, treatment, and distribution and liquid waste disposal systems. (Spring)

ETCE 4143L. Environmental Laboratory. (1) (W) Prerequisite or Corequisite: ETCE 4143. Laboratory on the analysis of water and sewage and problems related to environmental control. Three laboratory hours per week. (On demand)

ETCE 4165. Structural Steel Design. (3) Prerequisite: ETCE 3163. Design of beams and columns, floor framing, tensions and compression members, bolted and welded connections according to AISC specifications. (Fall)

ETCE 4251. Highway Design and Construction. (3)
Prerequisite: ETCE 2112 or ETCE 3131. Introduction to highway planning, economic considerations, and traffic engineering. Design and construction of modern highways including grade separations and interchanges. (Fall)

ETCE 4251L. Asphalt Mixtures Laboratory. (1) (W) Prerequisite or Corequisite: ETCE 4251. Study of physical properties of asphalt, of aggregates and their combinations, principles and practice in the design, construction and control of asphalt mixtures; laboratory tests for asphalts, aggregates, and mixture design, including specimen preparation and stability evaluation. Three laboratory hours per week. (On demand)

ETCE 4266. Reinforced Concrete Design. (3) Prerequisite: ETCE 3163. Design of rectangular beams, T-beams, columns, reinforced concrete floor systems, and reinforced concrete footings according to ACI code. Quality control of concrete and structural inspection. (Spring)

ETCE 4272. Capstone Project. (2) (O, W) Prerequisite: Senior standing in Civil Engineering Technology or permission of the department. Utilization of students' previous coursework to creatively investigate and produce solutions for a comprehensive civil engineering technology project. (Spring)

ETCE 4344. Applied Hydrology and Storm Water Management. (3) Prerequisite: ETCE 3242. Treatment of hydrologic principles, prediction of runoff, design of storm water systems and controls, and the application of best management practices. (On demand)

**Electrical Engineering Technology (ETEE)**

ETEE 1101. Electronics Lab I. (1) Prerequisite or corequisite: ELET 1111. Experiments that support the concepts and practices covered in ELET 1111. Three laboratory hours per week.

ETEE 1201. Electronics Lab II. (1) Prerequisite or corequisite: ETEE 1223 and ETEE 1213. Experiments that support the concepts and practices covered in ETEE 1223 and ETEE 1213. Three laboratory hours per week.


ETEE 1223. AC Circuit Analysis. (3) Prerequisite: ELET 1111. Corequisite: MATH 1103. This course introduces AC electricity with an emphasis on circuit analysis, measurements, AC principles, circuit analysis laws and theorems, components and test equipment operation.

ETEE 2101. Electronics Lab III. (1) Prerequisite or corequisite: ETEE 2113. Experiments that support the concepts and practices covered in ETEE 2113 (Electronic Devices): Introduction to semiconductor based devices with an emphasis on analysis, selection, biasing and applications in power supplies, small signal amplifiers, and switching and control circuits. Three laboratory hours per week.

ETEE 2113. Electronic Devices. (3) Prerequisite: ETEE 1223 and MATH 1103. This course is an introduction to semiconductor-based devices such as diodes, bipolar transistors, FETs, thermistors, and related components. Emphasis is placed on analysis, selection, biasing, and applications in power supplies, small signal amplifiers, and switching and control circuits.

ETEE 2122. Electronic Drafting and Design. (2) Prerequisite: ETEE 1223. Corequisite: ETEE 2113. This course introduces computer-aided drafting (CAD) with an emphasis on application in the electronics field. Topics include electronics industry standards (symbols, schematic diagrams, layouts); drawing electronic circuit diagrams; electronic drafting practices and components such as resistors, capacitors, and ICs. Topics include editing, screen capturing, and cutting/pasting into reports.

ETEE 2133. Digital Circuits II. (3) Prerequisite: ETEE 1213. Design and application of sequential circuits including flip-flops, counters, registers, and their interactions as state machines. Introduction to the architecture of microprocessors. Introduction to digital signal processing.

ETEE 2143. Introduction to Electrical Power Systems. (3) Prerequisite: ETEE 1223. This course covers the basic principles of electric power systems, including transmission lines, generator and transformer characteristics, and fault detection and correction. Emphasis is placed on circuit performance analysis in regards to voltage regulation, power factor, and protection devices.

ETEE 2201. Electronics Lab IV. (1) Prerequisite or corequisite: ETEE 2213. Experiments that support the concepts and practices covered in ETEE 2213 (Introduction to Microprocessors): Introduction to microprocessor architecture and microcomputer systems including memory and input/output interfacing, assembly language programming, bus architecture, bus cycle types, I/O systems, memory systems, and interrupts.

ETEE 2213. Introduction to Microprocessors. (3) Prerequisite: ETEE 1213. This course introduces microprocessor architecture and microcomputer systems including memory and input/output interfacing, assembly language programming, bus architecture, bus cycle types, I/O systems, memory systems, and interrupts.

ETEE 2233. Introduction to Computer Networks. (3) Prerequisite: ETEE 1213. The fundamentals of local area networks and their operation in business and computer environments is covered, including the characteristics of network topologies, system hardware
ETEE 2243. Introduction to Control Systems. (3)
Prerequisites: ETEE 1213 and ETEE 1223. The fundamental concepts of control, systems, sensors, actuator, and associated peripheral devices are covered, including rotating machine theory, ladder logic, electromechanical and solid state relays, motor controls, pilot devices, and PLC (programmable logic controllers), programming and networking.

Upper division engineering courses (3000 level and above) used to satisfy degree requirements within the College of Engineering are restricted to majors and minors of the College of Engineering.

ETEE 3124. Analysis of Linear Networks II. (4)
Prerequisite: ETEE 3133 with a grade of C or above. Corequisite: ETGR 3171. Circuit analysis utilizing network theorems and techniques in the frequency domain. 2nd order responses. Two port network analysis and transfer functions. Bode plots; transformers and filter applications; introduction to Fourier analysis. Application of simulation software for circuit analysis.

ETEE 3133. Analysis of Linear Networks I. (3)
Prerequisite: ETEE 1223 or AAS degree. Corequisites: MATH 1121 or ETGR 3171 and Junior standing in ET department. Resistive circuits; current and voltage sources; Kirchoff’s laws, network theorems, RC and RL circuits; waveform analysis and synthesis; time domain circuit analysis; 1st order natural and forced responses; Laplace Transform fundamentals. Circuit transformations. Intro to frequency domain circuit analysis. Application of simulation software for circuit analysis.

ETEE 3133. ELET Laboratory V. (1) (W)
Corequisites: ETEE 3133 and ETEE 3183. Experiments which support concepts and practice covered in ETEE 3133 and ETEE 3183. Three laboratory hours per week.

ETEE 3124. ELET Laboratory VI. (1) (W)
Corequisite: ETEE 3124. Experiments with support concepts and practice covered in ETEE 3124. Three laboratory hours per week.

ETEE 3183. Digital Logic Design. (3) Prerequisite: ETEE 1213 or AAS degree and Junior standing in ET department. Design of combinational and sequential digital logic circuits. Minimization methods and state assignment techniques. Circuit implementation using MSI, LSI, and programmable circuits. Introduction to computer architecture.

ETEE 3211. Active Networks I. (3) Prerequisite: ETEE 3214 with a grade of C or above and ETGR 3171. Rectifiers; amplifiers analysis; transistor biasing; small signal models; feedback amplifier analysis; amplifier frequency response.

ETEE 3212. Active Networks II. (3) Prerequisite: ETEE 3211 with a grade of C or above. Amplifier frequency response (continued); feedback amplifier frequency response; operational amplifiers and applications.

ETEE 3213. Industrial Electronics. (3) Prerequisite: ETEE 3214. Prerequisite or corequisite: ETEE 3211. Power diodes, bipolar power transistors, thyristors, power MOSFET’s and their circuit applications to industrial problems.


ETEE 3222. Automatic Controls. (3) Prerequisite or corequisite: ETEE 3212. Automatic control concepts; mathematical models; control system components; transient and frequency response; control system design.

ETEE 3230. Electronic Communications. (3) Prerequisites or corequisites: Senior status in ET or permission of department. This course covers basic principles and concepts of modern communication systems. Topics include systems, signals, modulations, transmission, reception and networks. (On demand)

ETEE 3240. Fiber Optics Systems. (3) Prerequisites or corequisites: Senior status in ET or permission of department. Introduction to optical fiber communications systems. Review of ray and wave optics. Fundamentals of amplitude, frequency, and digital modulation/demodulation. Optic fiber waveguides. Light sources and detectors. Components, systems, and networks. (On demand)


ETEE 3261. Industrial Instrumentation. (3) Prerequisites: ETEE 3214. Pneumatic and electrical sensors and transducers used for measuring physical processes, such as temperature, pressure, and flow rate; selection criteria; standards and calibration. (On demand)

ETEE 3275. Integrated Circuit Applications. (3)
Prerequisites: ETEE 3183. Study of the external characteristics of digital and analog integrated circuits. Applications of these circuits in digital systems. Design constraints and considerations due to device limitations. Device selection based upon application requirements.

ETEE 3281. Computer Design. (3) Prerequisite: ETEE 1213 or AAS degree and Junior standing in ET department. Corequisite: ETEE 3183. Organization and design approaches for computer network systems. LAN design, hardware and software considerations, network operating systems, TCP/IP fundamentals.

ETEE 3284. Design of Real-Time Systems. (3) Prerequisite: ETEE 3285. Prerequisite or corequisite: ETEE 3281. Characteristics and applications of real-time computer systems, especially as applied to process control, monitoring, and data collection; the computer as a part of the total system; programming for real-time applications; reliability and maintainability; effects of downtime. (On demand)

ETEE 3285. Assembly-Language Programming. (3) Prerequisite: ETEE 1213 or AAS degree and Junior standing in ET department. Corequisite: ETEE 3183. Programming methodology and assembly language programming for the MC6800 series microprocessors.

ETEE 3286. Microcomputer Applications. (3) Prerequisite: ETEE 1213 or AAS degree and Junior standing in ET department. Applied programming of microcomputers for engineering applications using Java. Object-oriented program design methods, Graphical user interfaces for data input and output, computer graphics, and computer animation.

ETEE 3641. Senior Design Project. (1) (O, W) Prerequisite: Senior standing in Electrical Engineering Technology or permission of the department. A senior design project with a topic agreed to by student and instructor. Course builds upon technology coursework and professional topics seminar. Topics include project planning design, construction, test documentation, and oral presentation of results.

FIRE SAFETY ENGINEERING TECHNOLOGY (ETFS)

ETFS 1120. Fundamentals of Fire Protection. (3) This course is an introduction to the relevant issues one would encounter upon entering a career in fire protection. The course is an overview of many areas including fire protection career opportunities, history of public fire protection, general chemistry and physics of fire, codes and ordinances and fire protection systems and equipment.

ETFS 1232. Fire Protection Hydraulics and Water Supply. (3) Provides a foundation of theoretical knowledge in order to understand the principles of the use of water in fire protection and to apply hydraulic principles to analyze and to solve water supply problems.

ETFS 1252. Fire Protection Law. (3) Provides information about potential legal liabilities encountered every day by fire, safety and emergency personnel. Explains how to research, read and understand various statutes, regulations & cases. Actual cases are presented in detail and followed by explanations that identify the most important issues facing emergency & safety personnel.

ETFS 2124. Fundamentals of Fire Prevention. (3) This course provides a fundamental overview of the history and philosophy regarding fire prevention. Class will investigate the organizational and operational aspects of a fire prevention bureau including the use of fire codes, identification and correction of fire hazards, and the relationships of fire prevention with built-in fire protections systems, fire investigation, and the positive effects of fire and life-safety education.

ETFS 2126. Fire Investigation. (3) This course covers investigation into various types of fires: structure, wildland, automobile, fabric, and chemical. Topics include fire chemistry and physics, scene analysis, case analysis, arson, the new generation of petroleum products, post-flashover patterns of damage, misuse of post-fire indicators, and documentation.

ETFS 2132. Building Construction for Fire Protection. (3) Studies the components of building construction that relate to fire and life safety. The focus of this course is on fire fighter safety. The elements of construction and design of structures are shown to be key factors when inspecting buildings, preplanning fire operations, and operating at emergencies.

ETFS 2144. Fire Protection Systems. (3) Provides information relating to the features of design and operation of fire detection and alarm systems, heat and smoke control systems, special protection and sprinkler systems, water supply for fire protection and portable fire extinguishers.

ETFS 2230. Hazardous Materials. (3) This course focuses on the basic knowledge required to evaluate the potential hazards and behavior of materials considered hazardous. The course examines the reasons for chemical behavior of hazardous materials and is designed to improve decision making abilities when hazardous materials are encountered in the workplace or at an emergency scene.

ETFS 2264. Fire Behavior and Combustion. (3) Explores the theories and fundamentals of how and why fires start, spread, and are controlled.

ETFS 2264L. Fire Behavior and Combustion Laboratory. (1) Laboratory experiments and hands-on computer simulations to illustrate the concepts presented in ETFS 2264.

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ETFS 3103. Principles of Fire Behavior. (3) Fundamental principles of fire chemistry and physics, and mechanisms that control enclosure fires. Topics include basic principles of fluid mechanics, thermodynamics, heat transfer, and combustion as far as those subjects relate to fire dynamics; ignition of liquids and solids; flame spread over liquid and solid surfaces and through porous fuel beds; burning rate; diffusion flames and plumes; combustion products; and compartment fires.

ETFS 3113. Building Fire Safety. (3) (W) Construction standards and codes to ensure acceptable levels of fire safety in buildings. Topics include anatomy of building construction, building construction features affecting fire performance, fundamentals of reading plans and specifications, the traditional code approach to passive fire protection, trade-offs between active and passive fire protection, concepts of rational fire design for structural members, and performance-based fire design as an alternative to traditionally prescriptive codes.

ETFS 3123. Industrial Hazards and Electricity. (3) Typical industrial hazards encountered including: compressed gasses, chemicals, bio-toxins, radiation sources, boilers and ovens. Introductory concepts and methods of analysis of AC & DC circuits, electrical switchgear, and rotating machinery. Compliance & reporting issues in an industrial setting. Safety procedures and safety equipment will also be discussed in regards to working as a fire safety engineer.

ETFS 3124. Risk Management for the Emergency Services. (3) An exploration of management and organizational principles with emphasis on controlling the risk associated with operations in the emergency services. In depth discussion of recognizing and controlling risk, personnel accountability, incident management systems and post-incident analysis as related to the emergency services. Critical analysis of private protection measures available to reduce loss potential.

ETFS 3144. Active Fire Protection. (3) Review of fire suppression, alarm, and smoke control systems. Topics include fixed and portable suppression systems, fire suppression agents and extinguishing mechanisms, fire detection devices, fire protective detection and signaling systems, smoke production in fires and principles of smoke movement and management.

ETFS 3183. Fire Safety Engineering Problem Analysis. (3) Prerequisite: ETFS 3103. Methods of solving fire safety engineering problems. Topics include enclosure fire radiation heat transfer calculations; calculations of vent flows in enclosure fires; estimating ignition, flame spread, and heat release rate properties of materials on the basis of experimental data; smoke filling of enclosures; and conduction heat transfer through fire protective materials.

ETFS 3233. Applied Fire Engineering Design and Analysis. (3) Prerequisite: ETFS 3103. Application of fire safety engineering technology in fire design and analysis of fires. Topics include computer modeling of compartment fires and emergency evacuation of buildings, structural fire design, sprinkler system design, performance-based design, and fire investigation and reconstruction.

ETFS 3400. Practicum. (1-4) Prerequisite: Must be classified as a junior, have a cumulative 2.2 GPA and the approval of FSET program faculty. This course is designed to allow students to participate in an approved applied practicum designed to allow theoretical and course-based learning in a supervised fire and/or safety related environment. Each practicum experience is individual and is arranged with a contract between the supervising faculty member, the student and the employer. Students must complete the practicum proposal form and identify a faculty member who will direct and evaluate the completed work. Practicum requires a weekly progress report as well as a final report and presentation to be graded by the supervising faculty member. May be repeated for up to a total of 4 hours. (On demand)

ETFS 3611. Professional Leadership Seminar. (1) (O, W) This course is to provide a framework of executive-level competencies by focusing primarily on areas and issues of personal effectiveness. The issue of command perspective vs. a first line fire fighter perspective are examined. The course includes case study analysis, role-playing and experiential activities. Students will develop desirable goals in the areas of their professional, personal community, and family life. Course topics include leadership, multiple roles, decision skills, influencing leaders, coaching and mentoring, and effective use of personal computing.

ETFS 3800. Independent Study. (1-3) Prerequisite: Must be classified as a junior, have a cumulative 2.2 GPA and the approval of FSET program faculty. This course is designed to allow students to take responsibility for the direction of their learning about a topic of interest to them. Each independent study is individual and is arranged with a contract between the supervising faculty member and the student. Students must complete the independent study proposal form and identify a faculty member who will direct and evaluate the completed work. Each hour of credit for this course should be comparable to what would be expected in the classroom – 15 hours contact time plus outside work or approximately 30 hours. The project is culminated with a final report and presentation. May be repeated for a total of 3 hours. (On demand)

ETFS 4123. Command and Control of Major Disasters. (3) This course focuses on the commanding officer’s responsibility while conducting major operations involving multi-alarm units and man-made disasters that may require interagency or jurisdictional coordination. Earthquakes, hurricanes, terrorism, hazardous materials releases, tornadoes, and floods are some of the topics covered. Emphasis is placed on rapid fireground decision making, advanced incident command, command and control, safety, personnel accountability, hazard preparedness,
equilibrium of particles and rigid bodies, distributed systems of forces, friction, and their applications. This course covers fundamentals of mechanics of deformable bodies. Topics of study include building loads, stress and strain, thermal deformation and stress, axial load, statically indeterminate axially loaded members, the principle of superposition, torsion, bending and shear stresses in beams, deflection of beams, transformation of stress and strain, Mohr’s circle, and stability and buckling of columns.

ETGR 2102. Applied Mechanics II. (3) Prerequisite: ETGR 2101 with a grade of C or above. This course covers fundamentals of mechanics of deformable bodies. Topics of study include building loads, stress and strain, thermal deformation and stress, axial load, statically indeterminate axially loaded members, the principle of superposition, torsion, bending and shear stresses in beams, deflection of beams, transformation of stress and strain, Mohr’s circle, and stability and buckling of columns.

ETGR 2106. AC & DC Circuits. (3) Prerequisites: PHYS 1102, MATH 1100. This course provides an introduction to AC and DC circuits. Simple series and series-parallel circuits will be used to illustrate applications of Ohm’s Law and Kirchhoff’s Laws. Power in DC resistive circuits will be discussed. Sine waves, complex numbers and phasors will be introduced to show their applications to analysis of AC circuits. Capacitors and inductors and their effects will be covered.

ETGR 2122. Technical Programming. (3) This course introduces computer programming using a high level programming language as related to engineering technology. Topics include input/output operations, sequence, selection, iteration, arithmetic operations, arrays tables, and pointers.

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ETGR 3000. Special Topics in Engineering Technology. (1-4) Prerequisite: Senior standing in Engineering Technology or permission of the department. Examination of specific new areas which are emerging in the various fields of engineering technology. The course builds upon the knowledge the students have gained from their engineering technology curriculum. May be repeated for credit. (On demand)

ETGR 3071. Engineering Technology Professional Seminar. (1) (W) Provides an introduction to the department of Engineering Technology, the William States Lee College of Engineering, and UNC Charlotte. Addresses professional issues such as ethics, corporate culture, and team work. Relies heavily on computer usage outside of class.

ETGR 3171. Engineering Analysis I. (3) Prerequisite: MATH 1121. Methods of solving engineering problems which involve the differentiation and integration of algebraic, trigonometric and logarithmic functions; use of integral tables.

ETGR 3222. Engineering Economics. (3) Principles of evaluating alternative engineering proposals. Compound interest formulas and applications, present worth, equivalent uniform annual value, rate of return, depreciation and depletion, economic feasibility of
ETGR 3223. Geometric Dimensioning & Tolerancing and Metrology. (3) Prerequisite: Knowledge of engineering graphics and machine shop practices. Study of the latest standard and methods available for the application of GD&T in interpretation and design of engineering drawings to assure form, fit and function while maintaining manufacturing efficiency. Study of and laboratory experiences with precision dimensional measuring instrumentation and machines. Two hours of lecture and three hours of laboratory per week. (On demand)

ETGR 3272. Applied Numerical Methods. (3) Prerequisites: ETGR 2122 and ETGR 3171. This course is designed to familiarize students with numerical methods for the solution of engineering problems using modern digital computer methods. This course will emphasize applying these techniques to both Mechanical and Civil Engineering Technology problems. This course will expose the student to problem solution techniques using commercially available tools, along with developing the student’s ability to construct specialty algorithms within the framework of these tools. (Fall, Summer)

ETGR 3643. Senior Design Project. (3) (O, W) Prerequisite: Senior Standing and permission of academic advisor. A capstone course in which individual students or teams propose and design a device, system, or process using senior level tools and abilities in their chosen disciplines; teamwork skills; instruction and writing practice in problem definition, design objectives, writing proposals and progress reports, creative problem solving, project planning, design evaluation, final formal technical reports and oral presentations.

ETGR 3695. Engineering Technology Practicum Seminar. (1) Prerequisite: ETMF 3490 or ENGR 3590. Required during the semester immediately following each work assignment for students enrolled in either ETMF 3490 or ENGR 3590; for presentation of engineering reports (verbal and oral) on work done the prior semester. May be repeated for credit.

ETGR 4100. Engineering Technology Interdisciplinary Industrial Senior Design Project I. (2) (O, W) Prerequisites for MET students: ETME 3143 and ETME 3213. Co-requisite or prerequisite for MET students: ETME 3164 or permission. Prerequisites for ELET students: Senior standing in department. Co-requisite for ELET students: ELET 4191. Prerequisites for CIET students: ETCE 4251. This is the first of a two semester sequence in senior design that utilizes industrial and university sponsored projects to expose engineering technology students in their final year of training to real world project execution and management, in addition to demonstrating abilities as developed by the coursework taken thus far. These projects are usually interdisciplinary in nature, involving students in groups that contain more than one engineering discipline. Projects are defined for the students by statements of work issued by the funding entities. In the first semester, students are exposed to proper project management and planning methodology, along with project documentation. This course meets for one (1) lecture hours and three (3) laboratory hours per week. (Fall)

ETGR 4200. Engineering Technology Interdisciplinary Industrial Senior Design Project II. (2) (O, W) Prerequisite: ETGR 4100 with a grade of C or above. Prerequisite for ELET students: ELET 4191 with a grade of C or above. This is the second of a two semester sequence in senior design that utilizes industrial and university sponsored projects. Students will incorporate Applied Project Management techniques into the capstone project identified in ETGR 4100, in addition to executing the design plans generated in ETGR 4100. This course meets for one (1) lecture hours and three (3) laboratory hours per week. (Spring)

INDUSTRIAL ENGINEERING TECHNOLOGY (ETIN)

Upper division engineering courses (3000 level and above) used to satisfy degree requirements within the College of Engineering are restricted to majors and minors of the College of Engineering.

ETIN 3103. Methods Analysis. (3) Analysis of work methods; a study of work measurement systems; regression techniques in formula construction; progress curves. (On demand)

ETIN 3123. Production Control Systems. (3) Prerequisite: statistics. Principles, analysis and design of production and inventory planning and control systems. Demand forecasting, production scheduling and control systems and introduction to CPM. (On demand)

ETIN 3133. Quality Control. (3) Principles and applications of quantitative methods of quality control to design and production processes. Introduction to design of experiments, process control charts, Pareto charts, and other quality analysis tools for both service and manufacturing industries. (On demand)

ETIN 3203. Plant Layout. (3) Prerequisite: ETIN 3103. Designing a plant or office with respect to material handling, machine location, auxiliary services, capital requirements, safety and personnel organization. (On demand)


ETIN 3243. Occupational Health Technology. (3) Methodology and philosophy of evaluating and monitoring the work environment for human stresses and toxic substances which affect the health of the worker. Topics include gases, vapors, fumes and dust; radio-activity hazards; occupational diseases; thermal stress; illumination and exhaust ventilation. (On demand)

UNC CHARLOTTE UNDERGRADUATE CATALOG 2011-2012
ETIN 3263. Human Factors. (3) Human capabilities and limitations affecting communications and response in man-machine systems. Physiological and psychological fundamentals; anthropometrics. (On demand)

MECHANICAL ENGINEERING TECHNOLOGY (ETME)

Upper division engineering courses (3000 level and above) used to satisfy degree requirements within the College of Engineering are restricted to majors and minors of the College of Engineering.

ETME 1101. Manufacturing Processes. (3) This course surveys and introduces common manufacturing processes and design for manufacture considerations. Students will be introduced to methods and equipment used to transform materials, and to the interdependency between geometry (form), materials properties, and processes and their effects on functionality of the manufactured artifact. Coverage will include processing of polymers, metals, and ceramics. The purpose of this course is to provide students the conceptual understanding of materials processes.

ETME 1104. Technical Drawing II. (2) Prerequisite: ETGR 1103. This course is a continuation of ETGR 1103, and introduces the student to advanced techniques of Computer Aided Drawing (CAD). Topics include three-dimensional wireframe, solid models, tolerancing methods, and rendering and generation of two-dimensional technical drawings from three-dimensional models. Upon completion of the course, students should be able to create, modify, and render three-dimensional models using modern computer aided drawing tools such as AutoCAD.

ETME 2101. Applied Materials. (3) Prerequisite: MATH 1103. This course introduces the student to materials and to the concept that materials are designed to provide the desired properties in the same way that the parts themselves are designed. The students will learn to understand that the processes we use to change materials into the geometries we want for also change the properties of the materials. The course intends to approach materials from a design and manufacturing perspective.

ETME 2102. Mechanisms. (3) Prerequisites: ETGR 1103, PHYS 1101. This course covers plane motion and devices used to generate plane motion. Topics include analysis of displacement, velocity, acceleration, gears, cams and other mechanical systems. (Spring)

ETME 2156. Machine Shop Practices. (2) Prerequisite: ETGR 1103. This course introduces students to machine shop techniques and designing for machining with a combination of lectures and projects. Students will learn design for machining guidelines, about specification of machining operations, and about shop measurement instruments and techniques. (Spring)

ETME 2156L Machine Shop Practices Lab. (1) See

ETME 2156. (Spring)

ETME 2202. Introduction to Parametric Modeling. (2) Prerequisites: ETGR 1104, ETGR 1201. This course introduces mechanical design techniques using computer based parametric modeling tools. Topics include feature based solid modeling, design constraints, use of geometric dimensioning and tolerancing (GD&T), assemblies, mechanisms, animations, and design documentation via technical drawings. Upon completion of the course, students will be able to define solid models parametrically and generate the complementary engineering drawings. (Fall)

ETME 3113. Dynamics. (3) Prerequisites: MATH 1121, ETGR 2101, and ETME 2102. The dynamic behavior of particles; translation, rotation and plane motion of a rigid body, the principles of conservation of energy and momentum.

ETME 3123. Strength of Materials. (3) Prerequisites: ETGR 2101 with a grade of C or above. Corequisite: MATH 1121. Stress-strain relationships resulting from direct loads, torsional loads and bending loads, and the results obtained from applying more than one of these loads simultaneously. Beam deflection and column loading.

ETME 3133. Fluid Mechanics. (3) Prerequisite: ETGR 2101. Fundamental principles of fluid mechanics. Topics include manometry, buoyancy, forces on submerged bodies, boundary layers, flow over surfaces, Bernoulli’s equation with applications, orifices, pipe losses and an introduction to hydrodynamics.

ETME 3143. Thermodynamics. (3) Prerequisites: MATH 1121. Fundamentals of thermodynamics including work and heat; classical approach to first and second laws of thermodynamics; ideal gas, entropy, reversibility, irreversibility, and study of various processes and cycles.

ETME 3151. Fluid Mechanics Laboratory. (1) (W) Prerequisite or corequisite: ETME 3133. Flow through conduits and in open channels, the experimental determination of fluid specific weights, viscosity and flash and fire points. Flow measuring devices such as orifices, venturi tubes, anemometers and pitot tubes. Laminar-turbulent flow and stability.

ETME 3152. Stress Analysis Laboratory. (1) (W) Prerequisite or corequisite: ETME 3123. Experiments illustrating stress-strain relationships in engineering materials and the use of brittle coating, photoelasticity and electrical-resistance strain gages.

ETME 3163. Instrumentation and Controls. (3) Prerequisite: ETGR 2106. Introduction to instrumentation for measurement and control of physical variables, with emphasis on electronic systems. Review of basic circuit analysis, electrical instruments, sensors and measurement principles and a survey of automatic controls from a systems point of view.

ETME 3223. Machine Design II. (3) Prerequisite: ETME 3213. A continuation of ETME 3213 with emphasis on new methods of problem solving and opportunities to integrate previously attained skills and knowledge into the design and optimization of small machine systems. (On demand)

ETME 3232. Senior Design Project I. (2) (W) Prerequisites: ETME 3113, 3133, and 3143. Corequisite or prerequisite: ETME 3213 or permission. First of a two-semester course sequence in which each student proposes and implements a senior-level design project which demonstrates abilities as developed by the coursework taken thus far. Each student uses project planning techniques to complete a project proposal and plans and makes substantial progress toward implementation in the first semester and completes the project, including design evaluation during the second semester. One class hour and three lab hours per week.

ETME 3233. Parametric Model Applications. (3) Prerequisite: ETME 2202. The use of parametric modeling software as a design and analysis tool using software such as Solid Works. Topics include advanced feature construction, creation of sheet metal components, configurations, linked information, and simulation methods. (On demand)

ETME 3242. Senior Design Project II. (2) Prerequisite: ETME 3232. Pre- or corequisite: ETME 3163. Second of a two-semester course sequence in which each student proposes and implements a senior-level design project which demonstrates abilities as developed by the coursework taken thus far. Each student uses project planning techniques to complete a project proposal and plans and makes substantial progress toward implementation in the first semester and completes the project, including design evaluation during the second semester. One class hour and three lab hours per week.

ETME 3244. Applied Heat Transfer. (3) Prerequisites: ETME 3133. Basic principles of heat transfer. Theory and applications of conduction, free and forced convection and radiation heat transfer. Heat exchangers and heat transfer measurement. (Fall)

ETME 3251. Instrumentation Laboratory. (1) (W) Prerequisite or corequisite: ETME 3163. Practice in the use of the various instrumentation devices studied in ETME 3163.

ETME 3252. Thermodynamics and Heat Transfer Laboratory. (1) (W) Prerequisite or corequisite: ETME 3143. Experimentation involving the fundamental principles of thermodynamics and heat transfer, as applied to internal combustion engines, steam engines, engine dynamometers, refrigeration and heat pumps, solar energy systems, and heat exchangers. Three laboratory hours per week.

ETME 3263. Fluid Power. (3) Prerequisite: ETME 3133. Mechanical and fluid power and the conversion of one to the other. Components and system efficiencies including those consisting of cascaded components. Performance evaluation of such hydraulic components as pumps, motors, valves and metering devices. Viscosity, bulk modulus, noise, optimum performance and system design will be considered. (On demand)

ETME 3273. Air Conditioning Systems. (3) Prerequisite: ETME 3143. Functions and operating characteristics of the major components of refrigerating machines, heat pumps, boilers, furnaces, solar collectors, heat exchangers, fans and pumps. Emphasis on sizing, economics and performance characteristics. Includes coverage of psychometric principles and fan and pump laws. (On demand)

ETME 3283. Modern Techniques in Energy Conservation and Utilization. (3) Prerequisite: ETME 3143 or permission of the instructor. Survey of current topics that may include solar energy, basic nuclear reactor technology, ammonia-based Rankine cycle, absorption refrigeration cycle, heat pump cycle, techniques for energy conservation in new construction and techniques for retrofitting existing energy utilization systems. (On demand)

ETME 4114. Applied Noise and Vibration Control. (3) Prerequisites: ETME 3113 and ETGR 3171, both with a grade of C or above. Laplace transformation method for solution of differential equations. Review of Newton’s 2nd Law of Motion. Solution to the free vibration problem both with and without damping. Introduction to acoustics and the one dimensional solution to the wave equation. Noise sources and mechanics of noise generation. System design for noise and vibration minimization. Methods of noise and vibration remediation. (Spring)

ETME 4245. Energy Management. (3) Prerequisite: Working knowledge of engineering economics and thermodynamics. Study of the understanding and implementation of energy management techniques. Emphasis is on energy efficiency applications in homes, businesses, large buildings and industry. Topics include energy auditing, energy management, energy cost analysis, energy & electric rate structures, lighting, HVAC systems, motors & drivers, boilers and steam systems, cogeneration, commercial and industrial applications and alternative energy sources. (On demand)

ETME 4250. Analysis of Renewable Energy Systems. (3) Prerequisite: ETME 3143 or permission of instructor. System analysis of renewable energy systems: well-to-wheels analysis, lifecycle energy and emissions, total cost, skill sets, methodologies and
tool kits needed to analyze various technologies on a consistent basis for a given application. Solar photovoltaics, wind energy, and fuel cell technologies will be covered. (On demand)

ETMF 4260. Hydrogen Production and Storage. (3) Prerequisite: PHYS 1101 or equivalent, ETME 3143 or equivalent, or permission of instructor. Basic concepts and principles of hydrogen technologies, including properties, usage, safety, fundamental understanding of hydrogen storage and production technologies. (On demand)

ETMF 4270. Fuel Cell Technology. (3) Prerequisite: ETME 3143 or equivalent or permission of instructor. Basic concepts and principles of fuel cell technologies, including chemistry, thermodynamics, electrochemistry, cell components and operating conditions fuel cell systems. (On demand)

**MANUFACTURING ENGINEERING TECHNOLOGY (ETMF)**

Upper division engineering courses (3000 level and above) used to satisfy degree requirements within the College of Engineering are restricted to majors and minors of the College of Engineering.

ETMF 3111. Manufacturing Processes. (3) Capabilities, limitations, and operating characteristics of families of machine tools and processes; casting, cutting, forming, joining, fabrication, and inspection machinery. (On demand)

ETMF 3113. Fundamental of Optics. (3) Prerequisite: algebra, trigonometry, plane geometry, and physics. A phenomenological introduction to applied optics; interactions between light and materials; properties of light, lenses and mirrors; simple optical systems; interference and diffraction; introductions to optical fibers, lasers, and holography. (On demand)

ETMF 3114. Thin Films and Optical Coatings. (3) Prerequisite: algebra, trigonometry, plane geometry, and physics. Vacuum technology, process controls, and special techniques used in the fabrication of thin films and the surfaces on which they are prepared; ways in which the optical tribological, and electronic industries utilize these structures in their products. (On demand)

ETMF 3131. Computer Integrated Manufacturing (CIM). (3) Automated manufacturing systems involving computers to monitor vendor input, process variations, component selection and routing, and test and evaluation of products. Applications involving integration of computer aided design (CAD) systems with computer aided manufacturing (CAM) systems. (On demand)

ETMF 3141. Industrial Applied Optical Systems. (3) Prerequisite: ETGR 3171. The applications of electro-optical technology in manufacturing and industrial systems is investigated. The fundamentals of applied optics, laser theory and semi-conductor optical devices will be reviewed. (On demand)

ETMF 3141L. Applied Optical Systems Laboratory. (1) Corequisite: ETMF 3141. Applications of electro-optical technology in manufacturing systems. Laboratory experiments demonstrating the use of lasers in the following manufacturing and industrial applications will be performed: cutting, machining, welding, measurement, marking, and control of processes; machine vision systems, sorting, process control, and real-time quality control; bar code systems; optical character recognition; optical data transmission. (On demand)

ETMF 3153. Optics Laboratory. (2) Prerequisite or corequisite: ETMF 3113. Experiments designed to illustrate properties of light and optical systems; reflection and refraction; lenses and lens systems; optical instruments; interference and diffraction; polarized light; laser principles. (On demand)

ETMF 3181. Digital Process Control. (3) Prerequisite: ETMF 3164. Applications and programming of microprocessors and programmable controllers for control of manufacturing processes. Interfaces with sensors, actuators, and computer systems. Includes classroom and laboratory demonstrations. (On demand)

ETMF 3211. Topics in Precision Manufacturing. (3) Senior seminar in selected areas of modern production of both conventional and miniaturized products; surface mount technology for electronic components; manufacturing in the clean room environment; metrology; manufacture of micro-miniature mechanical systems; vacuum coating and plating systems; systems for automatic process control and product inspection. (On demand)

ETMF 3251. CIM Laboratory. (2) (W) Experiments with computer control of processes, including numerical control and robotics. Measurement of physical variables for monitoring, controlling, and testing production operations. Application of microprocessors and micro computers to system control and status reporting. One class hour, three lab hours per week. (On demand)

ETMF 3490. Manufacturing Engineering Technology Practicum. (0) Directed individual study in a selected area of Manufacturing Engineering Technology exploring the practical applications and practices in industry or research. (On demand)

**EXERCISE SCIENCE (EXER)**

EXER 1099. Topics in Games/Exercise/Sports. (1-3) Specialized topics or innovations in games, exercise, and sports. May be repeated for credit as topics vary. (On demand)

EXER 1201. Foundations of Physical Conditioning. (2) Prerequisite: Must be a PKNS, ATRN or EXER major. The application and basic science of physical
training programs designed to improve and maintain physical fitness. (Fall, Spring)

EXER 1202. Weight Training. (1) Mechanics and programming of weight training. (Fall, Spring, Summer)

EXER 1203. Fencing. (1) The skills and rules of the sport of fencing. (On demand)

EXER 1204. Aerobic Fitness. (1) Exercise designed to develop and maintain physical fitness through aerobic activity to music. (Fall, Spring)

EXER 1206. Adaptive and Developmental Physical Education. (1) Prerequisite: permission of the instructor. Prescribed ameliorative exercises adapted to individuals with special needs, capacities and interests. (On demand)

EXER 1208. Walk, Jog, Run. (1) Principles of walking, jogging and running as modes for improving and maintaining cardiovascular health and physical fitness. (Fall, Spring)

EXER 1209. Step Aerobics. (1) Physical fitness training emphasizing aerobic conditioning via variations and combinations of step patterns on adjustable exercise benches. (Fall, Spring)

EXER 1210. Beginning Swimming. (1) For weak swimmers or nonswimmers. Instructin in water safety fundamentals, basic body positioning, maneuvering in water, and traveling skills, including basic strokes. (Fall, Spring)

EXER 1211. Intermediate Swimming. (1) Emphasis on gaining competency in at least four basic strokes and increasing endurance. Instruction in water safety, non-swimming rescues and lap swimming for fitness. (Fall, Spring)

EXER 1215. Aquatic Fitness. (1) Principles of safety and effectiveness of aquatic exercise as a mode for improving and maintaining general health and physical fitness. (Spring)

EXER 1220. Beginning Tennis. (1) The rules, basic skills and strategy. (Fall)

EXER 1222. Racquet Sports. (1) Basic skills, tactics, safety and rules of racquetball, court and table tennis, squash and badminton. (Spring)

EXER 1223. Beginning Badminton. (1) The rules, basic skills and strategy. (On demand)

EXER 1231. Introduction to Outdoor Adventure. (1) Prerequisites: successful completion of water safety test, permission of instructor, and freshman or sophomore standing only. Introduction to outdoor adventures through active participation in hikes, challenge courses, climbing wall, a solo experience, weekend trips, class discussions and written reflection. Participation in a Venture public trip required, individually selected from Venture's offerings for the semester. Special fee assessed for the trips. (Fall, Spring)

EXER 1232. Orienteering. (1) Introduction of off trail navigation with emphasis on the use of topographic maps, compasses, and route finding for wilderness travel; and the sport of competitive orienteering. Weekly class and 1 or 2 Saturday meets. (Spring) (Alternate years)

EXER 1233. Rock Climbing. (1) Introduction to rock climbing with emphasis on belaying and safety systems, climbing techniques, and the metaphorical and psychological aspects of climbing. Course will include: classroom sessions, use of indoor climbing wall, and weekend trips to outdoor climbing sites. A special fee will be charged to cover the costs of the weekend trips. (Fall, Spring)

EXER 1234. Canoeing. (1) Prerequisite: Successful completion of water safety test. Introduction to canoeing on flat water and white water emphasizing basic strokes, river reading, and boating safety. 10 classroom sessions and 2 weekend days. (Spring)

EXER 1235. Challenge Course Activities. (1) Immersion in a developmental small group team experience using a wide variety of challenge course activities (i.e., ropes course, trust exercises, group initiatives.) The focus is on expanding students’ self knowledge and understanding of how to work effectively with and lead others. (Spring)

EXER 1240. Beginning Golf. (1) The grip, stance, stroke, use and selection of clubs, rules and etiquette. (On demand)

EXER 1242. Archery. (1) The fundamental skills and selection, care and repair of equipment. (Fall, Spring)

EXER 1250. Volleyball. (1) The rules, fundamental skills and strategies. (On demand)

EXER 1262. Recreational Dance. (1) Social and partner dancing in a recreational setting. Basic knowledge of dance steps, dance music, style, leading/following techniques, plus current popular variations. (On demand)

EXER 2150. Introduction to Kinesiology. (3) Cross-listed as ATRN 2150. Prerequisite: Must be a PKNS major (open to all students during summer session). Introduction to the study of health fitness relative to philosophies, practices, work settings, trends, knowledge bases, skills and licensures. (Spring, Summer)

EXER 2212. Lifeguard Training. (3) Prerequisite: Swim 300 yards using a combination of front crawl and breast stroke continuously, swim 20 yards, dive to 10 feet and retrieve a dive brick, return. The knowledge and skills associated with lifeguarding.
Qualifying students will receive the American Red Cross Lifeguarding Certificate. There is a $10 course fee. (Fall, Spring)

EXER 2213. Water Safety Instruction. (3) Prerequisite: Competency in all basic swimming strokes. Techniques used in teaching people aquatic skills. Qualifying students will receive the American Red Cross Water Safety Instructor’s rating. There is a $10 course fee. (Spring)

EXER 2218. Scuba Diving Laboratory. (1) Corequisite: EXER 2219. Prerequisite: Junior, Senior, or Fifth-Year status and appropriate swimming ability to current scuba standards as prescribed by recognized scuba certifying organizations. The skills associated with the use of self-contained underwater breathing apparatus. There is a course fee. Open to all students during summer session. (Fall, Spring, Summer)

EXER 2219. Scuba Diving. (2) Corequisite: EXER 2218. Prerequisite: Junior, Senior, or Fifth-Year status. The science associated with the use of self-contained underwater breathing apparatus. Students who demonstrate the required knowledge and skills may request licensure as an open water SCUBA diver. Open to all students during summer session. There is a $60 course fee. (Fall, Spring, Summer)

EXER 2220. Advanced Scuba Diving. (1) Prerequisite: EXER 2219. The knowledge and skill required for underwater navigation, search and recovery, limited visibility diving and deep diving. There is a $35 course fee. (Fall, Spring, Summer)

EXER 2230. Wilderness Experience. (3) Corequisite: EXER 2231. This course is, in essence, a semester-long Outward Bound experience. It uses a variety of group experiences and adventure activities, including backpacking trips and challenge courses. The goal is a deeper understanding of oneself and of life itself through participation in an in-depth group experience. Significant attention is given to self-reflection. Field experiences during class and two weekend trips. (Fall)

EXER 2231. Wilderness Experience Lab. (1) Corequisite: EXER 2230. The lab will focus on the skills and knowledge necessary for planning and conducting one’s own backpacking trips. The lecture course (EXER 2230) uses the experiences from the lab to increase self knowledge. Two weekend backpacking trips are included. A special fee will be charged to cover the costs of the trips. (Fall)

EXER 2232. Wilderness Trip Leading. (2) Prerequisite: EXER 1231 or EXER 2230 or permission of instructor. The focus is on the broadly accepted skills and knowledge necessary for leading group adventure trips. Includes spring break backpacking trip(s) and class room sessions. After successful completion of this course students will be eligible to assist with Venture trips. A special fee will be charged to cover the costs of the trips. (Spring)

EXER 2234. Challenge Course Facilitation. (2) Prerequisite: EXER 1235 or EXER 2230 or permission of instructor. Focus on the basic skills and knowledge necessary for safely and effectively leading groups through challenge courses. In addition to class room sessions, weekend days at the Team Challenge Course and observation/apprenticing of actual Venture programs are required. (Spring)

EXER 2235. High Ropes Course Facilitation. (2) Prerequisite: EXER 1235, 2230 or 2234 or permission of instructor. Focus on both the technical and facilitation skills and the knowledge necessary for safely and effectively leading groups through high ropes courses. In addition to class room sessions, weekend days at the High Team Challenge Course and observation/apprenticing of actual Venture programs are required. (Fall)


EXER 2290. First Aid: Responding to Emergencies. (3) Cross-listed as ATRN 2290. Prerequisite: PKNS major. The knowledge and skills associated with being a first responder in case of injury or sudden illness. Qualifying students may receive certifications in: Responding to Emergencies-First Aid, CPR/AED for the Professional Rescuer, Preventing Disease Transmission (Bloodborne Pathogens Training) and Automated External Defibrillator (AED). Open to all students during summer session. There is a $20 course fee. (Fall, Spring, Summer)

EXER 2294. Care and Prevention of Athletic Injuries. (3) Cross-listed as ATRN 2294. Prerequisite or corequisite: EXER 2290 or ATRN 2290, and must be a PKNS major. Focus on health care competencies necessary for the prevention, emergency management and acute care of athletic-related injuries. Also provides an introduction to the role of the Certified Athletic Trainer in providing health to the physically active individual. (Spring)

EXER 2295. Care and Prevention of Athletic Injuries Laboratory. (1) Prerequisite: Must be a PKNS major. Corequisite: EXER or ATRN 2294. Focus on the psychomotor competencies and clinical proficiencies necessary for the prevention, emergency management and acute care of athletic-related injuries. There is a $30 course fee. (Spring)

EXER 2298. Applied Kinesiology. (3) Cross-listed as ATRN 2298. Prerequisite: a grade of C or above in BIOL 1273, BIOL 1273L, and PKNS major. The study of musculoskeletal anatomy and how it relates to normal function of the human body. (Spring)

EXER 2333. Baseball Through History and Playing. (3) This course first explores the socioeconomic climate of baseball’s origins from the 1800s to the present. The second half provides activity-oriented instruction that introduces softball’s emergence from baseball through basic skills, rules, and strategies of the game. (Spring)
EXER 3099. Movement Problems/Topics. (1-6) Prerequisite: permission of instructor. Movement problems/topics chosen by the student which relate to special areas of interest. May be repeated for credit with approval of instructor. (Fall, Spring, Summer)

EXER 3100. Organization and Administration of Exercise Science. (3) Prerequisite or corequisite: EXER 1201 and an EXER major. This course introduces principles and methods of leadership. Includes programming and participation, teaching methods, assessment, supervision, and leadership for various types of individual and group health and fitness programs. This course will also review basic exercise science principles and provide the student with the knowledge and skills to lead a wide variety of related activities. (Fall)

EXER 3103. Behavior Change for the Physically Active. (3) Prerequisite: must be an EXER major. To describe the influence of physical activity on mental health. Specific focus will be placed on the factors affecting behavior change with physical activity as well as various paradigms regarding behavior change. (Spring)

EXER 3152. Health and Safety Issues in Middle and Secondary Schools. (2) Prerequisites: Junior or senior status, EDUC 2100 and SPED 2100. Provides the pre-service teacher with the curricular content of health and safety in grades 6-12. Focuses on knowledge and behaviors conducive to health and safety. (Fall, Spring, Summer)

EXER 3200. Adaptive Physical Education. (3) Prerequisite: admission to teacher education program. Study of movement potentials and limitations of mentally and physically impaired children and teaching skills necessary to use movement as a medium for physical, social and emotional development. (On demand)

EXER 3228. Elementary Physical Activity. (2) Prerequisites: a grade of C or above in EDUC 2100, ELED 3120, SPED 2100, and acceptance into the Teacher Education Program. Integrating physical activity with elementary school curriculums. (Fall, Spring, Summer)

EXER 3229. Elementary Health Education. (2) Prerequisites: a grade of C or above in EDUC 2100, ELED 3120, SPED 2100, and acceptance into the Teacher-Education program. Orientation of the elementary specialist to content and curriculum appropriate for teaching health education in grades K-6. (Fall, Spring, Summer)

EXER 3233. Teaching Children Movement. (3) Prerequisites: EDUC 2100, 2110 and 2150. Study of movement and physical activities as applied in the elementary school program. Emphasis on teaching lessons at a local elementary school. (On demand)

EXER 3251. Human Movement. (3) Prerequisite: EXER 2251 or permission of instructor. Analysis and application of basic movement in specific sport, dance, gymnastic, and aquatic skills. (On demand)

EXER 3260. Nutrition for the Physically Active. (3) Cross-listed as ATRN 3260. Prerequisite: EXER or ATRN major. Introduction to principles and concepts of nutrition and how dietary practices affect health and disease. (Fall)

EXER 3280. Exercise Physiology: Foundation and Theory. (3) Cross-listed as ATRN 3280. Prerequisite: EXER or ATRN major. The physiological responses to exercise, adaptations to exercise training and the mechanisms responsible for them in relation to both health fitness and athletic performance. (Fall)

EXER 3281. Exercise Physiology: Principles and Application. (3) Corequisite: EXER 3280 Application of principles with laboratory experiences and the development of writing strategies appropriate to the domain of exercise physiology. Also to enhance the lecture material presented in EXER 3280. (Fall)

EXER 3285. Principles of Strength and Conditioning. (3) Prerequisites: EXER 1201 and EXER 3280. A study of biomechanical and physiological principles of strength and conditioning for the physically active. (Spring)

EXER 3286. Exercise Testing: Foundation and Theory. (3) Cross-listed as ATRN 3286. Prerequisite: A grade of C or above in EXER 3280 or ATRN 3280 and EXER 3281 or ATRN 3281. Corequisite: EXER 3287. This course is designed to teach methods and protocols for collecting and interpreting information collected on individuals concerning various fitness parameters for the future development of individual and group conditioning programs. (Fall)

EXER 3287. Exercise Testing: Principles and Applications. (3) Corequisite: EXER 3286 or ATRN 3286. Application of principles with laboratory experiences and the development of writing strategies and oral presentation appropriate to the domain of exercise testing. Appropriate data collection methods and protocols are used. Enhances the lecture material presented in EXER 3286. (Spring)

EXER 4121. Pharmacology for the Physically Active. (3) Cross-listed as ATRN 4121. Prerequisite: A grade of C or above in EXER 3260 or ATRN 3260. The course entails an examination of the historical aspects of use, abuse and addiction within the realm of health and human performance. This course will expose students to a wide variety of drug issues and the unique use and abuse patterns of individuals in the exercise science arena. (Fall)

EXER 4130. Applied Nutrition. (3) Principles of nutrition, dietary guidelines, dietary relationships to diseases and health, special populations, computerized dietary analysis. (2 year cycle)

EXER 4132. Lifetime Weight Management and Behavior Change. (3) Prerequisites: a grade of C or above in EXER 3260 or ATRN 3260 and EXER 4286. Examines factors in obesity and weight control,
emphasizing techniques in behavior modification and lifestyle change for effective weight management. (Spring) (Internet)

EXER 4134. Assessment and Development of Physical Fitness. (3) Prerequisite: permission of the instructor. Study of responses and adaptations to exercise, assessment techniques, exercise prescription, leadership and programming. (2-year cycle)

EXER 4204. Perceptual Motor Development. (3) Theories, principles and research related to perceptual motor development of children. (On demand)

EXER 4205. Perceptual Motor Learning. (3) Prerequisite or corequisite: EXER 4204 or permission of instructor. Perceptual-motor learning of children and its effect on school performance and the relationships of perceptual-motor development to reading, writing and mathematics. (On demand)

EXER 4208. Perceptual Motor Therapy. (3) Prerequisite: EXER 4205 or permission of the instructor. Observation of and evaluation and therapy for children with perceptual-motor delays. (On demand)

EXER 4210. Perceptual Motor Therapy Laboratory. (1) Prerequisite/corequisite EXER 4204, 4205, or 4208. (On demand)

EXER 4211. Perceptual Motor Therapy Laboratory. (2) Prerequisites/corequisite: EXER 4204 or 4208. (On demand)

EXER 4212 . Perceptual Motor Therapy Laboratory. (3) Prerequisite: EXER 4208, 4210, or 4210 and permission of instructor. Supervised observation, testing and clinical teaching of children with perceptual-motor dysfunction.

EXER 4286. Exercise Prescription. (3) Cross-listed as ATRN 4286. Prerequisite: Successful completion of EXER 3286 or ATRN 3286 and EXER 3287 or ATRN 3287. This course is designed to teach the interpretation and prescription of exercise and various fitness parameters for programs with healthy populations and general clinical populations. (Fall)

EXER 4293. Biomechanics. (3) Cross-listed as ATRN 4293. Prerequisites: a grade of C or above in EXER 3280 or ATRN 3280. This course provides an introduction to the study of physics principles as they govern human movement, as well as understanding how the neuromuscular system controls human movement. Additionally, this course covers the mechanical principles that underlie musculoskeletal injury, as well as the influence that gender and ethnicity may have on various musculoskeletal pathologies. (Fall)

EXER 4294. Biomechanics Lab. (1) (W) Cross-listed as ATRN 4294. Corequisite: EXER 4293. Laboratory experiences and assignments to enhance the lecture material presented in EXER 4293. One laboratory period of two hours a week or two one hour labs. (On demand)

EXER 4490. Exercise Science Senior Internship. (6-15) Prerequisites: Completion of all other courses for the major, except EXER 4132, with a grade of C or above. Application of acquired knowledge and skills in practitioner settings. This internship course requires a minimum of 340 contact hours at the internship site. (Fall, Spring, Summer)

EXER 4660. Practitioner Seminar. (3) Prerequisites: a grade of C or above in EXER 3286 and EXER 3287. Emphasis is on contemporary practices regarding exercise, health, and wellness. This course also is designed to help students prepare for relevant certification exams. (Fall)

FILM STUDIES (FILM)

FILM 2201. Introduction to Film. (3) Introduction to elements of film needed for analyzing and writing about film. Required for Minor in Film Studies. (Fall, Spring)

FILM 3050. Topics in Film. (3) National film histories, film analysis, film criticism, film genres. May be repeated as topic changes.

FILM 3051. Topics in Film. (3) (W) National film histories, film analysis, film criticism, film genres. May be repeated as topic changes. (On demand)

FILM 3120. The Fundamentals of Video/Film Production. (3) Key components: planning and preparation through post-production and presentation, including writing a simple screenplay, storyboarding, locating equipment, casting, shooting, editing, post-production synchronization, and exhibition.

FINANCE (FINN)

FINN 3000. Topics in Finance. (3) Prerequisite: Junior standing. Topics from the area of Finance. The course may be repeated for credit. (On demand)

FINN 3120. Financial Management. (3) Prerequisites: MATH 1120, STAT 1220; ACCT 2121, 2122, ECON 2101, 2102; INFO 2130; Business major, Junior standing. Principles and problems of financial aspects of managing capital structure, least-cost asset management, planning and control. Computer application will be included where appropriate. (Fall, Spring, Summer)

FINN 3221. Financial Institutions and Markets. (3) Prerequisite: FINN 3120. A study of financial institutions and money and capital markets which considers their roles in the intermediation process. Special emphasis is focused on the comparative financial policies of financial institutions considered in the context of their market environments. (Fall)

FINN 3222. Investments. (3) Prerequisite: FINN
FINN 3223. International Financial Management. (3) Prerequisite: FINN 3120. Viewpoints are those of the senior financial officer of a corporation involved in international business and of the international officer of a commercial bank. Topics include the financing of exports and imports, financing of foreign operations, problems of foreign exchange rates and the impact of accounting procedures on financial management. (Fall, Spring)

FINN 3224. Applied Business Finance. (3) Prerequisite: FINN 3120. Case studies of the theories and techniques of financial management as they relate to the goal of the financial manager; the maximization of the value of the firm. Topics include financial planning, valuation, financial instruments, financial structure, and capital budgeting. (On demand)

FINN 3225. Commercial Bank Management. (3) Prerequisite: FINN 3120. A study of sound and efficient techniques for the management of commercial banks. Topics include industry structure, administrative organization, and management of assets, liabilities and capital. (Spring)

FINN 3226. Financial Theory and Practice. (3) Prerequisite: FINN 3120. Modern financial theory and its application, including risk theory, market equilibrium asset pricing models, efficient market theory, capital structure theory and applications (including issues surrounding financial distress and bankruptcy), dividend policy, agency problems, informational asymmetry, advanced topics in capital budgeting, and leasing. (Fall, Spring)

FINN 3261. Real Estate Finance. (3) Prerequisite: FINN 3120. This course covers the fundamentals of real estate finance and investment and includes the topics of: real estate capital markets, mortgage markets, mortgage securitization, real estate contracts and leases, investment analysis, valuation and appraisal, return and risk considerations, and the effects of debt financing, taxation and government regulations on real estate investment. (Spring)

FINN 3271. Principles of Risk Management and Insurance. (3) Prerequisite: INFO 2130, Junior standing, business major or permission of the department. A study of the different types of nonspeculative risks faced by individuals and businesses and the possible alternative methods of treating such risks. An examination of the specific application of these methods with regard to life, health, property, casualty, and liability contracts. (Fall, Spring)

FINN 3272. Life Insurance and Professional Financial Planning. (3) Prerequisite: INFO 2130, Junior standing, business major or permission of the department. This course explains the uses of life insurance, annuities, health insurance and Social Security in the financial planning context. It explains the integration of social security benefits, employer-provided benefits, and individually purchased life insurance and investments into comprehensive financial plans. Students successfully completing this course should understand the need for the main techniques of financial planning in contemporary U.S. society. (Fall, Spring)

FINN 3273. Property and Casualty. (3) Prerequisite: INFO 2130, Junior standing, business major or permission of the department. Involves an analysis of the needs of business and individuals for property and casualty insurance and the nature of available coverage. An examination of property and casualty insurance products is included, emphasizing the study of case law, the use of contracts and contract language underwriting procedures, actuarial science, reinsurance, accounting, non-insurance risk transfer, and claims handling. (Fall)

FINN 3275. Advanced Risk Management. (3) Prerequisites: FINN 3271 (or permission of department chair). Provides an in depth analysis of techniques that firms can use to handle non-speculative pure risks. Risk handling devices and how they are applied to business problems are discussed. Some of the techniques examined include self-insurance, captives, financial instruments and retention. Included is an analysis of loss data and how it can be utilized to select a risk handling technique. (Fall, Spring)

FINN 3276. Employee Benefits. (3) Prerequisites: INFO 2130, Junior standing, and a business major. Provides an analysis of group plans (e.g., medical, life, disability, and retirement), stock options, profit sharing plans and statutory benefits (e.g., workers’ compensation and social security). Includes a review of legislation affecting these plans. Non-traditional plans (e.g., child care, flex time, and wellness programs) are also examined. (Spring)

FINN 3277. Legal Aspects of Insurance. (3) Prerequisite: FINN 3271. Provides an in-depth analysis of the impact that statutes, regulations and litigation have on risk management and insurance. Will examine the impact the courts have had on claims handling. (On demand)

FINN 3500. Cooperative Education and 49ership Experience. (0) Enrollment in this course is for the University cooperative education and 49ership/service 49ership students during each semester they are working in a position. Acceptance into the Experiential Learning Program by the University Career Center is required. Participating students pay a course registration fee for transcript notation (49ership and co-op) and receive full-time student status (co-op only). Assignments must be arranged and approved in advance. Course may be repeated; evaluation is Satisfactory/Unsatisfactory. Only open to undergraduate students; Graduate level students are encouraged to contact their academic departments to inquire about academic or industrial internship options for credit. For more information,
contact the University Career Center. (Fall, Spring)

FINN 3800. Directed Study. (1-3) Prerequisites: Permission of the department and Junior standing. Enrollment granted only by permission of the faculty with whom the work will be performed. The student's work assignments will be designed by the student and faculty member who will oversee the project of study. The credit hours will be determined prior to enrollment and will be based on the particular project undertaken. (On demand)

FINN 4158. Student Managed Investment Fund I. (3) Prerequisites: FINN 3120 and FINN 3222. Management of an actual portfolio consisting of a portion of the University’s Endowment Fund. Admission is by permission of instructor. Students selected for the course are required to take FINN 4159. (Fall)

FINN 4159. Student Managed Investment Fund II. (3) Prerequisites: FINN 3120 and FINN 3222. Management of an actual portfolio consisting of a portion of the University’s Endowment Fund. Admission is by permission of instructor. Student cannot enroll in this course without successfully completing FINN 4158. (Spring)

FOREIGN LANGUAGE EDUCATION (FLED)

FLED 4200. Secondary Methods - Foreign Languages. (3) Prerequisite: Completion of at least two 3000-level courses or equivalent in the target language, or permission of the Department of Middle, Secondary & K-12 Education. Current trends and practices in teaching foreign and second languages in the high school, with emphasis on practical applications. Addresses state mandated competencies. Required for licensure in the teaching of French, German, or Spanish (K-12). Includes 30 hours of field experiences. (Fall) (Evenings)

FLED 4201. K-8 Methods - Foreign Languages. (3) Prerequisite: Completion of at least two 3000-level courses or equivalent in the target language, or permission of the Department of Middle, Secondary & K-12 Education. Current trends and practices in teaching foreign and second languages in the elementary school and middle school (K-8), with emphasis on practical applications. Addresses state mandated competencies. Required for licensure in the teaching of French, German, or Spanish (K-12). Includes 15 hours of field experiences. (Spring) (Evenings)

FLED 4469. Student Teaching/Seminar: K-12 Foreign Language. (12) Prerequisite: Departmental permission for admission to student teaching, including minimum score of advanced-low on Oral Proficiency Interview (OPI). Co-requisite: MDSK 4150. A planned sequence of experiences in the student’s area of language specialization (French, German, or Spanish) conducted in an approved school setting under the supervision and coordination of a University supervisor and a cooperating teacher. Students must demonstrate the competencies identified for their language. Approximately 35-40 hours per week in an assigned school setting and 6-8 on-campus seminars scheduled throughout the semester. (Fall, Spring)

FREN 1050. Special Approaches to the Study of French. (1-6) Course may be repeated with change of topic. (On demand)

FREN 1201. Elementary French I. (4) For students with limited or no previous experience in French. First course in a two-course sequence to develop competence in culture, speaking and writing, listening and reading comprehension in French. (Fall, Spring, Summer) (Evenings)

FREN 1202. Elementary French II. (4) Prerequisite: FREN 1201 or equivalent. Second course in a two-course sequence to develop competence in culture, speaking and writing, listening and reading comprehension in French. (Fall, Spring, Summer) (Evenings)

All 2000-level courses except for FREN 2202, FREN 2209, and FREN 2210 fulfill the language requirement of non-majors who are required to take one intermediate-level language course.

FREN 2050. Topics in French I. (1-3) Course may be repeated with a change in topic. (On demand)

FREN 2200. French for Reading Knowledge. (3) Prerequisite: FREN 1202 or equivalent. Review of French grammar with emphasis on developing reading skills. Taught in English. Does not count for major or minor credit. (Fall and/or Spring).

FREN 2201. Intermediate French I. (3) Prerequisite: FREN 1202 or equivalent. Review of grammar, with reinforcement and expansion of competence in speaking, understanding, reading, and writing, in a cultural context. (Fall, Spring)

FREN 2202. Intermediate French II. (3) Prerequisite: FREN 2201 or permission of the department. Conversation and composition based on readings in French literature and culture. Film and slide presentations. (Fall, Spring)

FREN 2207. French Phonetics. (3) Prerequisite: FREN 1202 or permission of the department. Study of the sounds of the French language, their production and representation by means of the International Phonetic Alphabet. Practice in reading and speaking with proper rhythm and intonation. (Fall)

FREN 2209. French Civilization. (3) (W) Conducted in English. No knowledge of French required. Open to majors and non-majors for elective credit. A study of the French people, past and present, with emphasis on cross-cultural contrasts in attitudes and values. (Fall, Spring)
FREN 2210. Introduction to Business French. (3) Prerequisite: FREN 2201 or permission of the department. Introduction to spoken and written language of the French-speaking business world. Acquisition of and practice with general commercial terminology used in French for such functional business areas as economics, management, marketing, finance, and import-export. (Alternate to FREN 2202 only for Certificate in Business French) (On demand)

FREN 3050. Topics in French. (1-3) Course may be repeated with change of topic. (On demand)

FREN 3201. French Grammar and Conversation. (3) (O) Prerequisite: FREN 2202 or permission of the department. Review of French grammar and guided conversation on prepared topics. Emphasis on spoken French. (Fall)

FREN 3202. French Grammar and Composition. (3) Prerequisites: FREN 2202 and 2207 or concurrent enrollment in FREN 2207. FREN 3201 recommended. Review of French grammar and guided compositions on prepared topics. Emphasis on vocabulary, idiomatic expressions, and stylistics. (Spring)

FREN 3203. Introduction to French Literature. (3) Prerequisite: FREN 2202. Corequisite: FREN 3202 or permission of the department. Development of techniques for literary study through analysis of selected major works in French literature. Readings, discussions, presentations, and explications de texte. (Spring)

FREN 3209. France Today. (3) Prerequisite: FREN 3201 or 3202 or permission of the department. Contemporary France: institutions, society, culture. (Fall)

FREN 3800. Directed Individual Study. (1-3) Prerequisite: permission of the department; normally open only to French majors and minors. Individual work on a selected area of study. To be arranged with the instructor, generally during the preceding semester, and by special permission only. May be repeated for credit. (On demand)

FREN 4003. Studies in French Literature. (3) Prerequisites: FREN 3201, 3202, and 3203 or permission of the department. Course may be repeated with change of topic. (On demand)

FREN 4005. Studies in the French Language. (3) Prerequisites: FREN 3201 and 3202, or permission of the department. Course may be repeated with change of topic. (On demand)

FREN 4007. Studies in French Culture and Civilization. (3) Prerequisites: FREN 3201, 3202, and 3209, or permission of the department. Course may be repeated with change of topic. (On demand)

FREN 4050. Topics in French. (1-3) Prerequisites: Junior standing; English 1102 or equivalent if taught in English. May be taught in French or English. Will not count toward the major. Course may be repeated with change of topic. (On demand)

FREN 4120. Advanced Business French I. (3) Prerequisites: FREN 2210, 3201 and an additional 3000- or 4000-level course (3202 recommended), or permission of the department. Advanced studies in Business French, with intensive practice in speaking, listening comprehension, reading, writing, and translation in functional business areas such as economics, management, and marketing. (On demand)

FREN 4121. Advanced Business French II. (3) Prerequisites: FREN 2210, 3201, and an additional 3000- or 4000-level course (3202 recommended), or permission of the department. Advanced studies in Business French, with intensive practice in speaking, listening comprehension, reading, writing, and translation in functional business areas such as economics, management, and marketing. (On demand)

FREN 4201. Survey of French Literature I. (3) Prerequisite: FREN 3203. The major literary movements from the Middle Ages to the Enlightenment, with sample texts. Emphasis on continuity and change. (Fall, Odd years)

FREN 4202. Survey of French Literature II. (3) Prerequisite: FREN 3203. The major literary movements from the Enlightenment to the contemporary period, with sample texts. Emphasis on continuity and change. (Fall, Even years)

FREN 4410. Professional Internship in French. (1-6) Prerequisites: FREN 3201 and 3202, or equivalent and permission of the department. Faculty-supervised field and/or research experience in a cooperating professional (e.g., business) or community organization. Contents of internship based upon a contractual agreement among the student, department, and business or community organization. Graded on a Pass/No Credit basis. (Fall, Spring, Summer)

FREN 4800. Directed Individual Study. (1-3) Prerequisite: permission of the department; normally open only to French majors and minors. Individual work on a selected area of study. To be arranged with the instructor, generally during the preceding semester, and by special permission only. May be repeated for credit. (On demand)

GEOG 1101. World Regional Geography. (3) A world regional study which emphasizes the distinctly human responses of people to various geographic situations throughout the world. The nature and development of cultural regions will be studied. (Fall, Spring, Summer) (Evenings)

GEOG 1105. The Location of Human Activity. (3) An examination of factors which account for the locational characteristics of economic and other
human activities. The locational decision-making process is examined as a means of understanding human spatial behavior. (Fall, Spring, Summer)

GEOG 2000. Topics in Geography. (1-4) Treatment of major topical or regional issues in Geography. May be repeated for credit as topics vary. (On demand)

GEOG 2100. Maps and Graphs. (3) A study of cartography and its essential processes, with particular emphasis on the map as a communication system, the effective communication of data by means of graphical symbols, map interpretation and discussion of map production techniques. (Fall, Spring) (Evenings)

GEOG 2101. Cartographic Laboratory. (1) Prerequisite or corequisite: GEOG 2100. The laboratory emphasizes thematic mapping and design. This includes basic map construction techniques, including desktop mapping with computers. Two hours of laboratory per week. (Fall, Spring) (Evenings)

GEOG 2103. Elements of GIScience and Technologies. (4) This course covers the fundamentals of Geographic Information Science (GIS), related technologies used in GIS, and how GIScience is being applied in such diverse fields as planning, marketing, criminal justice, health, natural resources, information technology and engineering. Students will learn the processes to collect, organize, analyze and display geographic data using GIS and will be introduced to related technologies including GPS, Air Photo-Interpretation and basics of Remote Sensing. Students will also cover mapping basics including scale, projections, coordinate systems, data classification, and cartographic design. (Fall, Spring) (Evenings)

GEOG 2105. Introduction to Economic Geography. (3) Examination of the spatial dimensions of economic activity, geographic organization and interaction of economic production, consumption, and exchange systems. Emphasis is placed on location-based factors and principles utilizing theoretical and empirical studies. A variety of geographic scales will be examined, from the local to the global. (Spring)

GEOG 2110. Introduction to Geographic Research. (3) Research design and resources in geographic research. Emphasis on spatial applications in summary statistics; spatial summaries, statistical hypothesis testing; sampling and estimation; association, correlation and regression. (Fall, Spring) (Evenings)

GEOG 2120. Geographic Information Systems: Survey of Applications and Techniques. (4) Covers the fundamentals of GIS technology and how it is being applied in such diverse fields as planning, marketing, criminal justice, political science, and engineering. Students will learn how to collect, organize, analyze, and display spatial data obtained from sources such as address geocoding, GPS, and WWW sites. Each student will complete a series of lab exercises that illustrate the typical steps in a GIS project. Three lecture hours, one two-hour lab per week. (Fall, Spring)

GEOG 2125. Business Applications of GIS. (3) Introduction to the uses of spatial data and the geographic information systems that handle them in basic business decision-making and research. Applications include geographic data presentation, consumer research, marketing, site selection and trade area analysis. Students are provided an introduction to key economic geography concepts, data availability, and experience executing GIS projects. This course is an acceptable prerequisite for GEOG 4120. (Spring)

GEOG 2140. Geography of North Carolina. (3) A survey of the cultural, economic, urban, environmental and physical landscape of North Carolina with an emphasis on understanding the complex geographical variety that exists within a dynamic Southern state. Historic, current and future geographic patterns will be explored. (Spring) (On demand)

GEOG 2150. Geography of Polar Regions. (3) Arctic and Antarctic regions, history of exploration, the physical environment and political significance. (Yearly)

GEOG 2155. Geography of the U.S. and Canada. (3) Geographic structure of the U.S. and Canada with emphasis on physical environment and patterns of human activities. (Fall)

GEOG 2160. The South. (3) The culture, environment, population and economy of the southeastern U.S.; emphasis on current trends and future implications. (Yearly)

GEOG 2165. Patterns of World Urbanization. (3) (O) Introduction to cities of the world including examination of cities within different culture areas as well as the internal structure of different cities within the context of traditional and innovative theories of development geography. (Fall, Spring, Summer)

GEOG 2200. Introduction to Urban Studies. (3) Cross-listed with URBS 2200. A survey course exploring the diverse perspectives and experience of North American Cities. Lectures and discussions will focus on the development, organization, function, and meaning of urban areas, as well as the multiple and complex relationships that exist between cities and the people who live and work within them. (Fall, Spring)

GEOG 3000. Topics in Regional Geography. (3) Examination of major geographical regions of the world. May be repeated for credit as topics vary. (Yearly)

GEOG 3100. The City and Its Region. (3) Study of the regional system of cities in terms of their size, spacing, historical evolution, functional relationships and future prospects. (Fall, Spring)

GEOG 3105. Geography of the Global Economy. (3) Examination of the globalization of economic activity with focus on the geographic patterns of international
production, trade, and foreign direct investment and changes in these patterns resulting from actions by transnational corporations and nation states within a volatile technological environment. (Spring)

GEOG 3110. Urban Political Geography. (3) Spatial organization of metropolitan America. How metropolitan residents organize space into territorial units and the human, social and political ramifications of that organization. Spatial consequences of the most common modes of political, administrative and territorial organization. (Alternate years)

GEOG 3115. Urban Transportation Problems. (3) (W) Problems associated with moving goods, people and information in urban areas. Topics include mass transit and pollution problems. (Alternate years)

GEOG 3150. Manufacturing Geography. (3) Factors relating to the nature, locations and development of manufacturing industries. Emphasis upon classification of manufacturers, principal areas of manufacturing and the role of manufacturing in regional development. (Spring) (Evenings)

GEOG 3200. Land Use Planning. (3) Land use planning, with emphasis on basic planning processes, implementation techniques and strategies, and issues confronting contemporary urban and rural planning. (Spring)

GEOG 3205. Internal Structure of the City. (3) Integrative study of the spatial structure of cities with emphasis on land use patterns and models, transportation systems, residential concentrations, commercial activities and manufacturing zones. (Fall, Spring, Summer)

GEOG 3210. Regional Planning. (3) Introduction to regional planning strategies and approaches developed by regional planning agencies. Urban-regional planning relationships with emphasis on techniques used in regional analysis. (Spring)

GEOG 3215. Environmental Planning. (3) (W) Interaction and relationships between natural and human-made elements of the environment with emphasis on planning concepts and methodologies used in contemporary environmental planning. (Fall)

GEOG 3250. World Food Problems. (3) Magnitude, consequences, major causes and potential solutions to the world’s food problems. (On demand)

GEOG 3260. Medical Geography. (3) Traditional aspects of medical geography including disease mapping, disease ecology and statistical association and more recent social scientific topics, including disease diffusion, health care facilities planning and spatial behavior. (On demand)

GEOG 3265. Behavioral Geography. (3) (W) Behavioral approach to environmental decision-making, personal space, room and building geography, consumer behavior, territoriality, perception of wilderness and natural hazards, activity space, and communication biases. (Fall)

GEOG 3500. Geography Cooperative Education and 49ership Experience. (0) Enrollment in this course is required for the department's geography cooperative education and 49ership/service 49ership students during each semester that they are working. Acceptance into the Experiential Learning Program by the University Career Center is required. Participating students pay a course registration fee for transcript notation (49ership and co-op) and receive full-time student status (co-op only). Assignments must be arranged and approved in advance. Course may be repeated; evaluation is Satisfactory/Unsatisfactory. Only open to undergraduate students; Graduate level students are encouraged to contact their academic departments to inquire about academic or industrial internships for credit. For more information, contact the University Career Center. (Fall, Spring, Summer)

GEOG 3501. Geography Cooperative Education Seminar. (1) This course is required of geography cooperative education students in each semester following a work assignment for presentation of geography reports on the co-op learning experience. (Fall, Spring, Summer)

GEOG 3605. Geography of Europe. (W) (3) This course explores relevant issues in contemporary Europe. Through lecture and written work, the course examines current trends in European political unity, economic integration, national/ethnic conflict and environmental policy from a geographical perspective.

GEOG 4000. Selected Topics in Geography. (3) Prerequisite: Permission of instructor. An intensive study of topics in geography from such areas as urban, manufacturing, planning, retailing activity, transportation, and political geography. Topics vary from semester to semester. May be repeated for credit as topics vary. (Yearly)

GEOG 4040. Transportation Topics. (3) Prerequisite: Permission of department. Investigation of special topics in transportation including: transit systems, mobility and travel patterns, land use/transportation interface, air pollution, and information systems. (Spring) (Alternate years).

GEOG 4101. Cartographic Techniques. (3) Prerequisite: GEOG 2100. Preparation of maps, figures and charts at a professional level of competence. Techniques to be emphasized include desktop mapping with computers, high resolution imagesetting output, color separation techniques which include computer separations as well as lettering and various related photographic processes. Two laboratories of three hours each per week. (Spring)

GEOG 4102. Cartographic Design and Map Construction. (3) Design process and basic map construction techniques with particular emphasis on the graphic elements of map design, planning map
design, creating visual hierarchies, the uses of color, and basic mechanical color separation. (Fall)

GEOG 4103. Computer Programming for GIS Applications. (3) Prerequisite: GEOG 2103 or permission of instructor. Software program development for GIS and mapping applications using high level programming languages such as Visual Basic. Emphasis on the design and implementation of geographic data structures and algorithms. (Fall)

GEOG 4108. Sport, Place, and Development. (3) (W) Prerequisite: GEOG 1105. Examines sport and its impact on the landscape of cities and communities. Implications of sport are examined in terms of urban land use, urban social structure, markets, franchise movement and expansion, urban politics, its role in defining sense of place, and its impact on the development of communities and regions. (Fall, Alternate years)

GEOG 4120. Fundamentals of Geographic Information Systems. (4) Prerequisite: GEOG 2103 or permission of instructor. Development, current state-of-the-art and future trends in geographic information processing with emphasis on data gathering, storage, and retrieval, analytical capabilities and display technologies. A laboratory component will include development and completion of an applied GIS research project. Three lecture hours, one two-hour lab per week. (Fall, Spring)

GEOG 4130. Advanced Geographic Information Systems. (4) Prerequisite: GEOG 4120 or permission of instructor. Advanced GIS study with emphasis on (1) advanced skills for database development and management; (2) spatial analysis and modeling; and (3) Macro language programming and user interface design. Three lecture hours and a two-hour lab session each week. (Spring)

GEOG 4131. Environmental Modeling with GIS. (4) Prerequisite: GEOG 4120 or permission of the instructor. Theories and practices of modeling the environment with GIS. Topics include types of spatial modeling frameworks; GIS data sources and measurement technologies for environmental modeling; development, calibration, and validation of environmental models; 3-dimensional modeling and visualization of physical processes; and spatial analysis of human-environment interactions. (Fall or Spring)

GEOG 4132. Spatial Modeling for Social and Economical Applications. (4) Prerequisite: GEOG 4120 or permission of the instructor. Theories and practices of spatial modeling with social and economical applications. Topics include (1) simulation models for land use change, smart growth, object movement, and homeland security planning; (2) integrated models – spatial – non-spatial, topological – ontological, deterministic – stochastic; (3) agent-based models. Lab exercises employ various spatial modeling tools. (Fall or Spring)

GEOG 4140. Geographic Information Techniques for Community Planning. (4) Prerequisite: GEOG 4120 Introduction to Geographic Information Systems, one community planning course and/or permission of the instructor. This course is focused on the connection between community planning and geographic information techniques under the general framework of planning support systems (PSS). It is designed to help students develop knowledge, skills, and experience in the following areas. (1) municipal geographic database handling; (2) land suitability and feasibility assessment; (3) landscape aesthetics assessment; (4) sketch planning; and (5) systematic approaches to planning. A real work project from the Charlotte region will be conducted. A two-hour lab is required.

GEOG 4150. Spatial Database Development with GPS and GIS. (4) Prerequisites: GEOG 4120, or permission of instructor. This course consists of tutorials, readings, projects, and discussions of how geo-technologies can be used to create digital geographic databases: designing conceptual databases using entity-relationship approach, transforming GPS data, geo-registering scanned base maps, digitizing vector features, entering attribute data, and developing Mobile GIS applications. (Fall or Spring)

GEOG 4155. Retail Location. (3) Spatial attributes of retailing and related activities. Location patterns, store location research, trade area delineation and consumer spatial behavior. (Spring)

GEOG 4160. The Geography of Transportation Systems. (3) Geographical and human factors that affect the movement of goods and people from place to place. Emphasis on transportation routes and networks, commodity flow patterns, and the locational implications of freight rates. (Spring)

GEOG 4209. Small Town Planning. (3) This course will explore small town population dynamics, rural-urban fringe land use dynamics, and changes in small towns’ community identity and sense of place. Emphasis will be placed on the issues and techniques that typify small town planning environments. Students will investigate these issues via field work and data collection at municipal scales within the Charlotte region. (Spring, alternate summers)

GEOG 4210. Urban Planning Methods. (3) Prerequisite: GEOG 3205 or permission of instructor. Scope and methods of urban planning. Emphasis on analytical techniques, projections, and data sources used in developing comprehensive planning tasks and strategies. (Fall)

GEOG 4220. Housing Policy. (3) Prerequisites: GEOG 1105 and at least one of GEOG 2200, GEOG 2165, GEOG 3100, GEOG 3205 or GEOG 3215, or permission of instructor. This course is designed to provide students a comprehensive overview of U.S. housing policy while honing their research and analytical skills. Topics covered will include the evolution of housing policy, how the provision of housing impacts urban spatial patterns, and the past and present role of housing on regional economic development, land use planning, environmental
planning, transportation infrastructure, community revitalization, and social capital. (Fall)

GEOG 4255. Applied Population Analysis. (3)
Population data sources; measuring population change; elementary projection and estimation techniques; spatial sampling; migration; survey design; applications in the public and private sectors. (Fall)

GEOG 4260. Transportation Policy Formulation. (3)
Prerequisite: Permission of department. Structure of transportation policy at federal, state, and local levels including policies concerning highway financing and investments, congestion, safety, and use and development, energy, transit, and the provision of inter-city services. (Fall) (Alternate years)

GEOG 4265. Transportation Analysis Methods. (3)
Prerequisite: Permission of department; statistics recommended. Procedures for analyzing the operation and performance of transportation systems; includes network planning models, minimum path algorithms and assignments; energy, air pollution, and activity analysis models; and research approaches, data sources, time and activity budgets, infrastructure condition and needs assessment. (Spring) (Alternate years)

GEOG 4270. Evaluation of Transportation Impacts. (3)
Prerequisite: Permission of department. Methods and case studies for evaluating impacts and benefits of transportation investments including site-level impact analysis; project, corridor, and area scales; multi-modal evaluation and examination of mutually exclusive alternatives. (Fall) (Alternate years)

GEOG 4310. Urban Social Geography. (3)
Prerequisites: GEOG 1105 and at least one of GEOG 2200, GEOG 2165, GEOG 3100, or GEOG 3205, or permission of the instructor. Examines the reflexive relationship between society and urban space. Explores the intersection between urban geography and social theory, the evolution of city, community and personal spaces, and the relations and constructions of class, race, gender, and sexuality that shape and are shaped by the urban spaces in which we live and work. (Spring)

GEOG 4400. Internship in Geography. (3-6)
Prerequisite: Permission of the department. Research and/or work experience designed to be a logical extension of a student's academic program. The student must apply to department for an internship by submitting a proposal which specifies the type of work/research experience preferred and how the internship will complement his or her academic program. The student can receive three to six hours credit depending on the nature and extent of the internship assignment. (On demand)

GEOG 4405. Urban Field Geography. (3)
Prerequisite: six hours of urban-related undergraduate courses or permission of instructor. Intensive field studies of cities of the Carolinas, including one-day and overnight trips to cities of the mountains and coastal areas. Emphasis on day study trips within the Piedmont. Exercises include land-use mapping, trip journals, interviews and comparisons of the results of zoning and urban development practices within satellite cities of the Charlotte Metropolitan Statistical Area. (Summer)

GEOG 4800. Individual Study in Geography. (1-4)
Permission of department must be obtained and credit hours established in advance. Tutorial study or special research problems. May be repeated for credit. (On demand)

GEOLOGY (GEOL)

GEOL 1200. Physical Geology. (3) A study of the basic geological principles and processes in the earth sciences; the earth as a planet; treatment of physical processes shaping the earth; earth materials and landforms. (Fall, Spring, Summer)

GEOL 1200L. Physical Geology Laboratory. (1) Prerequisite or corequisite: GEOL 1200. Experimental study and investigation of the basic geological principles and processes in earth science; minerals, rocks, earth materials, and landforms. One lab period of three hours per week. Off-campus field trip required. (Fall, Spring, Summer) (Evenings)

Note: Although the laboratory and lecture sections of GEOL 1200 are taught as separate courses it is recommended that students take GEOL 1200L concurrently with GEOL 1200. Students with scheduling problems or students not fulfilling the UNC Charlotte science and technology requirements may take the lecture without the laboratory. Students fulfilling the UNC Charlotte science and technology requirement must either: (a) take GEOL 1200 and GEOL 1200L concurrently or (b) take GEOL 1200L in a semester subsequent to taking GEOL 1200.

GEOL 1210. Earth History. (3) Prerequisites: GEOL 1200. The origin and evolution of the earth's major features: the beginnings and changes of the earth's continents, atmosphere, oceans, and life forms, set in the vast context of geologic time. Three hours of lecture. (Fall, Spring)

GEOL 1210L. Earth History Lab. (1) Prerequisites: GEOL 1200, 1200L. Additional prerequisite or corequisite: GEOL 1210. Learn the basic techniques used by geologists to interpret the history of life, changing surface environments and habitats, plate tectonic movement, mountain building events, and climate changes. Hands-on investigation of rocks, fossils, geologic maps, and more. One lab period of three hours per week. Off-campus field trip required. (Fall, Spring)

GEOL 2000. Topics in Geology. (1-4) Treatment of major topical issues in Geology. May be repeated for credit as topics vary. (On demand)

GEOL 2020. The Planets. (3) Spacecraft exploration over the past 50 years has revealed the diversity and complexity of the Earth’s neighbors in space. This course is designed to explore the varied surface landscapes of planets and moons in the solar system
and to understand the processes that created them. Topics for discussion will include the origin of the solar system, comparisons among the planetary bodies, and the processes which modify their surfaces (tectonics, volcanism, impact cratering, weather and climate, glaciations, and other processes). The spacecraft and sensors used to study planetary bodies will also be discussed. (On demand)

GEOL 2100. The Violent Earth. (3) Volcanoes, earthquakes, hurricanes, tornadoes, floods and other catastrophic natural phenomena with emphasis on causes, effects and human adjustments. (On demand)

GEOL 3000. Selected Topics in Geology. (1-4) Prerequisite: GEOL 1200-1200L, or permission of the instructor. Treatment of specific topics selected from one of the fields of geology. May be repeated for credit as topics vary. (On demand)

GEOL 3110. Minerals and Rocks. (3) Prerequisites or corequisites: GEOL 1200 and 1200L. Formation processes, composition and identification of rocks and minerals in the earth’s crust with important abundance or special use. (On demand)

GEOL 3115. Mineralogy. (4) Prerequisite: GEOL 1200-1200L. Prerequisite or corequisite: CHEM 1251-1251L or permission of instructor. Identification, classification and description of minerals based on physical properties, crystallography, and chemical composition. Includes diagnostic techniques for identification of common ore and rock forming minerals. Three hours of lecture and one three-hour lab per week. (Spring)

GEOL 3120. Geochemistry. (3) Prerequisites: GEOL 1200-1200L and Chemistry 1251-1251L, or permission of instructor. Geochemical survey of origin, evolution and present composition of the earth. (Alternate years)

GEOL 3120L. Geochemistry Laboratory. (1) Prerequisite or corequisite: GEOL 3120 or permission of instructor. Analytical methods and sample preparation techniques used by geochemists. One three hour meeting per week. (On demand)

GEOL 3124. Sedimentology. (4) (W) Prerequisites: GEOL 1210-1210L, GEOL 3115 or permission of instructor. Examination of sedimentary rock features and compositions as related to origin, dispersion, deposition, diagenesis, classification and general distribution of sedimentary materials. Three hours of lecture and one three-hour lab per week. (Fall)

GEOL 3130. Structural Geology. (4) Prerequisite: GEOL 3115 or permission of instructor. A systematic examination of the structures and processes of rock deformation. Three lecture hours, one three-hour lab per week. (Fall)

GEOL 3140. Paleontology. (3) Prerequisite: GEOL 1200, 1200L and GEOL 1210, 1210L or permission of the instructor. Nature of fossils, analysis of growth and variation in fossil assemblages, reconstruction of the modes of life of extinct organisms, paleobiogeography, biostratigraphy, and the fossil record of evolutionary pattern and processes. (On demand)

GEOL 3190. Environmental Geology. (3) Prerequisites: GEOL 1200, 1200L. Aspects of geology with direct or indirect impact on society. Topics include slope stability, earthquake hazards, solid waste disposal, flooding, ground water problems, soil loss, sediment pollution, watershed dynamics, water and soil pollution, and radioactive waste disposal. (Spring)

GEOL 3190L. Environmental Geology Laboratory. (1) Prerequisite or corequisite: GEOL 3190. Investigation of the causes, consequences, and mitigation of natural hazards and disasters. One three-hour lab per week. (On demand)

GEOL 4000. Selected Topics in Geology. (1-4) Prerequisites: ESCI 1101-1101L, GEOL 1200-1200L, or permission of the instructor. In-depth treatment of specific topics selected from one of the fields of geology. May be repeated for credit as topics vary. (On demand)

GEOL 4100. Igneous and Metamorphic Petrology. (4) Prerequisite: GEOL 3115. Classification, mineralogy and chemical properties of igneous and metamorphic rocks including the tectonic processes by which they formed. Lab emphasizes hand specimen and petrographic description and interpretation of rocks in thin sections. (Alternate years)

GEOL 4105. Geomorphology. (3) Prerequisites: ESCI 1101-1101L or GEOL 1200-1200L. Surficial processes and landform development as controlled by climate, tectonics, rock characteristics and time with emphasis on plate tectonic, weathering, erosion, mass wasting, surface water, groundwater, glacial, wind and coastal processes and climate change in landscape development. (Fall)

GEOL 4105L. Geomorphology Laboratory. (1) Prerequisite or corequisite: GEOL 4105. Analysis of landforms and the surficial processes responsible for landform development. One lab period of 3 hours per week. (Fall)(On demand)

GEOL 4110. Stratigraphy. (4) Prerequisites: GEOL 1210-1210L and GEOL3124, or permission of instructor. The dinosaur and the development of the earth’s physical parameters. Study of human-induced seismic and electrical signals, and natural magnetic and gravitational fields for the purposes of locating faults, ore bodies, ground water, and other earth hazards or resources. Three hours of lecture and one three-hour lab per week. (On demand)
GEOL 4120. Geologic Mapping and Interpretation. (4) Prerequisites: GEOL 3130 and GEOL 4100 or permission of instructor. Field and lab oriented study using principles of mineralogy, petrology and structural geology. Involves collection and resolution of field data, techniques of presenting data, development of geologic maps, and critical reviews of existing literature. Two hours of lecture, four hours of lab/field work per week. (Alternate years)

GEOL 4125. Geologic Summer Field Camp. (6) Prerequisite: Junior standing and permission of instructor. Concentrated field investigation of geologic features. Data collection in the field, geologic mapping, report and map preparation and time management. Location of field camp will be specified each time course is offered. (Summer)

GEOL 4130. Optical Mineralogy. (4) Prerequisite: GEOL 3115. Light optics theory, the behavior of plane polarized light in a solid medium. The laboratory emphasizes the use of petrographic microscope oil immersion techniques and identification of the common rock forming minerals. Three hours of lecture and one three-hour lab per week. (On demand)

GEOL 4135. Tectonics. (4) Prerequisite: GEOL 3130 or permission of the instructor. A systematic examination of the evolution and dynamics of the earth from the perspective of plate tectonics theory. Three lecture hours, and one three-hour lab per week. (Alternate years)

GEOL 4140. Coastal Geology. (3) Prerequisites: GEOL 1200 and GEOL 1210 or permission of instructor. Examination of coastal environments, sediments, and wave-related processes in the present and geologic past. Major topics considered include barrier-island and salt-marsh development, sea-level fluctuations, and the relationship between human development and natural hazards. Three hours seminar per week and one mandatory two-day field trip. (Fall, On demand)

GEOL 4145. Fundamentals of Hydrogeology. (4) (W) Prerequisites: GEOL 1200-1200L, MATH 1241, CHEM 1251-1251L, or permission of instructor. Fundamentals of groundwater hydrology. Principles of flow and transport in groundwater aquifers and the vadose zone. Topics include: storage compressibility, capillarity, Darcy’s Law, aquifer parameters, steady and transient flow equations, well hydraulics, geological controls on groundwater flow, and transport of non-reactive chemical species by advection, diffusion and dispersion in porous media, together with applied problems. Three hours of lecture, and three hours of lab per week with occasional field trips. (Fall)

GEOL 4165. Aqueous Geochemistry. (4) Prerequisite: Prerequisites: CHEM 1251-1251L, CHEM 1252-1252L and GEOL 3115, or permission of instructor. Interaction of rocks, minerals, and gases with water under natural conditions, including an overview of the compositions of natural waters from a variety of environmental and geologic settings emphasizing a rigorous thermodynamic approach to understanding water-rock interactions. Three hours of lecture, and three hours of lab per week. (On demand)

GEOL 4185. Mineralogy, Economics, and the Environment. (3) Prerequisites: GEOL 3115 Mineralogy or permission of instructor. This course will focus on the origin, distribution, and consumption rate of the Earth’s mineral resources. Lectures and assignments are intended to promote understanding of the geologic, engineering, and economic factors that govern mineral exploration and production. Environmental impacts of the mining industry are also discussed. (On demand)

GEOL 4400. Internship in Geology. (3-6) Prerequisite: Permission of the department. Research and/or work experience designed to be a logical extension of a student’s academic program. The student must apply to the department for an internship by submitting a proposal which specifies the type of work/research experience preferred and how the internship will complement his or her academic program. The student can receive three to six hours credit depending on the nature and extent of the internship assignment. (On demand)

GEOL 4410. Applied Soil Science. (4) Prerequisites: GEOL 3115, GEOL 3124, ESCI 4210 or permission of the instructor. Students will read and discuss current literature pertaining to the application of soils to various fields of research such as surficial processes, active tectonics, ecology, stratigraphy, archaeology, and environmental assessment. Topics covered will vary depending on the interests of the students. Students will create and execute a semester-long soils-based field or laboratory research project of their choosing. Three hours seminar, three hours field or lab each week. (Spring)

GEOL 4800. Individual Study in Geology. (1-4) Prerequisites: Permission of the department and credit hours established in advance. Tutorial study or special research problems. May be repeated for credit as topics vary. (On demand)

GERMAN (GERM)

GERM 1201. Elementary German I. (4) For students with limited or no previous experience in German. First course in a two-course sequence to develop competence in culture, speaking and writing, listening and reading comprehension in German. (Fall, Spring, Summer) (Evenings)

GERM 1202. Elementary German II. (4) Prerequisite: GERM 1201 or equivalent. Second course in a two-course sequence to develop competence in culture, speaking and writing, listening and reading comprehension in German. (Fall, Spring, Summer) (Evenings)

All 2000-level courses fulfill the language requirement of non-majors who are required to take
GERM 2201. Intermediate German I. (3) Prerequisite: GERM 1202 or equivalent. Review of grammar; reinforcement and expansion of competence in speaking, understanding, reading, and writing, in a cultural context. (Fall, Spring)

GERM 2202. Intermediate German II. (3) Prerequisite: GERM 2201 or permission of the department. Review of grammar, composition, and conversation using film and/or readings on the culture and civilization of German-speaking countries. Students who wish to continue with advanced offerings in German are advised to complete GERM 2202. (Fall, Spring)

GERM 2210. German in the Workplace. (3) Prerequisite: GERM 2201 or permission of the department. Introduction to spoken and written language of the German-speaking business world. Acquisition of and practice with general commercial terminology used in German for such functional business areas as economics, management, marketing, finance, and import-export. (Alternate for business areas as economics, management, and marketing. Spring)

GERM 2203. Business German A. (O) Prerequisite: GERM 2201 or permission of the department. Advanced study in German language, specialized topic in German business area. (Fall)

GERM 2204. Survey of German Literature I. (3) (O, W) Prerequisite: GERM 2201 or equivalent. Review of grammar; reinforcement and expansion of competence in speaking, understanding, reading, and writing, in a cultural context. (Yearly)

GERM 2205. Survey of German Literature II. (3) Prerequisite: GERM 2204 or GERM 2210 or permission of the department. Advanced study in German language, specialized topic in German business area. (Fall, Spring)

GERM 3030. Studies in German Culture. (3) (W) Conducted in English. No knowledge of German required. A study of the life and thought of German-speaking peoples both past and present. Course topic will concentrate on a geographical area, a particular cultural institution, or a particular period. May be repeated as topic changes. (Alternate years)

GERM 3050. Studies in German Literature. (3) Conducted in English. No knowledge of German required. May be repeated as topic changes. (Yearly)

GERM 3150. The Holocaust through German Literature and Film. (3) (W) Prerequisite for German Majors: satisfactory completion of GERM 2202 or equivalent. Conducted in English. No knowledge of German required. Through the lens of German literature and film this course examines the Holocaust and focuses on historical, moral, and aesthetic issues in its representation. (Yearly)

GERM 3160. Survey of German Film. (3) (O, W) Prerequisite: sophomore status and ENGL 1102. Introduction to major movements in German film history. Conducted in English. Lectures, group discussions, viewing of films (in whole and in part), and a variety of writing assignments. For students seeking to apply this course toward requirements for the German major or minor there is a prerequisite of four semesters of German or the equivalent and a corequisite of GERM 4050. (On demand)

GERM 3201. Advanced German Grammar, Composition and Conversation I. (3) (O) Prerequisite: GERM 2202 or GERM 2210 or permission of the department. For prospective teachers of German and students who want intensive oral and written work in the language, as well as review of grammar. (Yearly)

GERM 3202. Advanced German Grammar, Composition and Conversation II. (3) Prerequisite: GERM 2202 or permission of the department. Review of German grammar. Intensive oral and written work in the language. (Yearly)

GERM 3800. Directed Individual Study. (1-3) Prerequisite: permission of the department; normally open only to German majors and minors. Individual work on a selected area of study. To be arranged with the instructor, generally during the preceding semester, and by special permission only. May be repeated for credit. (On demand)

GERM 4010. Periods in the History of German Literature. (3) (a) Medieval literature, (b) Classicism, (c) Romanticism, (d) Nineteenth Century, (e) Contemporary literature. Prerequisites: two 3000-level courses or permission of the department. Study of the major writers and works in a given period. Readings, lectures, and reports. May be repeated for major credit with change of topic. (Alternate years)

GERM 4020. The Chief Genres in German Literature. (3) (a) Novel, (b) Theater, (c) Lyric poetry, (d) short prose fiction. Prerequisites: two 3000-level courses or permission of the department. An analysis of a major genre and its development within German literary history. Readings, lectures and reports. May be repeated for major credit with change of topic. (Alternate years)

GERM 4050. Special Topics in German. (1-3) Prerequisite: one 3000-level course or permission of the instructor. Treatment of a special group or figure in German literature, specialized topic in German culture or language, or special problems in German conversation. May be repeated for credit with change of topic. (Fall, Spring, Summer)

GERM 4120. Advanced Business German I. (3) Prerequisites: GERM 2210, 3201 and an additional 3000- or 4000-level course (3202 recommended), or permission of the department. Advanced studies in Business German, intensive practice in speaking, listening comprehension, reading, writing, and translation in functional business areas such as economics, management, and marketing. (Fall)

GERM 4121. Advanced Business German II. (3) Prerequisites: GERM 2210, 3201, and an additional 3000- or 4000- level course (3202 recommended), or permission of the department. Advanced studies in Business German, intensive practice in speaking, listening comprehension, reading, writing, and translation in functional business areas such as marketing, finance, and import-export. (Spring)

GERM 4203. Survey of German Literature I. (3) Prerequisites: two 3000-level courses or permission of the department. General introduction to German literature from the Middle Ages to the Classical Period. Book reports and class discussion on collateral readings. (On demand)

GERM 4204. Survey of German Literature II. (3) Prerequisites: two 3000-level courses or permission of
the department. German literature since Classicism. Book reports and discussions on collateral readings. (On demand)

**GERM 4410. Professional Internship in German. (1-6)** Prerequisites: GERM 3201 and 3202, or equivalent and permission of the department. Faculty-supervised field and/or research experience in a cooperating professional (e.g., business) or community organization. Contents of internship based upon a contractual agreement among the student, department, and business or community organization. (Fall, Spring, Summer)

**GERM 4800. Directed Individual Study. (1-3)** Prerequisite: permission of the department; normally open only to German majors and minors. Individual work on a selected area study. To be arranged with the instructor, generally during the preceding semester, and by special permission only. May be repeated for credit. (On demand)

### GREEK (GREK)

**GREK 1201. Elementary Ancient Greek I. (4)** Beginning survey of elementary Ancient Greek grammar through selected readings. (Alternate years)

**GREK 1202. Elementary Ancient Greek II. (4)** Prerequisites: GREK 1201 or equivalent. Completion of the survey of elementary Ancient Greek grammar; connected readings in elementary to intermediate Biblical and Attic prose. (Alternate years)

**GREK 3800. Directed Individual Reading. (1-3)** Prerequisite: permission of instructor. Individual work on an author or genre to be arranged with the instructor. (On demand)

### GERONTOLOGY (GRNT)

**GRNT 2100. Aging and the Lifecourse. (3)** Cross-listed as SOCY 2100. An interdisciplinary course that examines the phenomenon of aging and its consequences for society from a variety of perspectives. Students participate in lectures, discussions and service learning projects designed to give them a broad overview of the field of gerontology. Emphasis on the wide variation in the aging process and approaches to meeting the needs of the aging population. (Fall, Spring)

**GRNT 2124. Psychology of Adult Development and Aging. (3)** Cross-listed as PSYC 2124. Psychological development through adulthood and old age. Emphasis on processes underlying continuity and change in adulthood, including personality and socialization, cognitive development and the psychophysiology of aging. (Spring)

**GRNT 3115. Health and the Aging Process. (3)** Cross-listed as HLTH 3115. Examination of the physiologic processes of aging as a normal life experience. Study of psychological, nutritional and general health issues designed to facilitate high-level wellness. (Fall)

**GRNT 3132. Aging and Culture. (3) (W)** Cross-listed as ANTH 3132. Examination of the processes of aging in various cultural contexts, with emphasis on the implications for understanding aging within American society. Application of anthropological theories and methods to the study of aging. (On demand)

**GRNT 3267. Sociology of Dying, Death and Bereavement. (3)** Cross-listed as SOCY 3267. Social definitions of death, process of dying, facing death across the lifecourse, grief, bereavement, bioethical issues, impacting individuals and society. (Fall, Spring)

**GRNT 3600. Senior Seminar and Field Experience in Aging. (3) (W)** Prerequisites: completion of at least 9 hours in gerontology curriculum including GRNT 2100, and two primary electives (selected from GRNT 3115, 2124, 4110, and 4250). Capstone course for the minor in Gerontology designed to help students apply theories, research methods, and specific intervention strategies to substantive issues, and critically examine the organizational structure of aging programs and policies. Two seminar hours and six field placement hours per week. (Spring)

**GRNT 3800. Independent Study in Gerontology. (1-8)** Prerequisite: Permission of the instructor and the gerontology undergraduate coordinator. Supervised individual study and/or field-based experience in a topic or area of Gerontology of particular interest to the student. May be repeated for credit but only a total of 3 credits can be counted toward a Gerontology minor. (On demand)

**GRNT 4050. Topics in Gerontology. (1-4)** Investigation of specific issues in Gerontology, either from the perspective of a single discipline or from a multidisciplinary perspective. May be repeated for credit as topics vary. A total of 3 credits can be counted toward minor. (On demand)

**GRNT 4110. Sociology of Aging. (3)** Cross-listed as SOCY 4110. Prerequisite: SOCY 1101 or permission of the instructor. Changing characteristics, aspirations and needs of older adults and their impact upon such institutions as the family, work, the economy, politics, education and health care; emphasis on sociological theories of aging, contemporary research, and the analysis of specific aging policies and programs. (Fall)

**GRNT 4134. Families and Aging. (3)** Cross-listed as SOCY 4134. Prerequisite: SOCY 1101 or permission of instructor. Theories explaining the formation and functioning of American families with emphasis on the impact of the aging of society. Examination of the current demographic trends and expectations of multigenerational families, as well as the future demands and modifications. (Yearly)

**GRNT 4150. Older Individual and Society. (3)** Cross-listed as SOCY 4150. Study of the social and cultural context on the lives of aging individuals in American
society. Will include a focus on expectations, social interactions, and psychological well-being in the context of retirement, caregiving, and health. (Yearly)

GRNT 4250. Aging Programs and Services. (3) Examination of federal, state and local framework of services and programs for the aging. (On demand)

GRNT 4260. Women: Middle Age and Beyond. (3) Cross-listed as HLTH 4260 and WGST 4260. Position of older women in society and the particular problems of and issues for women as they age. (On demand)

GRNT 4270. Intergenerational Relationships & Programs. (3) Exploration of the importance and consequences of intergenerational relationships and the range of programming currently available to encourage interaction between people of different ages. (On demand)

GRNT 4280. The Experience of Dementia. (3) This course provides an overview of Alzheimer’s disease and related disorders using a person-centered perspective. This topic will be explored from the perspectives of the person diagnosed, family members and concerned friends, and both informal and formal caregivers. Students who successfully complete this course will gain a holistic insight into these disorders and their implications for both individuals and society. (On demand)

HOLOCAUST, GENOCIDE, AND HUMAN RIGHTS STUDIES (HGHR)

HGHR 2100. Introduction to Holocaust, Genocide and Human Rights Studies: War Peace, Justice and Human Survival. (3) The relationship between individual and local, state, and global values are examined within the context of war, genocide, peace, and justice. Special emphasis is placed upon problems emergent with the introduction of nuclear weapons and the threat of nuclear war. (Yearly)

HGHR 3050. Topics in Holocaust, Genocide and Human Rights Studies. (3) Study of a special topic. May be repeated for credit as topics vary. (On demand)

HGHR 3800. Independent Study in Holocaust, Genocide and Human Rights Studies. (3) Study of a special topic under supervision of a faculty member. May be repeated for credit as topics vary. (On demand)

HGHR 4050. Topics in Holocaust, Genocide and Human Rights Studies. (3) Study of a special topic. May be repeated for credit as topics vary. (On demand)

HIST 1000. Topics in History. (3) Instruction of a historical topic at an introductory level. May be repeated for credit as topics vary. (Yearly)

HIST 1120. European History to 1660. (3) Political and cultural developments of Western Europe from the fourth century A.D. to the Age of Absolutism. (Fall, Spring, Summer)

HIST 1121. European History since 1660. (3) Cross-listed as INTL 2301. European history from the Age of Absolutism to the present. (Fall, Spring, Summer) (Evenings)

HIST 1160. U.S. History to 1865. (3) American history from the earliest times to 1865. (Fall, Spring, Summer) (Evenings)

HIST 1161. U.S. History since 1865. (3) American history from 1865 to the present. (Fall, Spring, Summer) (Evenings)

HIST 2000. Topics in U.S. History. (3) Discussion of a topic in U.S. History. May be repeated for credit as topics vary. (Yearly)

HIST 2001. Topics in European History. (3) Discussion of a topic in European History. May be repeated for credit as topics vary. (Yearly)

HIST 2002. Topics in Non-Western History. (3) Discussion of a topic in non-Western History. May be repeated for credit as topics vary. Meets non-Western requirement. (Yearly)

HIST 2003. Topics in Comparative History. (3) Discussion of a topic in comparative history. May be repeated for credit as topics vary. (Yearly)

HIST 2004. Topics in Applied History. (3) Discussion of a topic in applied history. May be repeated for credit as topics vary. (Yearly)

HIST 2005. Topics for Freshmen Learning Community. (3) (O) Prerequisite: History Learning Community member and permission of instructor. Seminar based on the History Learning Community theme, in which participants acquire academic and oral expression skills by co-researching and presenting the topic at hand. (Yearly)


HIST 2105. American Slavery and Emancipation. (3) This course surveys the transformation of life and labor for African Americans from the era of North American colonization through the Civil War and Reconstruction. The course will emphasize slavery as
a complex system of labor exploitation and racial
color, the dynamics of slave communities, slave
resistance, emancipation as process, blacks as agents
of their own social and economic change, and the
broad meanings of slavery and freedom in American
life and in world history. Coursework includes reading
of primary and secondary texts. (Alternate years)

HIST 2110. Technology and Science in Society I:
Before the Industrial Revolution. (3) The worldwide
history of science and technology from the Stone Age
to the steam engine, with particular emphasis on the
Scientific Revolution of the 16th and 17th centuries.
Examines the impact of scientific and technological
change on society and the ways in which society
shaped the development of science and technology.
Scientific and technical background is not a
prerequisite. (Alternate years)

HIST 2111. Technology and Science in Society II:
Since the Industrial Revolution. (3) The history of
science and technology in society from the 18th
century to the present. Examines the inter-
connections of science and technology with society,
with particular attention to the U.S. Designed for all
students, regardless of scientific and technical
background. (Alternate years)

HIST 2120. American Military History. (3) A survey of
the development and organization of military practice
from the colonial period to the present. (Spring)

HIST 2125. Democracy in America: A Historical
Perspective. (3) This course considers the history of
politics and government in the United States by
examining the history of American democracy in
theory and practice. To what extent have American
politics and government been democratic? What does
the history of democracy in America suggest about the
future of politics and society in the United States and
the world? This course will examine the rise of parties
and mass politics, machine politics and reform
movements, the history of citizenship and suffrage as
relates to race, ethnicity, and gender, the relationship
between war and democracy, and the problem of
reconciling democratic ideals with existing social and
economic hierarchies. (Alternate years)

HIST 2130. Introduction to Historic Preservation. (3)
Techniques available in the United States to identify
and preserve historically significant structures,
buildings, sites, areas and objects. (Alternate years)

HIST 2135. Introduction to Museums & Historic
Sites. (3) This course introduces students to the
history and functions of museums and historic sites.
Through lecture, discussion, and field trips, students
will learn about the role of museums and historic sites
in American society. (Alternate years)

HIST 2140. Disease and Medicine in History. (3)
Development of medical knowledge, trends in the
techniques and availability of medical and psychiatric
care, impact of disease and medicine, on selected
problems in world history. (On demand)

HIST 2150. U. S. Women’s History to 1877. (3)
Cross-listed as WGST 2150. A survey of women’s
experience in the U. S. from colonization through the
civil war and reconstruction. Special emphasis on the
 evolution of women’s public roles and the impact of
class, race, and region in shaping women’s lives.
(Alternate years)

HIST 2151. U.S. Women’s History since 1877. (3)
Cross-listed as WGST 2251. A survey of women’s
experience in the U.S. from reconstruction to the
present. Special emphasis on work, family, and
feminism, and the impact of class, race, and region in
shaping women’s lives. (Alternate years)

HIST 2152. European Women’s/Gender History. (3)
Cross-listed as WGST 2252. An exploration of
women’s changing roles in European Society and
politics, covering topics of religion, work, family, and
activism. (Alternate years)

HIST 2155. Southern Women’s History. (3) This
course surveys the history of women’s experiences in
the American South. Through readings, lectures, and
discussion students will learn about the importance of
race, class, and gender in shaping southern women’s
lives. (Alternate years)

(3) Cross-listed as AFRS 2160. The course explores
the events and circumstances that brought Africans to
the Americas and the experience of these peoples
during the time that slavery persisted in the South.
Emphasis will be upon the economic and cultural
systems. (Fall)

(3) Cross-listed as AFRS 2161. This course explores
the African-American experience from the Civil War to
the present. It follows the struggle of freed slaves and
free people of color to take advantage of the promise
of emancipation and the changing place of African-
Americans in their society. (Spring)

HIST 2200. Asian Civilization. (3) An investigation of
the philosophical, religious, social, political and
economic foundations of the great Asian civilizations.
Emphasis will be placed on understanding those
traditions that influence Asian societies today and a
comparison of those traditions to Western traditions.
Meets non-Western requirement. (Fall)

HIST 2201. History of Modern Asia. (3) Cross-listed
as INTL 2201. Focus on the rise of modern Asia from
the period just prior to the armed intervention of
Western European nations. Emphasis will be placed
on the impact of imperialism, colonialism, and the
rise of Asian nationalism on Asian societies. Meets
non-Western requirement. (Spring)

HIST 2206. Colonial Latin America. (3) A survey of
major political, economic, and cultural developments
from earliest times to 1826. Meets non-Western
requirement. (Yearly)
HIST 2207. Modern Latin America. (3) Cross-listed as INTL 2401. A survey of Latin American history from 1826 to the present with emphasis on the economy and society. Special attention to twentieth-century revolutions and the role of the United States in Latin America. Meets non-Western requirement. (Fall)

HIST 2210. Pre-Colonial Africa. (3) A survey of major political, economic and religious developments in Sub-Saharan Africa from earliest times to the early 19th century. Meets non-Western requirement. (Fall)

HIST 2211. Modern Africa. (3) Cross-listed as INTL 2101. A survey of major developments in 19th and 20th century Sub-Saharan Africa, with emphasis on the European conquest, the colonial period, and the triumph of modern African nationalism. Meets non-Western requirement. (Spring)

HIST 2215. A History of Muslim Societies. (3) This course covers the history of Muslim societies from the 6th century until the present times. It focuses on the following issues: Birth and expansion of Islamic faith; political, cultural, artistic, intellectual and social history of Muslim societies; relationship between the Islamic World and the Christian Europe; impact of imperialism, nationalism and modernization of Muslim societies; and the efforts to reassert Islamic identity in an era of tightening globalization. Meets non-western requirement. (Alternate years)

HIST 2216. The Modern Middle East. (3) Cross-listed as RELS 2216. An introduction to the history of this important and dynamic region. The course focuses on the issues that have defined the Middle East in the recent past and provides students with the historical context needed to understand the region, its peoples, and its conflicts in greater depth. Meets non-Western requirement. (Alternate years)

HIST 2250. Russian History from Earliest Times to 1801. (3) Development of the Russian people, focusing upon the rise and fall of the Kievan state, the impact of the period of Tartar domination, the rise of Moscovy, and the growth of the Tsarist autocracy before the reign of Alexander I. (Alternate years)

HIST 2251. Russian History from 1801 to 1917. (3) Decline and fall of the Tsarist empire, focusing upon the efforts of the last four rulers to perpetuate the monarchy and upon the factors working against the effort. (Alternate years)

HIST 2252. Russian History from 1917 to the Present. (3) Development of Soviet Russia, focusing upon the October 1917 Revolution, Lenin’s years of rule, Stalin’s rise to power, the Five Year Plan and the years since World War II. (Alternate years)

HIST 2260. Britain to 1688. (3) British history with emphasis on institutional, cultural, and economic developments. (Alternate years)

HIST 2261. Britain since 1688. (3) Continuation of HIST 2260 with some treatment of the British Empire. (Alternate years)

HIST 2271. Modern France (1750 to the Present). (3) A study of France, from the Enlightenment and the Revolution of 1789, across the revolutions and wars of the 19th and 20th centuries, to the present. (Alternate years)

HIST 2281. Modern Germany. (3) A survey of German history in the 19th and 20th Centuries covering the emergence of a unified Germany, the Wilhelmine Empire, the Weimar Republic, the Third Reich, the two Germanys and reunification. (Alternate years)

HIST 2284. World War II: The European Theater. (3) Major campaigns of World War II with emphasis upon the European theater of operations. (Alternate years)

HIST 2285. World War II: The Pacific Theater. (3) A description and analytical survey of the military campaigns in the Pacific theater of operations. (Alternate years)

HIST 2297. History of North Carolina, 1500 to the Present. (3) An overview of North Carolina’s historical development focusing on the social, economic, and political events that have shaped the state. (Fall, Spring)

HIST 2400. History Internship. (1-3) Applied historical techniques utilizing modern methodology and experiences in off-campus institutions or on historical sites. Graded on a Pass/No Credit basis. (On demand)

HIST 2600. History Skills Seminar. (3) O, W Prerequisite: major in History. An introduction to, and practicum of, the skills needed for historical investigation and communication; both in written and oral formats. Students must achieve a grade of C or above to satisfy major requirements. (Fall, Spring, Summer) (Evenings)

HIST 3000. Topics in U.S. History. (3) Examination of a topic in U.S. History. May be repeated for credit as topics vary. (Yearly)

HIST 3001. Topics in European History. (3) Examination of a topic in European History. May be repeated for credit as topics vary. (Yearly)

HIST 3002. Topics in Non-Western History. (3) Examination of a topic in non-Western History. May be repeated for credit as topics vary. Meets the History major non-Western course requirement. (Yearly)

HIST 3003. Topics in Comparative History. (3) Examination of a topic in comparative history. May be repeated for credit as topics vary. (Yearly)

HIST 3004. Topics in Applied History. (3) Examination of a topic in applied history. May be repeated for credit as topics vary. (Yearly)
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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
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<tbody>
<tr>
<td>HIST 3010</td>
<td>History and Culture through Film, Non-Western. (3)</td>
<td></td>
<td>An examination of twentieth-century historical themes in cultural context through films and scholarly monographs. May be repeated as topics vary. Meets non-Western requirement. <em>(On demand)</em></td>
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<tr>
<td>HIST 3011</td>
<td>History and Culture through Film. (3)</td>
<td></td>
<td>An examination of twentieth-century historical themes in cultural context through films and scholarly monographs. May be repeated as topics vary. <em>(On demand)</em></td>
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<tr>
<td>HIST 3012</td>
<td>History of Greece. (3)</td>
<td></td>
<td>From the beginning of civilization in Greece to the 1st Century B.C. <em>(Alternate years)</em></td>
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<tr>
<td>HIST 3014</td>
<td>History of Rome. (3)</td>
<td></td>
<td>From the beginning of civilization in Italy to the 5th Century A.D. <em>(Alternate years)</em></td>
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<tr>
<td>HIST 3016</td>
<td>Medieval Europe. (3)</td>
<td></td>
<td>Europe from the decline of the Roman Empire (ca. 300 A.D.) to 1450. Major topics include: the spread of Christianity, the Frankish Monarchy, the Crusades, the revival of towns, the growth of centralized monarchies, and the Black Death and its consequences. <em>(Alternate years)</em></td>
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<tr>
<td>HIST 3019</td>
<td>Renaissance and Reformation Europe. (3)</td>
<td></td>
<td>European history in the era of Renaissance and Reformation, 1400 to 1650, with special attention to art and comparative analysis. <em>(Alternate years)</em></td>
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<tr>
<td>HIST 3100</td>
<td>The Age of Revolutions in Europe (1789 to 1871). (3)</td>
<td></td>
<td>Study of the role of the major revolutions of the nineteenth century in the making of modern politics. <em>(Alternate years)</em></td>
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<tr>
<td>HIST 3105</td>
<td>Nineteenth Century Europe, 1814-1914. (3)</td>
<td></td>
<td>Political developments in European history from the Congress of Vienna: liberalism, socialism, nationalism, imperialism and the diplomacy leading to World War I. <em>(Alternate years)</em></td>
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<tr>
<td>HIST 3106</td>
<td>Twentieth Century Europe, 1914 to the Present. (3)</td>
<td></td>
<td>Causes and results of World War I, rise of new governments, collapse of collective security, World War II and the postwar period. <em>(Fall)</em></td>
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<tr>
<td>HIST 3107</td>
<td>Eastern Europe After 1945. (3)</td>
<td></td>
<td>The first half of this course examines the impact of Communism on Eastern Europe, including its effects on daily life, the economy and politics. The second half covers Eastern Europe’s troubled transition after 1989, looking at the difficulties this region has faced while trying to create democratic governments and market economics. <em>(Alternate years)</em></td>
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<tr>
<td>HIST 3108</td>
<td>History of Sexuality. (3)</td>
<td></td>
<td>Cross-listed as WGST 3131. An exploration of the roots of our modern attitudes toward sexuality beginning with ancient Greece and Rome, Judaism, and Christianity. Examination of changing attitudes and practices from the Enlightenment to the Victorians. Discussion of marriage, fertility control, abortion, prostitution, and homosexuality. <em>(Alternate years)</em></td>
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<tr>
<td>HIST 3110</td>
<td>Irish History. (3)</td>
<td></td>
<td>History of Ireland from prehistory to the present. Course examines the roots of Ireland’s present conflicts in the long history of the English-Irish interaction. <em>(Alternate years)</em></td>
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<tr>
<td>HIST 3111</td>
<td>World War I. (3)</td>
<td></td>
<td>World War I from the outbreak of hostilities to the peace settlement. Impact on the combatant nations and subsequent development of the World. <em>(Yearly)</em></td>
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<td>HIST 3112</td>
<td>The Third Reich. (3)</td>
<td></td>
<td>The origins of Nazism, the seizure of power, Hitler's domestic and foreign policy, and the collapse in World War II. <em>(Alternate years)</em></td>
</tr>
<tr>
<td>HIST 3113</td>
<td>The Holocaust. (3)</td>
<td></td>
<td>Study of the roots, conception, evolution and execution of the Holocaust, and its impact on culture and society. This course uses primary sources and eyewitness accounts to examine the Shoah from the perspectives of the perpetrator, rescuer, and bystander. <em>(Yearly)</em></td>
</tr>
<tr>
<td>HIST 3114</td>
<td>Shakespeare's England. (3)</td>
<td></td>
<td>England during the century surrounding the life of William Shakespeare using literature from the period as a window through which to explore issues of political, religious, economic, and social change. <em>(Alternate years)</em></td>
</tr>
<tr>
<td>HIST 3115</td>
<td>Health and Healing in Africa. (3)</td>
<td></td>
<td>This course provides an historical context for some of the major healthcare challenges facing Africa today from malaria and river blindness to Ebola and AIDS. Rather than uncritically accepting the impression of Africa as a ‘land of disease’ the course will trace the history, health and healing from the pre-colonial era through the period of colonial domination, and since political independence. Meets non-Western requirement. <em>(Alternate years)</em></td>
</tr>
<tr>
<td>HIST 3116</td>
<td>History of Modern China. (3)</td>
<td></td>
<td>China from 1600 to the present covering the founding of the last imperial dynasty, the arrival of the West, and China's struggle for unity in the twentieth century. Meets non-Western requirement. <em>(Alternate years)</em></td>
</tr>
<tr>
<td>HIST 3117</td>
<td>Revolutionary Movements in Modern China. (3)</td>
<td></td>
<td>Examination of popular uprisings in nineteenth-century China and their relationship to China's twentieth-century revolutionary experience. Meets non-Western requirement. <em>(Alternate years)</em></td>
</tr>
<tr>
<td>HIST 3118</td>
<td>History of Modern Japan. (3)</td>
<td></td>
<td>Japan from about 1600 to the present covering Japan’s intellectual, social and economic transformation from an agricultural society to an industrial power. Meets non-Western requirement. <em>(Alternate years)</em></td>
</tr>
<tr>
<td>HIST 3119</td>
<td>Central Asia from 1800 to the Present. (3)</td>
<td></td>
<td>This course surveys the history of Central Asia from the Russian conquest up through the collapse of the Soviet Union and the era of independence. Specific consideration will be given to the former-Soviet Republics of Kazakhstan, Uzbekistan, Tajikistan, Kirgizstan, and Turkmenistan, as well as Afghanistan, Mongolia, and Xinjiang in China. Particular themes and topics to be addressed in this course vary. Meets non-Western requirement. <em>(Alternate years)</em></td>
</tr>
</tbody>
</table>
course include colonization, revolution, reform, nationalism, Islam, and international relations. Meets non-Western requirement. (Alternate years)

HIST 3174. Resistance and Adaptation: Indian Peoples Under Spanish Rule. (3) A historical survey of the interactions of indigenous peoples of the western hemisphere with Spanish colonial authorities from the conquest era to 1825. The course focuses on the indigenous peoples of Mexico, Peru, Chile, and Argentina. Meets non-Western requirement. (Alternate years)

HIST 3175. Reform, Riots, and Rebellions in Colonial Spanish America, 1692-1825. (3) This course examines the economic, political, and cultural origins of violent conflict in colonial Latin America, culminating with an analysis of the revolutions for independence. Meets non-Western requirement. (Alternate years)

HIST 3176. History of Mexico. (3) A survey of Mexican history from pre-Columbian times to the present. Special emphasis will be given to the Spanish conquest, the colonial economy, the independence period, the revolution, and relations with the United States. Meets non-Western requirement. (Alternate years)

HIST 3177. The Cuban Revolution. (3) An examination of the economic and political forces that led to the Cuban revolution. Significant background material from the 19th and early 20th centuries will be presented in addition to an analysis of the revolution and post-revolutionary events. Meets non-Western requirement. (Alternate years)

HIST 3178. History of Brazil. (3) Cross-listed as AFRS 3278 and LTAM 3278. A study of Brazilian history since 1500, with an emphasis on social and economic history. The course emphasizes slavery and race relations, the emergence of export economics, rural protest movements, the effects of urbanization and industrialization, and the rise and fall of the military dictatorship. Meets non-Western requirement. (Alternate years)

HIST 3179. Authoritarianism in Latin America. (3) Cross-listed as LTAM 3279. A study of authoritarian rule and popular resistance to authoritarianism in one or more selected Latin American countries, including, but not limited to, Argentina, Brazil, and Chile. May be repeated for credit as topics vary. Meets non-Western requirement. (Alternate years)

HIST 3180. Caribbean History. (3) Cross-listed as AFRS 3220 and LTAM 3220. Covering the sweep of history from European/indigenous contact, through the construction of a plantation regime based on African slave labor, and up to the present day, this course explores the spread of colonialism, the dynamics of slavery, and the tumult of abolition and national independence movements. The Caribbean Sea will be examined as a region, emphasizing the ties uniting the islands and the circum-Caribbean coasts. The region’s past – including empire and imperial conflict, racial oppression and interaction, and international contact – and its legacies will be discussed in relation to political economics, race, and contemporary culture. Meets non-Western requirement. (On demand)

HIST 3181. Afro-Latin American History. (3) (W) Cross-listed as AFRS 3270 and LTAM 3270. This course explores the African Diaspora in Latin America ranging from the Caribbean Sea to the Rio de la Plata. From slavery, to fighting for freedom in the Spanish-American Wars of Independence, to forging new notions of citizenship in twentieth century Brazil, African-descended peoples have an important place in Latin America’s historical past. According special attention to regions with concentrated populations of African-descended peoples, this course reveals the vibrant history of Afro-Latin America. Meets non-Western requirement. (On demand)

HIST 3190. Slavery, Racism and Colonialism in the African Diaspora. (3) Cross-listed as AFRS 3260 and LTAM 3260. This course is designed to explore how race and racism, slavery, and colonialism served as principal institutions and constructs shaping the experience between Africa and the emerging African Diaspora in the New World. Students will consider how the maintenance of Western social, economic, and political superiority materialized as functions of these three important historical developments. Meets non-Western requirement. (On demand)

HIST 3201. Colonial America. (3) This course examines the diverse and dynamic societies of colonial North America, with particular emphasis on Britain’s thirteen mainland colonies. The course begins with Europe’s age of discovery and exploration and ends on the eve of the imperial crisis that led to American independence. Major themes and topics include religious and political ideals of the colonists, labor systems, economic development, and the cultural exchanges between Europeans, Africans, and native Americans. (Fall)

HIST 3202. American Revolution, 1750-1815. (3) The American Revolution was both a military conflict fought over the issue of colonial independence and a catalyst for sweeping political and social change. This course examines the Revolution as a political, social, and military phenomenon, focusing on the transformation of political culture and the experiences of ordinary Americans. (Spring)

HIST 3203. The Antebellum U.S., 1800-1860. (3) Political and social changes accompanying rapid economic transformation between 1800 and 1860. Emphasis on the sectional tensions between North and South. (Alternate years)

HIST 3211. Civil War and Reconstruction, 1860-1877. (3) The American people in war and the postwar adjustment. Emphasis on the political, social and economic conditions of the North and South during the Civil War and Reconstruction period. (Alternate years)

HIST 3212. History of the South to 1865. (3) The South from colonial origins through the Civil War.
Emphasis on the political and cultural developments which ultimately led the South to secession and the creation of a distinct Southern nation in the Confederacy. (Yearly)

HIST 3313. History of the South since 1865. (3) Southern history from Reconstruction to the present. Emphasis on race and class relations as the South copes with change. Special attention to the Civil Rights Movement, industrialization and urbanization. (Yearly)

HIST 3215. Southerners. (3) (W) Prerequisites: ENGL 1101 and 1102. A writing-intensive course that explores the distinctive characteristics of Southerners through study of biographies and autobiographies. The varied backgrounds of Southerners and selected Americans from other regions will be studied. (Alternate years)

HIST 3218. Racial Violence, Colonial Times to Present. (3) Cross-listed as AFRS 3218. This course examines the ways in which African-Americans and Whites used violence both as part of struggles for liberation and freedom as well as repression from the colonial period to the present in the United States. The focus will be on broader processes of social, political, and cultural change and at efforts to build cooperation. (On demand)

HIST 3240. African-Americans and the Legal Process. (3) Cross-listed as AFRS 3240. This course explores the unique role law has played in the African American experience, establishing the status of persons of African descent in America. Students will investigate how the legal history of African Americans has shaped American race relations over the past 400 years by tracing the evolution of race, racism, and racial formations as a function of America’s legal system. (On demand).

HIST 3241. United States Social History to 1860. (3) (W) Ideas, groups and institutions that shaped early America, with emphasis upon the changes in family, religion, community, and class. (Alternate years)

HIST 3242. United States Social History since 1860. (3) (W) Ideas, groups and institutions that evolved from the Civil War to the present, with emphasis upon the formation of modern-day American society. (Alternate years)

HIST 3252. United States in the 20th Century, 1932-Present. (3) Political, economic, social and intellectual aspects of American democracy from the New Deal to the Great Society. Special emphasis on the New Deal and post-New Deal reform as well as America's role in world affairs. (Spring)

HIST 3256. United States Foreign Relations, 1901 to the Present. (3) American diplomatic history from the administration of Theodore Roosevelt to the present. Special emphasis on the interaction between domestic, economic, political and social changes, and the formulation of American foreign policy. (Alternate years)

HIST 3260. The United States and Latin America. (3) An examination of the complex relationship between the United States and Latin America in the nineteenth and twentieth centuries. Topics include U.S. territorial and economic expansion, cultural imperialism, and Latin American efforts to safeguard national sovereignty and to achieve economic development. (Alternate years)

HIST 3280. Blacks in Urban America. (3) Cross-listed as AFRS 3280. African-Americans have been part of the urban scene since the colonizing of the Americas. The course will examine the ways in which their presence in cities has both exemplified and contradicted the understanding of both urban development and race relations in America from colonial times to the present. (On demand)

HIST 3281. American Cities. (3) U.S. urban history. The city as a physical place, as a socio-political environment and as a cultural center. Emphasis on the social developments caused by urbanization. (Alternate years)

HIST 3288. History of the American West. (3) Influence of the frontier on the historical development of the U.S. Emphasis on the trans-Mississippi Western United States. (Alternate years)

HIST 3300. World History for Teachers. (3) This seminar style course enables aspiring history teachers to acquire an advanced command of World History and the ability to teach this subject using a variety of innovative teaching techniques. Students will conduct in-depth topics studies, develop concrete implementation models, and assessment methods for middle and high school classroom use. (Fall)

HIST 3310. Teaching History. (3) This interdisciplinary hands-on seminar prepares students for a career in history education. Using historical developments of the 20th Century as a starting point, students acquire practical, discipline-specific didactical skills native to the history profession and develop materials on NCSCS themes at the grade level they anticipate teaching. This seminar is geared toward advanced education students and history students seeking teaching licensure. (Yearly)

HIST 3800. Independent Projects in History. (3) Prerequisite: Permission of instructor. Individual research or readings on an historical topic. May be repeated for credit with permission of the coordinator or instructor. (On demand)

HIST 4000. Topics in American History. (3) Prerequisites: HIST 2600 and a major in History. Investigation of a topic or theme in U.S. History. Students must achieve a grade of C or above to satisfy major requirements. (Fall, Spring, Summer) (Evenings)

HIST 4001. Topics in European History. (3) Prerequisite: HIST 2600 and a major in History. Investigation of a topic or theme in European History. Students must achieve a grade of C or above to satisfy
HIST 4002. Topics in Non-Western History. (3)
Prerequisite: HIST 2600 and a major in History. Investigation of a topic or theme in Non-Western History. Meets the history major non-Western course requirements. Students must achieve a grade of C or above to satisfy major requirements. (Yearly)

HIST 4003. Topics in Comparative History. (3)
Prerequisites: HIST 2600 and a major in History. Investigation of a topic or theme in Comparative History. Students must achieve a grade of C or above to satisfy major requirements. (On demand)

HIST 4004. Topics in Applied History. (3)
Prerequisites: HIST 2600 and a major in History. Investigation of a topic or theme in Applied History. Students must achieve a grade of C or above to satisfy major requirements. (On demand)

HIST 4300. Introduction to Public History. (3) (W)
Prerequisite: major in History. This course will provide an overview of the main subfields in the field of Public History. Students will learn the fundamentals of Museum Studies, Historic Preservation, and other fields at the discretion of the instructor. (Yearly)

HIST 4600. Senior Research Seminar. (3) (W)
Prerequisites: HIST 2600 with a grade of C or above; HIST 4000 with a grade of C or above; and a major in History. A research seminar designed around a specific topic or theme, requiring reading, analysis, discussion, peer review, and a substantial paper. (Fall, Spring, Summer) (Evenings)

HIST 4797. Honors Methods and Practice. (3)
Prerequisite: Permission of the instructor. The first course in a required two-course sequence for Honors in History. Prepares students for the research and writing of an honors thesis by providing training in historiography, research methods, source development, and writing. During the course, students meet separately with their thesis advisor to craft their prospectus. (Fall)

HIST 4799. Honors Research and Thesis. (3) (W)
Prerequisites: HIST 4797 with grade of A, or with a grade of B and permission of the Honors Director. This course is the final course in a required two-course sequence for Honors in History. It involves the preparation and presentation of an acceptable Honors thesis or its equivalent. Completion of a thesis earning a passing grade meets the requirement for HIST 4600; a grade of A is required to earn honors. (On demand)

HLTH 2101. Healthy Lifestyles. (3)
Overview of issues related to personal health, including healthy behaviors, lifestyles, and outcomes. (Fall, Spring, Summer)

HLTH 3000. Topics in Public Health. (1-3)
Prerequisite: permission of the instructor. Additional prerequisites and credit hours vary with topics. Special topics for intermediate level undergraduates. May be repeated for credit as topics vary. (On demand)

HLTH 3011. Foundations of Public Health. (3)
Prerequisite: Pre-Public Health (PRPH) majors, HLTH minors, or permission of the instructor. Introduction to the field of public health, including its history, content areas, scope, and paradigms of professional practice. (Fall, Spring)

HLTH 3012. Comparative Healthcare Systems. (3)
Prerequisite: open to Public Health Sciences majors only. Examination of organizations, structures, and relationships in national and international healthcare systems and the associated financial, legal, and policy issues. (Spring)

HLTH 3013. Behavior Change Theories and Practice. (3)
Prerequisite: BSPH majors only. Overview of theoretical approaches to health behavior adherence and compliance, including increasing health enhancing behaviors and sustaining healthy behaviors over time. (Fall)

HLTH 3014. Research and Statistics in Health. (3)
Prerequisite: open to Public Health Sciences majors only. Corequisite: HLTH 3014L. Examination of the use of research methods and statistics in public health, including issues related to research design, measurement, sampling, and the application and interpretation of statistical methods. (Spring)

HLTH 3014L. Research and Statistics in Health LAB. (1). Prerequisite: BSPH majors only. Corequisite: HLTH 3014. Activities designed to complement HLTH 3014. Meets once a week for 1.5 hours. (Spring)

HLTH 3015. Public Health Education and Promotion. (3)
Prerequisite: open to Public Health Sciences majors only. Overview of principles and strategies for health education in public health practice settings. (Fall)

HLTH 4090. International Comparative Health Systems: Western Europe. (3) Cross-listed as NURS 4090. A two-week study tour to explore the cultures, social, and health care systems in Western Europe and to compare them with systems in the United States. Participants will visit a variety of health care
sites and attend presentations by practitioners and educators. They will have opportunities to interact with people from the host countries and visit a variety of cultural and historic sites. (Summer)

HLTH 4102. Healthcare Administration. (3) Prerequisites: HLTH 3102; open to Public Health Sciences majors only. Overview of basic concepts and issues within the administration, financing, and policy of healthcare systems. (Fall)

HLTH 4103. Environmental Health: A Global Perspective. (3) Prerequisite: BSHP majors only or permission of the instructor. Introduction to environmental and occupational health issues and their implications for individual and population health. (Fall)

HLTH 4104. Epidemiology. (3) Prerequisite: BSHP majors or IDHS and HLTH minors only, or permission of the instructor. Introduction to basic principles and methods used in epidemiology to detect and control disease in populations. (Fall, Spring)

HLTH 4105. Program Planning and Evaluation. (3) Prerequisite: HLTH 3105 and BSHP majors only. Corequisite: HLTH 4105L. Use of program planning and behavior change models to design and evaluate theory-based public health promotion and education initiatives. (Spring)

HLTH 4105L. Program Planning and Evaluation LAB. (1) Prerequisites: HLTH 3105 and BSHP majors only. Corequisite: HLTH 4105. Activities designed to complement HLTH 4105. Meets once a week for 1.5 hours. (Spring)

HLTH 4210. Health Promotion and Risk Reduction. (3) Overview of health promotion and risk reduction techniques, including theories, strategies, and statistics. (On demand)

HLTH 4220 Mental and Emotional Well-being. (3) Examination of mental and emotional health from a wellness perspective. (On demand)

HLTH 4230. Drugs and Society. (3) Examination of use, misuses, and abuse of natural and synthetic chemicals in today’s society, including prevalence, risk factors, and prevention strategies. (On demand)

HLTH 4240 Injury Prevention through the Life Span. (3) Introduction to intentional and unintentional injuries, including prevalence, risk factors, and prevention strategies. (On demand)

HLTH 4250. Adolescent Health and Sexuality. (3) Examination of adolescent health sexuality issues in today’s society. (On demand)

HLTH 4260. Women: Middle Age and Beyond. (3) Cross-listed as GRNT 4260 and WGST 4260. Position of older women in society and the particular problems of and issues for women as they age with special attention to health issues. (On demand)

HLTH 4270. Health Consumerism. (3) Examination of individual health consumer issues in the health marketplace. (On demand)

HLTH 4280. Global Health Issues. (3) Prerequisite: BSHP majors or IDHS and HLTH minors only, or permission of the instructor. Introduction to current issues in global health including disparities, root causes, and strategies for resolution. (Fall or Spring)

HLTH 4290. Health Management Information Systems. (3) Overview of the technical, organizational, and management issues confronted by healthcare professionals in the selection, implementation, and management of healthcare information systems. (On demand)

HLTH 4400. Internship. (3) (W) Prerequisites: BSHP majors only and permission of the instructor. Practical experience in a public health setting that complements students’ academic and professional goals. Arranged with BSHP Internship Coordinator. (Fall, Spring, Summer)

HLTH 4600. Capstone. (3) (W) Prerequisites: BSHP majors only and permission of the instructor. A culminating project or experience encompassing the five areas of public health: health behavior, environmental health, biostatistics, epidemiology, and health administration that complements students’ academic and professional goals. (Fall, Spring, Summer)

HLTH 4800. Independent Study. (1-6) Prerequisite: Permission of the instructor. Directed individual study that may take the form of initiating, designing, and/or conducting an original community-based or research project, or critique and synthesis of existing community or research issues. May be repeated for credit. (On demand)

HLTH 4900. Undergraduate Research. (1-4) Prerequisite: Permission of the instructor. Opportunity for advanced undergraduate students to work on community or research projects conducted by faculty in their field of interest. May be repeated for credit. (On demand)

UNIVERSITY HONORS PROGRAM (HONR)

All courses require permission of the University Honors Program.

HONR 1100. Freshman Honors Seminar. (1) Prerequisite: Freshman standing in the University Honors Program. A course designed to introduce university honors students to scholarship, service, and leadership opportunities in the honors program, the university, and larger community. Class activities will include guest speakers, projects, and workshops. Students will create a final portfolio. (Fall)

HONR 1701. War, Peace, Justice and Human Survival. (3) Cross-listed as LBST 2101 Honors Section only. The relationships between individual and local, state, and global values are examined
within the context of war, peace and justice. Special emphasis is placed upon problems emergent with the introduction of nuclear weapons and the threat of nuclear war.

HONR 1702. Economic Welfare and International Communities. (3) (W) Cross-listed as LBST 2102 Honors Section only. Study of the impact of economic institutions on international communities. Focus on development theories, multinational institutions, international debt, and Third World response, international poverty and income distribution and the economic impact on international communities of military spending.

HONR 2701. Enrichment Seminar. (2) Students attend a variety of events from the visual arts and performing arts as well as special lectures. Through direct contact, this course is intended to introduce students to events, both contemporary and traditional, to which they would not otherwise be exposed. May be repeated for credit as topics and coursework may vary. Offered on a Pass/No Credit basis.

HONR 2750. Community Service Laboratory. (1) The purpose of this laboratory experience is to investigate and demonstrate how individuals can make a difference in the human condition. Students enrolled attend weekly seminar meetings. Relationships between the volunteer individual and community agencies served are examined within the context of problem-solving strategies and social/political justice. Impact of volunteerism upon human rights is explored. May be repeated for credit as topics and coursework may vary. Offered on a Pass/No Credit basis.

HONR 3700. University Honors Topics. (3) A small discussion-oriented class taught by faculty members from different disciplines on interdisciplinary topics. May be repeated for credit as topics and coursework may vary. (On demand)

HONR 3701. Science, Technology and Human Values. (3) Cross-listed as LBST 2213 Honors section only. A study of historical and contemporary issues in the relationship between science and technology, on the one hand, and ethical, religious and social concerns on the other hand.

HONR 3702. Seminar in Cultural Values and Social Issues. (3) (W) An examination of social and cultural topics using a writing-intensive and interdisciplinary approach. May be repeated for credit as topics and coursework may vary.

HONR 3790. University Honors Thesis. (3) Prerequisites: Six hours of Honors coursework and permission of thesis director and University Honors Committee. Honors project directed by faculty member. Students may also present thesis ideas for group discussion and critical feedback. May be repeated for credit.

HUMANITIES, TECHNOLOGY, & SCIENCE (HTAS)

HTAS 2100. Introduction to Humanities, Technology, and Science. (3) An introduction to ways of considering interrelationships among three of the major dimensions of our culture: its science, its technology, and its humanistic orientation. Students taking this course will be deemed to have met the requirements for the "Ethical and Cultural Critique" area of the LBST requirements and will not have to take an additional course to satisfy that area of General Education. (Yearly)

HTAS 3800: Independent Study in Humanities, Technology, and Science. (3) Study of a special topic under supervision of a faculty member. May be repeated for credit as topics vary. (On demand)

INTERNATIONAL BUSINESS (IBUS)

IBUS 3000. Topics in International Business. (3) Prerequisites: Permission from the Director of Undergraduate International Business Programs. Topics from areas of international business. This course may be repeated for credit as topics vary. (On demand)

IBUS 3400. International Business Internship. (3) Prerequisites: International Business major, Junior or Senior in good standing, permission of the Director of Global Business Programs (GBP). This internship provides a meaningful work experience in a field of International Business. Internship proposals can be initiated by the student or by the Director of GBP. The internship requires 150 hours of supervised employment. Interested students should consult the Director of GBP to discuss availability of positions. An internship proposal form, available from the Director of GBP, must be completed and approved prior to registration. Graded on a Pass/No Credit basis. Cannot be repeated for credit or taken for credit at the same time or following any other internship for credit. (Fall, Spring, Summer)

MANAGEMENT INFORMATION SYSTEMS (INFO)

INFO 2130. Introduction to Business Computing. (3) Introduction of computer methods to solve business problems. Emphasis on understanding fundamental hardware and software concepts, selecting and using appropriate hardware and software needed for making various business decisions, and developing practical methods for using the computer to solve quantitative business problems. (May not be taken for upper-level credit in business, but may be taken for general University credit.) (Fall, Spring, Summer) (Evenings)

INFO 3000. Topics in Management Information Systems. (3) Prerequisite: INFO 3233 with a grade of C or above. Topics from the area of Management Information Systems. May be repeated for credit. (On demand)
INFO 3130. Management Information Systems. (3) Prerequisites: ACCT 2121, 2122; ECON 2101, 2102; MATH 1120; INFO 2130; and STAT 1220 with grades of C or above; and Junior standing. Impact of information systems on management decision-making activities. Principles of the structure and analysis of information flows within an organization. Emphasis on database accumulation and generation, capabilities of information processing, system function (e.g., file creation, report generation, etc.) and evaluation and modification of information systems. (Fall, Spring, Summer) (Evenings)

INFO 3200. Foundations in Business Computing. (3) Introduction to computer systems in business with emphasis on the capabilities of computer systems (hardware & software) and skills needed to effectively use computerized decision tools for typical business problems. (Cannot be taken for credit toward any undergraduate degree within the Belk College of Business.) (On demand)

INFO 3211. Technical Support. (3) A study of technical support and help desk concepts. Emphasis on building skill sets in diagnosing and solving user and software related problems. Topics include support management techniques, help desk operations, and support performance evaluation. (On demand)

INFO 3229. Business Data Communications and Information Security. (3) Prerequisite: INFO 3130 with a grade of C or above. A study of the current and potential impact of computer data communications technologies and information security on business operations and productivity. Topics include: designing, planning and implementing solutions in such areas as local area networks, networked applications, and information assurance. (Fall, On demand)

INFO 3231. Business Applications Development. (3) Prerequisites: INFO 3130 with a grade of C or above. A study in the development of business applications software. Course emphasizes graphical user interface development using object-oriented, event-driven programming methods and techniques with a high-level development tool such as Visual Basic or Java. (Spring)

INFO 3232. International Information Systems Management. (3) Prerequisite: INFO 3130 with a grade of C or above. Study of issues and challenges relating to International Information Systems. Topics include: planning and strategic implications of using global information systems and technology; management of global information flows; and, the problems of integrating technology, systems, and people across the globe. (On demand)

INFO 3233. Data and Information Management. (3) Prerequisites: INFO 3130 with a grade of C or above; and Junior standing or permission of the department. A study of the effective management and utilization of organizational data resources in order to design and implement database management systems (DBMS) for business applications. Exploration of basic concepts of database systems and use of the computer to build and manipulate corporate databases. (Fall, Spring)

INFO 3234. Business Information Systems Analysis and Design. (3) Prerequisites: INFO 3231 and INFO 3233 with a grade of C or above. Examination of business information systems from the perspective of the systems analyst to provide an understanding of concepts, processes and techniques as they are applied to the systems development life cycle. Emphasis on the use of structured and object-oriented techniques to manage the complexities involved in the analysis phase of systems development. (Fall)

INFO 3235. Advanced Business Information Systems Development. (3) Prerequisites: INFO 3234 with a grade of C or above. Development of Business Information Systems. Emphasis on the development of computer applications as products of the systems development life cycle including the design and implementation phases of systems development, as accomplished through a major course project. (On demand)

INFO 3236. Business Analytics. (3) Prerequisites: INFO 3233 and OPER 3100 with grades of C or above. A study of the application of the computer to middle and upper-level management processes to provide computer skills needed to implement such applications. Reading, discussion, and hands-on computer projects. (On demand)

INFO 3238. Current Issues in The Management of Information Systems. (3) Prerequisites: INFO 3130 and MGMT 3140 with grades of C or above. Information systems and the management of information in an organization to provide exposure to the decision challenges presented to the corporate manager by the rapid development of information technology and to suggest useful constructs for dealing with them. An integrated, interactive approach to decision making. (On demand)

INFO 3240. eBusiness Systems. (3) Pre- or corequisite: INFO 3234 with a grade of C or above. A study of the evolving information technologies facilitating electronic business (eBusiness) and the business practices and strategies used to compete in the new wired global marketplace. Topics include the infrastructure for eBusiness, new business strategies and models, web design, and management strategies, and an exploration of a variety of technologies involved in eBusiness. (Spring)

INFO 3241. Information Audit, Control, and Risk Management. (3) Prerequisite: INFO 3130 with a grade of C or above. This course examines information systems auditing as an organizational function that evaluates asset safeguarding, data integrity, system effectiveness and efficiency. IT risk management, IT controls, legal issues, security and privacy, and related concepts will also be explored. (On demand)

INFO 3400. Management Information Systems Internship. (1-6) Prerequisite: Junior or Senior in good standing and department approval. Full- or part-
time academic year internship in areas complementary to the concentration area of studies and designed to allow theoretical and course-based practical learning to be applied in a supervised industrial experience. Requires 50 hours of supervised employment per hour of credit. Each student's internship program must be approved by the supervising faculty. A proposal form must be completed and approved prior to registration and the commencement of the work experience. A mid-term report and a final report to be evaluated by the supervising faculty are required. Grading will be by the supervising faculty and could be in consultation with off-campus supervisor at the internship organization. Graded on a Pass/No Credit basis. A student who is employed with applying for this Management Information Systems internship may not earn internship credit through work for the current employer. May be used to meet requirements of a major elective, up to a maximum of three credit hours. (Fall, Spring, Summer)

INFO 3500. Cooperative Education and 49ership Experience. (0) Prerequisite: Management Information Systems major. Enrollment in this course is required for the department's cooperative education and 49ership/service 49ership students during any semester they are working in a position. Acceptance into the Experiential Learning Program by the University Career Center is required. Participating students pay a course registration fee for transcript notation (49ership and co-op) and receive full-time student status (co-op only). Assignments must be arranged and approved in advance. Course may be repeated; evaluation is Satisfactory/ Unsatisfactory. Only open to undergraduate students; Graduate level students are encouraged to contact their academic departments to inquire about academic or industrial internship options for credit. For more information, contact the University Career Center. (Fall, Spring, Summer)

INFO 3800. Directed Study. (1-6) Prerequisites: permission of the department and Junior standing. Enrollment granted only by permission of the faculty with whom the work will be performed. The student's work assignments will be designed by the student and faculty member who will oversee the project of study. The credit hours will be determined prior to enrollment and will be based on the particular project undertaken. (On demand)

INTERNATIONAL STUDIES (INTL)

INTL 1101. Introduction to International Studies. (3) An introductory, interdisciplinary survey of the field of international studies. Attention will focus on the economic, geo-political and socio-cultural issues affecting relationships in an increasingly interdependent global system. (Fall, Spring)

INTL 2101. Introduction to African Studies. (3) Cross-listed as HIST 2211/AFRS 2221. A survey of major developments in 19th and 20th century Sub-Saharan Africa, with emphasis on the European conquest, the colonial period, and the triumph of modern African nationalism. (Fall)

INTL 2201. Introduction to Asian Studies. (3) Cross-listed as HIST 2201. Focus on the rise of modern Asia from the period just prior to the armed intervention of Western European nations. Emphasis will be placed on the impact of imperialism, colonialism, and the rise of Asian nationalism on Asian societies. (Spring)

INTL 2301. Introduction to European Studies. (3) Cross-listed as HIST 1121. European history from the Age of Absolutism to the present. (Fall, Spring, Summer) (Evenings)

INTL 2401. Introduction to Latin American Studies. (3) Cross-listed as HIST 2207. A survey of Latin American history from 1826 to the present with emphasis on the economy and society. Special attention to twentieth-century revolutions and the role of the United States in Latin America. (Spring)

INTL 3000. Topics in International Studies. (1-3) Analysis of a selected topic related to international studies. The particular topic of the course may vary from semester to semester. A student may repeat the course for credit as topics vary. (On demand)

INTL 3111. Politics and Culture in Literature. (3) (W) An exploration of different types of political systems across the world and the ways in which the cultures and values of those systems are reflected in literature. The relationship between politics and literature will be examined with particular reference to such topics as human rights, gender roles and war. The political systems selected for consideration will be representative of different geographic regions and philosophies. (Yearly)

INTL 3112. Globalization and Culture. (3) Cross-listed as ANTH 3112. This course explores the relationship between processes of globalization and cultural change. It will consider the breakdown of the connection between lived cultural experience and territorial location. Of special interest will be issues of cultural homogenization, cultural hybridization and emergent cultural identities brought about by the flows of people, ideas and objects in the contemporary world. (Yearly)

INTL 3115. Globalization and Digital Media. (3) Cross-listed as COMM 3126. An analysis of the role and impact of digital media on globalization. The course considers how the internet and social networks have changed our connection from a physical global society to a virtual culture and explores the ways in which digital communication has fostered the globalization of artistic styles, cultural forms, political relationships and economic transactions. (Yearly)

INTL 3120. Women’s Studies International. (3) Cross-listed as WGST 4120. This course will explore policies affecting women’s lives across international borders and will look at a range of topics from divorce, marriage, violence against women and abortion to work and poverty. (Fall)
INTL 3127. Global Media. (3) Cross-listed as COMM 3127. The course examines the theories and practices of globalization as related to mediated communication and the operation of global media, its consumption and impact. Specific issues studied include global media conglomeration, global media law, media systems, and international development. (Annually)

INTL 3131. Diplomacy in a Changing World. (3) Cross-listed as POLS 3159. Diplomacy, a means to resolve disputes between sovereign states short of war, will be analyzed through case studies drawn from historical context and through a survey of contemporary crises. The American diplomatic process will also be reviewed with particular attention to how policy is shaped, how an embassy functions and how Americans train for the professional diplomatic service. (Yearly)

INTL 3135. Origins of Globalization. (3) An analysis of European colonial expansion from the 16th through the 19th century, emphasizing the creation of the first global systems of political, economic, and cultural interaction that form the foundation of modern globalization. Using a cross-cultural approach, the course explores the competition and conflict among the great powers and the effects of conquest and colonialism on the indigenous peoples of Africa, Asia and the Americas. (Yearly)

INTL 3136. Globalization and Resistance. (3) A cross-cultural analysis of changing patterns of resistance by indigenous peoples to the political, cultural and economic effects of globalization from the colonial period to the present. Using case studies from the Americas, Africa and Asia, the course examines a variety of indigenous resistance strategies and movements and the socio-political dynamics that have driven them and impacted on their effectiveness.

INTL 3151. International Political Economy. (3) Cross-listed as POLS 3151. An analysis of the political dynamics of economic relationships among countries. Attention is focused on the political aspects of monetary, trade and investment relationships, and the difficulties involved in coordinating policy and maintaining effective international management. (Yearly)

INTL 3400. International Studies Internship. (1-3) Prerequisite: Permission of the director. Practical experience and/or training related to the field of international studies. A minimum of 45 hours per credit. (Fall, Spring)

INTL 3800. Independent Study. (1-3) Prerequisite: Permission of the director. Supervised investigation of an issue related to the field of international studies that is of special interest to the student and that is not covered in existing or available courses. (Fall, Spring)

INTL 4601. International Studies Seminar. (3) (O, W) Prerequisite: advanced junior or senior class status. A capstone seminar involving in-depth research and analysis of topics of common interest to all majors, yet specific to each student's area studies concentration. (Fall, Spring)

COMP SCIENCE (ITCS)

ITCS 1101. Introduction to Computer Concepts. (3) Prerequisite or corequisite: MATH 1100 or MATH 1101 or MATH 1103 or MATH 1120 or MATH 1241. Introductory course that gives an overview of computer hardware and software. Primary emphasis is on productivity software (word processing, spreadsheet, and graphical presentation). These applications are taught through a series of projects/assignments. Aspects of Internet research are also covered. (Fall, Spring, Summer) (Internet)

ITCS 1102. Advanced Internet Concepts. (3) Cross-listed as ITIS 1102. Prerequisite: ITCS 1101 or permission of the department. This course is an advanced study of the Internet environment. This course is designed for any student who is familiar with office productivity tools and a user of Internet technologies; it addresses advanced concepts of computer literacy. Topics include: concepts of website design and how to evaluate websites; proper use of synchronous and asynchronous communication tools (e.g., chat, email, IM); issues of copyright and cyber-ethics; using the Internet to do research; and publishing via the Internet. Other topics may be added to keep the content current and relevant. Students will complete extensive Internet oriented projects to demonstrate mastery of the skills discussed in class. (May not be taken for credit by ITIS majors.) (Fall, Spring, Summer) (Internet)

ITCS 1200. Freshman Seminar. (3) Cross-listed as ITIS 1200. Prerequisite: permission of department. An introductory Information Technology course designed to assist students with the transition to college by acquainting them with the University's resources and support, exploring opportunities in the IT field, and developing a strong sense of community within the College of Computing & Informatics and the University as a whole. The development of learning skills, time management skills, and other life skills necessary for college success will be emphasized. (Fall)

ITCS 1203. Survey of Computing. (3) Cross-listed as ITIS 1203. Introductory course that explores the broad field of computing as it applies to daily life. Topics cover computers of all sizes from handheld devices to super computers; the role of software from operating systems to applications; the software development process; issues of security and privacy on the Internet and the World Wide Web; and possible fields of study within the broad field of information technology. (On demand)

ITCS 1212. Introduction to Computer Science. (3) Corequisite: ITCS 1212L; Prerequisites or corequisites: MATH 1100 or MATH 1103 or MATH 1120 or MATH 1241. Introduction to algorithmic problem solving strategies and algorithm
ITCS 1212L. Programming Lab I. (0) Corequisite: ITCS 1212. Guided laboratory exercises dealing with programming mechanics; algorithm development; and the use of computers in problem solving. One laboratory period of three hours per week. Performance in ITCS 1212L will be counted as portion of the ITCS 1212 grade. Graded on a Pass/No Credit basis. (Fall, Spring, Summer) (Evenings)

ITCS 1212. Programming Lab I. (0) Corequisite: ITCS 1212. Guided laboratory exercises dealing with programming mechanics; algorithm development; and the use of computers in problem solving. One laboratory period of three hours per week. Performance in ITCS 1212L will be counted as portion of the ITCS 1212 grade. Graded on a Pass/No Credit basis. (Fall, Spring, Summer) (Evenings)

ITCS 1301. Introduction to the Financial Services Industry. (3) Cross-listed as ITIS 1301. The objective of this course is to provide the student with an overview of the financial services industry, to include such areas as the industry components; regulatory considerations and their impact; and relations with other institutions. (Fall, Summer) (Evenings)

ITCS 1610. Computing Applications Seminar. (3) Prerequisite: MATH 1100, 1103, 1120, or 1242. This is a service-learning seminar course designed to emphasize the social relevance of computing. The course aims to inform non-computing specialists of computing technologies, research, and career opportunities. Seminar topics are intended to enhance disciplinary knowledge and to develop leadership skills related to using computing knowledge and skills in service to society. Emphasis will be placed on the basic concepts of leadership theory and its application within the computing discipline on an individual, group, and societal level. Students will participate in team-based computing service-learning projects in the community, in conjunction with computing majors taking ITCS 3610. Student performance evaluation will consider individual homework assignments, participation in team projects, and class participation. (Spring)

ITCS 1712. Introduction to Computer Science (Honors). (3) Pre- or corequisites: MATH 1120 or MATH 1241; restricted to CCI Honors students, or an acceptable score on the ITCS 1712 placement test. Introduction to algorithmic problem solving using high level programming languages. Basic programming concepts (decision making, iteration, subroutines) and data types (atomic and aggregates) will be taught in C++ and Java. Advanced concepts such as pointers, references, and polymorphism will be explored. (Fall) (Evenings)

ITCS 2050. Topics in Computer Science. (1-3) Prerequisite: Permission of the department. Topics in computer science selected to supplement the regular course offerings at the 2000 level. (May be repeated for credit with the permission of the department. A student may register for multiple sections of the course with different topics in the same semester or in different semesters.) (On demand)

ITCS 2116. C Programming. (3) Prerequisite: Knowledge of any other computer programming language or permission of the department. A study of the programming language C. Data types, operators, functions, program structure, file I/O, storage classes, exceptions, concurrent programming, and the preprocessor. (Summer) (Evenings)

ITCS 2163. Introduction to File Processing. (3) Prerequisite: ITCS 1213 and 1213L. Concepts and techniques of structuring data on external storage devices; provides the foundation for applications of data structures and file processing techniques. (On demand)

ITCS 2175. Logic and Algorithms. (3) Prerequisites: ITCS 1212 and (MATH 1120 or MATH 1241). Introduction to propositional calculus, predicate calculus, algorithms, logic functions, finite-state machines; logic design. (Fall, Spring, Summer) (Evenings) (Internet)

ITCS 2181. Computer Logic and Design. (3) Prerequisite: ITCS 1212 or permission of the department. Logic design; logic circuits; state diagrams; Karnaugh maps; memories; tri-state devices; bus structures; and data control concepts. (On demand)

ITCS 2214. Data Structures. (3) Prerequisite: ITCS 1213 and 1213L with a grade of C or above, or permission of the department. A study of the theory and implementation of abstract data types (ADTs) including stacks, queues, and both general purpose and specialized trees and graphs. Programming emphasis is on the use of an object-oriented language to implement algorithms related to the various data structures studied including creation, searching, and traversal of ADTs. (Fall, Spring, Summer) (Evenings) (Internet)

ITCS 2215. Design and Analysis of Algorithms. (3) Prerequisites: (MATH 1120 or 1241) and (ITCS 2175 or MATH 1165) and ITCS 2214. Introduction to the design and analysis of algorithms. Design
techniques: divide-and-conquer, greedy approach, dynamic programming. Algorithm analysis: asymptotic notation, recurrence relation, time space complexity and tradeoffs. Study of sorting, searching, hashing, and graph algorithms. (Fall, Spring, Summer) (Evenings) (Internet)

ITCS 2231. Introduction to Business Programming. (3) Cross-listed as INFO 2231. Pre/corequisite: INFO 2130 or permission of the department. This course focuses on the examination of business problems, the extraction of the logic and business rules, and the relationship between business logic, programming constructs and technologies for decision support. (Fall, Spring, Summer) (Internet)

ITCS 2301. Financial Services Computing Environment. (3) Cross-listed as ITIS 2301. Prerequisite: ITCS/ITIS 1301. The objective is for the student to gain insights on several key components in financial computing environments and the enabling technologies. (Spring, Summer) (Evenings)

ITCS 3050. Topics in Computer Science. (1-3) Prerequisite: Permission of the department. Topics in computer science selected to supplement the regular course offerings at the 3000 level. (May be repeated for credit with the permission of the department. A student may register for multiple sections of the course with different topics in the same semester or in different semesters.) (On demand)

ITCS 3110. Compiler Construction. (3) Prerequisites: ITCS 2215. Review of programming language structures, translation, loading, execution, and storage allocation. Compilation of simple expressions and statements. Organization of a compiler, including compile-time and run-time tables, lexical scan, syntax scan, object code generation, error diagnostics, object code optimization techniques, and overall design. Use of compiler writing languages and boot strapping. (On demand)

ITCS 3112. Design and Implementation of Object-Oriented Systems. (3) Prerequisite: ITCS 2215. In-depth exploration of object-oriented programming and system development. Topics include: evolution of object-oriented methodology; concept of the object-oriented approach; object-oriented programming languages; object-oriented analysis and design; the design of software for reuse; and incremental software development. (Spring) (Evenings)

ITCS 3123. Introduction to Numerical Methods. (3) Prerequisites: ITCS 2214 AND (MATH 1241 or MATH 1120). General concepts of scientific computing and their applications to such areas as non-linear equations, numerical integration, spline and polynomial interpolation, and initial value problems. (On demand)

ITCS 3134. Digital Image Processing. (3) Prerequisites: ITCS 2214, MATH 1242, and MATH 2164, with grades of C or above. Overview of fundamentals of image acquisition, representation, enhancement, segmentation, reconstruction, analysis and recognition. Image generation, viewing and perception; image transformations using the Fourier transform; spatial operations and filtering (spatial and frequency domain); image coding; lossless and lossy compression; boundary and region based segmentation; thresholding and classification; boundary and regional image descriptors; matching and neural networks; shape numbers. (Spring) (Evenings)

ITCS 3143. Operating Systems. (3) Prerequisite: ITCS 2214 or permission of the department. Introduction to multiprogramming operating systems. Process synchronization and management of memory, devices, and files; performance evaluation. (On demand)

ITCS 3146. Operating Systems and Networking. (3) Prerequisite: ITCS 2215 or permission of the department. Introduces the fundamentals of operating systems together with the basics of networking and communications. Topics include: processes, thread, cache, memory management, virtual memory, concurrency, assembly language, network architecture and protocols, web and HTTP, UDP and TCP, internet routing. (Fall, Spring) (Evenings)

ITCS 3152. Symbolic Programming. (3) Prerequisite: ITCS 2214. Basic concepts of symbolic programming including selected topics in artificial intelligence, heuristic searching, symbolic algebra, language parsing, and theorem proving. (Fall) (Evenings)

ITCS 3153. Introduction to Artificial Intelligence. (3) Prerequisite: ITCS 3152 or permission of the department. Basic concepts of artificial intelligence. Topics include: defining the problem as a state space search, production systems; heuristic search; basic problem-solving methods; game playing; knowledge representation using predicate logic, semantic nets, frames, and scripts; non-monotonic reasoning, statistical and probabilistic reasoning. (Spring) (Evenings)

ITCS 3155. Software Engineering. (3) Prerequisite: ITCS 1213 and 1213L or permission of the department. The system development cycle is examined in detail from the aspects of software engineering. Current tools and techniques of systems design—data dictionary, data flow diagrams, structured walkthroughs, and capacity planning will be taught and presented in conjunction with case studies and class problems. (Fall, Spring, Summer) (Evenings)

ITCS 3160. Data Base Design and Implementation. (3) Prerequisite: ITCS 1213 and 1213L or permission of the department. Logical and physical database organization, data models, design issues, and secondary storage considerations. Emphasis on actual participation in the design and implementation of databases. (Fall, Spring) (Evenings)

ITCS 3166. Introduction to Computer Networks. (3) Prerequisite: ITCS 1213 and 1213L or permission of the department. Internet architecture and protocols. Distributed vs. centralized processing. Data communications; speed; capacity; media; protocols.
Network architectures. Evaluation of alternatives. Case studies. (On demand)

Prerequisites: MATH 2164 or its equivalent. Topics include: Concepts of continuous and discrete signals; continuous Fourier transform and its applications in multimedia processing; discrete Fourier transform and its applications in arts and multimedia processing; fundamentals of stochastic systems; fundamentals of ordinary differential equations; applications of differential equations in modeling; wavelet transform and its applications in music and multimedia processing; fundamentals of fractals and their application in arts and science; classification and clustering. (On demand)

**ITCS 3181. Logic and Computer Systems. (3)**
Prerequisites: ITCS 2175 and ITCS 2215. Corequisite: ITCS 3181L. Fundamental layers of digital computer systems: Switch level network structure; digital logic level including ALU, registers, buses; microprogramming level; conventional Instruction Set Architecture level and assembly language; memory organization and architecture; pipelining and functional parallelism. (Fall, Spring; Summer) (Evenings)

**ITCS 3181L. Computer Systems Lab and Recitation. (0)** Corequisite: ITCS 3181. Guided laboratory exercises and recitation for design of multilevel computer systems: combinational and sequential logic networks; Arithmetic and Logic Unit; pipeline design; microprogramming and assembly language practice; computer simulation practice. Graded on a Pass/No Credit basis. (Fall, Spring, Summer) (Evenings)

**ITCS 3182. Computer Organization and Architecture. (3)** Prerequisite: ITCS 2181 or ECGR 2181. Machine level representation of data; von Neumann architecture; instruction sets and types; addressing types; assembly and machine language programming; control unit and microprogramming; alternate architectures. (On demand)

**ITCS 3183. Hardware System Design. (3)**
Prerequisite: ITCS 3181 or 3182 or permission of the department. Design of hardwired control systems; processors and memory systems; application specific design; use of simulation tools. Laboratory intensive course. (On demand)

**ITCS 3211. Computing Leaders Team Projects. (1)**
Prerequisite: ITCS 3610 or ITCS 1610. This is a service-learning course that builds upon the leadership concepts from ITCS 3610 through focused hands-on experience with service-learning projects. Students will work in teams to apply computing technologies, knowledge and skills to serve community needs. This course may be repeated for elective credit. (Fall, Spring)

**ITCS 3212. Computing Leaders Team Leaders. (1)**
Prerequisite: ITCS 3610 or ITCS 1610. This is a service-learning course that builds upon the leadership concepts from ITCS 3610 through focused hands-on experience with service-learning projects. This is a companion course to ITCS 3211; students in this course serve as team leaders for the team projects undertaken by students in ITCS 3211. Students will lead teams to apply computing technologies, knowledge, and skills to serve community needs. This course may be repeated for elective credit. (Fall, Spring)

**ITCS 3216. Introduction to Cognitive Science. (3)**
Cross-listed as PSYC 3216. Prerequisite: Permission of the department. Interdisciplinary introduction to the science of the mind. Broad coverage of such topics as philosophy of mind, human memory processes, reasoning and problem solving, artificial intelligence, language processing (human and machine), neural structures and processes, and vision. (Spring, Odd years)

**ITCS 3301. Introduction to the Regulatory Environment for Financial Services Firms. (3)** Cross-listed as ITIS 3301. Prerequisite: ITCS/ITIS 2301. Using case studies, enable the student to understand the compliance and regulatory environment that currently exists for Financial Services firms. (Fall, Summer) (Evenings)

**ITCS 3590. Computer Science Cooperative Education and 49ership Experience. (0)** This course is required of Co-op and 49ership/service 49ership students during the semester they are working. Acceptance into the Experiential Learning Program is required. Participating students pay a course registration fee for transcript notation. Assignments must be arranged and approved in advance. Course may be repeated. Evaluation is Satisfactory/Unsatisfactory. Only open to undergraduate students; Graduate level students are encouraged to contact their academic departments to inquire about academic or industrial internship options for credit. For more information, contact the University Career Center. (Fall, Spring, Summer)

**ITCS 3610. Computing Leaders Seminar. (3)**
Prerequisite: must be a CCI major. This is a service-learning seminar course. Seminar topics are intended to enhance disciplinary knowledge and skills (computing technologies, research, careers) and to develop leadership skills by using computing knowledge and skills in service to society (service and civic engagement). Emphasis will be placed on the basic concepts of leadership theory and its application within the computing discipline on an individual, group, and societal level. Students will participate in team-based computing service-learning projects in the community. Student performance evaluation will consider individual homework assignments, participation in team projects, class participation, and feedback from those served. (Spring)

**ITCS 3688. Computers and Their Impact on Society. (3)** (O, W) Prerequisite: Junior standing and permission of the department. A study of current topics (software piracy, hacking, professional conduct) in computer science and the impact of computers on various subsets (home, government, and education) of society. (Fall, Spring) (Evenings)
ITCS 3690. Seminar. (1-6) Prerequisite: Permission of the department. May be repeated for credit. (On demand)

ITCS 3691. Seminar. (1-6) Prerequisite: Permission of the department. A continuation of ITCS 3690. May be repeated for credit. (On demand)

ITCS 3695. Computer Science Cooperative Education Seminar. (1) Required of Co-op students immediately following each work assignment for presentation of reports on work done the prior semester. (Fall, Spring, Summer)

ITCS 3699. Senior Seminar. (1-3) Prerequisites: Senior standing and permission of the department. Each participant will prepare a lecture on a topic in computer science. Emphasis will be on communication of technical information as well as on content of the presentations. May be repeated for credit. (On demand)

ITCS 4010. Topics in Computer Science. (1-3) Prerequisite: Permission of the department. Topics in computer science selected to supplement the regular course offerings at the 4000 level. (May be repeated for credit with the permission of the department. A student may register for multiple sections of the course with different topics in the same semester or in different semesters.) (On demand)

ITCS 4102. Programming Languages. (3) Prerequisite: ITCS 2215. Formal definition of programming languages, including specification of syntax and semantics. Evolution of programming languages and language design principles. Structural organization, control structures, data structures and types, name visibility, binding times, parameter passing modes, subroutines, co-routines, and tasks. Functional programming, list processing, logic programming, object-oriented programming systems. (Fall, Spring, Summer) (Evenings)

ITCS 4107. Formal Languages and Automata. (3) Prerequisite: MATH 1165 or ITCS 2175. Detailed study of abstract models for the syntax of programming languages and information processing devices. Languages and their representation; grammars, finite automata and regular sets; context-free grammars and pushdown automata; Chomsky Hierarchy; closure properties of families of languages; syntax analysis. (On demand)

ITCS 4120. Introduction to Computer Graphics. (3) Prerequisites: ITCS 2214 and MATH 2164 or permission of department. Graphics hardware; raster algorithms; geometric transformations; 2D/3D interactive graphics; 3D viewing and perspective projections; color and lighting models; hidden surface removal; modeling hierarchies; fractals; curved surfaces. (Fall) (Evenings)

ITCS 4121. Information Visualization. (3) Prerequisites: ITCS 1213 and 1213L or approval of the instructor. Information visualization concepts, theories, design principles, popular techniques, evaluation methods, and information visualization applications. (Spring) (Evenings)

ITCS 4122. Visual Analytics. (3) Prerequisite: any of STAT 1220, 1221, 1222, 2122, or 2223, or approval of the instructor. This course introduces the new field of visual analytics, which provides tools for the interactive visual analysis of large and complex data sets in many application areas. Topics include: visual representation, perception, the analysis process, critical thinking, data transformations, color, interaction, and applications. (Fall) (Evenings)

ITCS 4123. Visualization and Visual Communication. (3) Understanding the relatively technical field of visualization from the point of view of visual communication; this course draws connections with photography, design, illustration, aesthetics, and art. Both technical and theoretical aspects of the various fields are covered, and the connections between them are investigated. (Spring) (Evenings)

ITCS 4128. Programming Languages and Compilers. (3) Prerequisite: ITCS 2214. Introduction to the concepts and techniques used in describing, defining, and implementing programming languages and their compilers. Introduction to parsing and parser construction; LL and LR grammars; syntax directed translation; data object representations; run time structures; intermediate languages; code optimization. (On demand)

ITCS 4131. Communication Network Design. (3) Prerequisites: ITCS 3166 or permission of the department. Emphasis on the design and analysis of communication networks. Application, host, and network requirements analysis; data flow analysis, models and specifications; technology choices; Interconnection mechanisms; network management and security; physical network design; addressing and routing. (On demand)

ITCS 4133. Numerical Computation Methods and Analysis. (3) Prerequisites: ITCS 2214 and either MATH 1120 or MATH 1241. Introduction to principles and techniques behind numerical methods and algorithms that underlie modern scientific and engineering applications. Roots of equations: linear systems (direct methods, LU/QR factorization, iterative methods); Eigen values and vectors; Interpolation, Approximation; Numerical Differentiation/Integration, ODEs and PDEs. (On demand)

ITCS 4141. Computer Organization and Architecture. (3) Prerequisite: ITCS 3181, 3182 or equivalent. Fundamentals of computer design; instruction set design, basic processor implementation techniques; pipelining; memory hierarchy; Input/Output. Cost/performance and hardware/software trade-offs. (On demand)

ITCS 4145. Parallel Computing. (3) Prerequisites: ITCS 2214 and ITCS 3181 or 3182. Types of parallel computers, programming techniques for
multiprocessor and multicomputer systems, parallel strategies, algorithms, and languages. (Once every three semesters) (Evenings)

ITCS 4146. Grid Computing. (3) Prerequisite: ITCS 1213 and 1213L. Grid computing software components, standards, web services, security mechanisms, schedulers and resource brokers, workflow editors, grid portals, grid computing applications. (Once every three semesters)

ITCS 4151. Intelligent Robotics. (3) Prerequisites: ITCS 2214 and MATH 2164. General introduction to spatial descriptions and transformations, and manipulator position and motion. More study on robot planning, programming, sensing, vision, and CAD/CAM. (On demand)

ITCS 4152. Computer Vision. (3) Prerequisites: ITCS 2215 and MATH 2164. General introduction to computer vision and its application. Topics include low level vision, 2D and 3D segmentation, 2D description, 2D recognition, 3D description and model-based recognition, and interpretation. (Spring) (Odd years)

ITCS 4155. Software Development Projects. (3) Prerequisites: ITCS 2215; one of ITCS 3155, ITIS 3300, ITIS 3310, or permission of the instructor; and Senior Standing or permission of the department. In this course, students will learn advanced software engineering concepts. The course will explore the entire software development process, emphasizing requirements engineering, design, implementation, test, deployment, and evolution. In addition, students will be introduced to advanced topics in software engineering, such as object-oriented modeling, software architecture, architectural styles, design patterns, middleware frameworks, and programming paradigms. Students will apply these concepts, along with concepts from introductory programming courses, data structures and algorithms courses, and introductory software engineering courses, to a team software development project that will result in an executable software system prototype. (Spring)

ITCS 4157. Computer-Aided Instruction. (3) Prerequisite: Permission of the department. History of CAI; study of current CAI systems; development of man-machine dialogue; programming tools for CAI; information structures for computer-oriented learning. Advantages/disadvantages/costs of CAI. (On demand)

ITCS 4161. Intellectual Property Aspects of Computing. (3) Prerequisite: Senior standing or permission of the department. This course explores the broad field of intellectual property and the many aspects related to computing. Topics covered include software copyrights, software patents, trademarks and service marks, employment contracts, non-compete agreements, software licenses, software development contracts, preservation of digital evidence, protection of trade secrets, cyberspace law and the use of mediation in IP disputes. (Spring)

ITCS 4181. Microcomputer Interfacing. (3) Prerequisite: ITCS 3181, ITCS 3182, ECGR 3181, or permission of the department. Signal conditioning, A/D conversion, noise, transmission line effects, signal processing, D/A conversion and serial/parallel interfaces. (On demand)

ITCS 4230. Introduction to Game Design and Development. (3) Prerequisite: ITCS 2215. Basic concepts and techniques for electronic game design and development. Topics include: game history and genres, game design teams and processes, what makes a game fun, level and model design, game scripting and programming including computer graphics and animation, artificial intelligence, industry issues, and gender and games. (Fall)

ITCS 4231. Advanced Game Design and Development. (3) Prerequisite: ITCS 4230. Advanced concepts and techniques for electronic game design and development. This course is a project-centered course where students explore complex gameplay and interactivity. The course explores topics from the introductory course in more depth, such as: applying software engineering techniques to developing games, advanced game programming and scripting, networking, graphics, physics, audio, game data structures and algorithms, and artificial intelligence. (Spring)

ITCS 4232. Game Design and Development Studio. (3) Prerequisite: ITCS 3155, ITCS 4120, ITCS 4231, and one approved game elective, or permission of instructor; and Senior standing or permission of the department. Application of advanced concepts and techniques for electronic game design and development. Teams will use engineering techniques to incorporate game programming and scripting, networking, graphics, physics, audio, game data structures and algorithms, and artificial intelligence into an electronic game. Individuals will develop a complete portfolio of prior work and the course project. (Spring) (Evenings)

ITCS 4235. Game Engine Construction. (3) Prerequisite: ITCS 4120 or permission of department. Introduction to principles and techniques behind modern computer and console game engines. Graphics Rendering Pipeline (transformations, lighting, shading); 2D/3D Texture Mapping; Image Based Rendering; Spatial Structures and Acceleration Algorithms; Level of Detail; Collision Detection, Culling and Intersection Methods; Vertex/Pixel Shaders; Pipeline Optimization; Rendering Hardware. (On demand)

ITCS 4236. Artificial Intelligence for Computer Games. (3) Prerequisite: ITCS 3153. Application of advanced concepts and techniques in artificial intelligence for electronic game design and development. An investigation of the artificial intelligence techniques necessary for an agent to act, or appear to act, intelligently in interactive virtual worlds. Topics include uncertainty reasoning, machine learning, perception, knowledge representation, search, and planning. Emphasis will be on implementation and experimentation with the goal of building robust intelligent agents in interactive entertainment domains. Elements of multi-agent
collaboration and the use of cognitive architectures in interactive computer games will also be discussed.  

(On demand)

ITCS 4237. Audio Processing for Entertainment Computing. (3) Prerequisite: MATH 1242, MATH 2164, and ITCS 2215 or equivalents. Introduction to the principles and applications of audio (digital signal) processing focusing on entertainment domains. Topics include: analysis of signals, transforms, digital filter design techniques, audio engine development, file encoding/decoding, spatial sound rendering, optimization, and advanced audio techniques.  

(On demand)

ITCS 4640. Financial Services Informatics Industry Foundations Capstone I. (3) Cross-listed as ITIS 4640. Prerequisite: Senior standing. An individual or group project in the theory, teaching, or application of Financial Services Informatics under the direction of a faculty member. Projects must be approved before they may be initiated.  

(Fall, Spring, Summer)  

(Evenings)


(Fall, Spring, Summer)  

(Evenings)

ITCS 4650. Senior Project.  

(3)  

Prerequisite:  ITCS 4650. A continuation of ITCS 4650.  

(Fall, Spring)  

(Evenings)

ITCS 4681. Senior Design I.  

(3)  

Prerequisites:  Senior standing and two ITCS/ITIS 3xx/4xxx courses with a grade of C or above, or permission of the department. An individual or group project in the teaching, theory, or application of computer science under the direction of a faculty member. Projects must be approved by the department before they can be initiated.  

(Fall, Spring)  

(Evenings)

ITCS 4682. Senior Design II.  

(3)  

Prerequisite:  ITCS 4681. A continuation of ITCS 4681.  

(Fall, Spring)  

(Evenings)

ITCS 4990. Undergraduate Research.  

(3)  

Prerequisite: Permission of the department. This course consists of undergraduate research as part of a joint undergraduate/graduate research project using existing research laboratory facilities and materials. Course may be repeated in subsequent terms for a maximum of 6 hours total.  

(Fall, Spring, Summer)

ITCS 4991. Undergraduate Thesis.  

(3)  

Prerequisites: ITCS 4155, 4232, 4650, 4681, or 4990, and permission of the department. A thesis student will explore a subject in computer science chosen for thesis research and present a written thesis to the student’s thesis committee consisting of the thesis advisor and at least two other faculty members.  

(Fall, Spring)

SOFTWARE AND INFORMATION SYSTEMS (ITIS)

ITIS 1102. Advanced Internet Concepts.  

(3)  

Cross-listed as ITCS 1102. Prerequisite: ITCS 1101 or permission of the department. This course is an advanced study of the Internet environment. This course is designed for any student who is familiar with office productivity tools and a user of Internet technologies; it addresses advanced concepts of computer literacy. Topics include: concepts of website design and how to evaluate websites; proper use of synchronous and asynchronous communication tools (e.g., chat, email, IM); issues of copyright and cyber-ethics; using the Internet to do research; and publishing via the Internet. Other topics may be added to keep the content current and relevant. Students will complete extensive Internet oriented projects to demonstrate mastery of the skills discussed in class.  

(May not be taken for credit by ITIS majors.)  

(Fall, Spring)  

(Internet)

ITIS 1200. Freshman Seminar (3)  

Prerequisite: permission of department. An introductory Information Technology course designed to assist students with the transition to college by acquainting them with the University’s resources and support, exploring opportunities in the IT field, and developing a strong sense of community within the College of Computing & Informatics and the University as a whole. The development of learning skills, time management skills, and other life skills necessary for college success will be emphasized.  

(Fall)  

(Days)


(3)  

Cross-listed as ITCS 1203. Introductory course that explores the broad field of computing as it applies to daily life. Topics cover computers of all sizes from handheld devices to super computers; the role of software from operating systems to applications; the software development process; issues of security and privacy on the Internet and the World Wide Web; and possible fields of study within the broad field of information technology.  

(Fall, Spring)

ITIS 1210. Introduction to Web-Based Information Systems.  

(3)  

Introductory course in developing Web pages for both majors and non-majors. Topics include an introduction to the mechanisms by which the Internet and the World Wide Web operate, general concepts related to Web-based information systems, the design and construction of Web infrastructure including authoring tools, domain registration, legal and ethical considerations, and basic Web security.  

(Fall, Spring)  

(Evenings)

ITIS 1301. Introduction to the Financial Services Industry.  

(3)  

Cross-listed as ITCS 1301. The objective of this course is to provide the student with an overview of the financial services industry, to include such areas as the industry components;
ITIS 1350. eScience. (4) Corequisite: ITIS 1350L. This course introduces the application of computational methods to scientific exploration and discovery in the natural sciences. Examples include modeling the spread of viruses, predator-prey relationship, the carbon cycle, and fish schooling. Both theory and practice of computational simulation and modeling techniques are examined as tools to support the scientific method. No computer programming knowledge is required. The course grade includes the student’s performance in ITIS 1350L. Must be taken concurrently with ITIS 1350L. (Fall, Spring)

ITIS 1350L. eScience Laboratory. (0) Corequisite: ITIS 1350. Laboratory exercises that introduce computational tools and techniques that support scientific exploration and discovery in the natural sciences. One three hour laboratory per week. No programming experience is required. Performance in ITIS 1350L will be counted as a portion of the ITIS 1350 grade. Must be taken concurrently with ITIS 1350. Graded on a Pass/No Credit basis. (Fall, Spring)

ITIS 2110. IT Infrastructure I: Design and Practice. (3) Prerequisite: Sophomore standing or permission of the department. Corequisite: ITIS 2110L. This course covers basics concepts for IT infrastructure systems administration such as networking administration (e.g., DNS configuration, router configuration, firewall setup, and web server configurations), operating system administration (e.g., account and privilege management, and service management). The course grade includes the student’s performance in ITIS 2110L. (Fall, Spring)

ITIS 2110L. IT Infrastructure I: Design and Practice Lab. (0) Corequisite: ITIS 2110. Guided laboratory exercises dealing with IT Infrastructure concepts and equipment. Performance in ITIS 2110L will be counted as portion of the ITIS 2110 grade. Graded on a Pass/No Credit basis. (Fall, Spring)

ITIS 2211. Ethical Issues in Personal, Professional, and Public Life: Technology. (3) Open to CCI majors only. An analysis of the conceptual tools needed to make informed, responsible judgments based on the ability to think critically and knowledgeably about issues of personal, professional, and public ethics and morality. The study of a variety of ethical views and ethical issues. Successful completion of the course satisfies the LBST 2211 requirement for General Education. (Fall, Spring, Summer) (Evenings)

ITIS 2300. Web-Based Application Development. (3) Prerequisite: Sophomore standing or permission of the department. Basic concepts for developing interactive web based applications; HTML, client side scripting, server side scripting, user interface design considerations; information security and privacy considerations, system integration considerations. Students will be required to develop working prototypes of web-based applications. (Fall, Spring)

ITIS 2301. Financial Services Computing Environment. (3) Cross-listed as ITCS 2301. Prerequisite: ITCS/ITIS 1301. The objective is for the student to gain insights on several key components in financial computing environments and the enabling technologies. (Spring, Summer) (Evenings)

ITIS 3100. Introduction to IT Infrastructure Systems. (3) Prerequisite: ITIS 2300. This course discusses methodologies, tools, and technologies that are important for understanding various IT infrastructure systems such as file storage services, email services, and web services. Focus will be placed on understanding widely-used network infrastructure services and systems, and acquiring basic knowledge in design practices and management of such systems. Can serve as a prerequisite course for ITIS 3200, ITIS 4220. (Fall, Spring) (Evenings)

ITIS 3105. Server-Side Applications and Data Management. (3) Prerequisites: ITIS 2300 and ITCS 1213, or permission of the department. This course covers principles that are important for implementing advanced Web-based applications. Emphasis will be placed on industrial and business applications which require robust and secure implementations. Server-side scripting and processing techniques will be exercised in course projects. (Spring)

ITIS 3106. Structured System Analysis and Design. (3) Prerequisite: ITCS 1213 or permission of the department. Structured systems development. Strategies and techniques of structured analysis and structured design to produce logical methodologies for dealing with complexity in the development of information systems. (Summer) (Evenings)

ITIS 3110. IT Infrastructure II: Design and Practice. (3) Prerequisite: ITIS 2110/2110L or permission of the department. Corequisite: ITIS 3110L. This course covers concepts for the design and implementation of robust IT infrastructures. Topics covered include system hardening, secured access, penetration testing, file storage services, as well as advanced topics in design and configuration of network based services. The course grade includes the student’s performance in ITIS 3110L. (Fall, Spring)

ITIS 3110L. IT Infrastructure II: Design and Practice Lab. (0) Corequisite: ITIS 3110. Guided laboratory exercises dealing with IT infrastructure concepts and equipment. Performance in ITIS 3110L will be counted as portion of the ITIS 3110 grade. Graded on a Pass/No Credit basis. (Fall, Spring)

ITIS 3130. Human-Computer Interaction. (3) Prerequisite: Sophomore standing. Concepts of the design of the human-machine environment, with special emphasis on human-computer interaction and how people acquire, store, and use data from the environment and from computers. Topics include: analysis, creation and improvement of equipment and environment to make them compatible with human capabilities and expectation; analysis of existing equipment with respect to user usability and...
ITIS 3131. Human and Computer Info Processing. (3) 
Prerequisite: ITIS 2300 or permission of the department. Overview of methods people use to acquire, store, and use the data they receive from the environment and their implementation of computers. Topics include: perception, pattern recognition, attention, memory, knowledge representation, language, and problem solving. (On demand)

ITIS 3132. Information Systems. (3) Prerequisite: ITIS 2300 or permission of the department. Analysis, design, implementation, and evaluation of information systems. Topics include: techniques of manipulating data; behavioral component of dealing with the user and integration of technology, procedures, and people. (On demand)

ITIS 3150. Rapid Prototyping and Interface Building. (3) Prerequisite: Sophomore standing. Students will learn various ways to rapidly prototype interface design ideas. This course will teach the theory behind rapid prototyping and how it relates to Human-Computer Interaction. Students will study low fidelity prototyping methods such as FIDO design and paper prototyping, and then move into higher fidelity prototyping methods such as throwaway digital prototyping. Evolutionary prototyping, interface building using high-level programming languages, will be covered. In addition to software prototyping, students will also perform blank model prototyping for physical devices. (On demand)

ITIS 3200. Introduction to Information Security and Privacy. (3) Prerequisite: ITCS 1213 or permission of the department. This course provides an introductory overview of key issues and solutions for information security and privacy. Topics include security concepts and mechanisms; security technologies; authentication mechanisms; mandatory and discretionary controls; basic cryptography and its applications; intrusion detection and prevention; information systems assurance; anonymity and privacy issues for information systems.

ITIS 3300. Software Requirements and Project Management. (3) Prerequisite: ITIS 2300 or permission of the department. Introduction to requirement engineering and project management methodologies. Topics include: requirements elicitation, specification, and validation; structural, informational, behavioral, security, privacy, and computer user interface requirements; scenario analysis; application of object-oriented methodologies in requirements gathering; spiral development model; risk management models; software engineering maturity model; project planning and milestones; cost estimation; team organizations and behavior. Case studies will be used. (On demand)

ITIS 3301. Introduction to the Regulatory Environment for Financial Services Firms. (3) Cross-listed as ITCS 3301. Prerequisite: ITCS/ITIS 2301. Using case studies, enable the student to understand the compliance and regulatory environment that currently exists for Financial Services firms. (Fall, Summer) (Evenings)

ITIS 3310. Software Architecture and Design. (3) Prerequisite: ITCS 2214 or permission of the department. Introduction to software design with emphasis on architectural design and design patterns. Models of software architecture. Architecture styles and patterns, including explicit, event-driven, client-server, and middleware architectures. Decomposition and composition of architectural components and interactions. Use of non-functional requirements for tradeoff analysis. Component based software development, deployment and management. A system design language, such as UML, will be introduced and used throughout the course.

ITIS 3320. Introduction to Software Testing and Assurance. (3) Prerequisite: ITIS 3200 and ITIS 3300 or permission of the department. Methods of evaluating software for correctness, and reliability including code inspections, program proofs and testing methodologies. Formal and informal proofs of correctness. Code inspections and their role in software verification. Unit and system testing techniques, testing tools and limitations of testing. Statistical testing, reliability models. (Fall, Spring) (Evenings)

ITIS 3590. Software and Information Systems Cooperative Education and 49ership Experience. (0) This course is required of Co-op and 49ership/service 49ership students during the semester they are working. Acceptance into the Experiential Learning Program is required. Participating students pay a course registration fee for transcript notation. Assignments must be arranged and approved in advance. Course may be repeated. Evaluation is Satisfactory/Unsatisfactory. Only open to undergraduate students; Graduate level students are encouraged to contact their academic departments to inquire about academic or industrial internship options for credit. For more information, contact the University Career Center. (Fall, Spring, Summer)

ITIS 3695. Software and Information Systems Cooperative Education Seminar. (1) Required of Co-op students immediately following each work assignment for presentation of reports on work done the prior semester. (Fall, Spring, Summer)

ITIS 4166. Network-Based Application Development. (3) Prerequisites: ITIS 2300 and ITCS 2214. This course examines the issues related to network based application development. Topics include introduction to computer networks, web technologies and standards, network based programming methodologies, languages, tools and standards. (Fall, Spring) (Evenings)

ITIS 4170. Advanced Client Applications. (3) Prerequisites: ITIS 2300 and ITCS 2214. This course covers the theory and practice of techniques to develop Web applications that have the features and functionality of traditional desktop applications, dealing with the browser as graphical user interface and the Internet as platform, with attention to
ITIS 4220. Vulnerability Assessment and Systems Assurance. (3) Prerequisite: ITIS 3200 or permission of the department. This course discusses methodologies, tools, and technologies that are important for vulnerability assessment and systems assurance. Topics covered include: ethical hacking techniques, vulnerability assessment, risk assessment/management, finding new exploits, discovering vulnerabilities, penetrating network perimeters, bypassing auditing systems, and assured administration of systems as well as evaluating systems assurance levels. Focus will be placed on 1) understanding current penetration techniques for networks, operating systems, services and applications; 2) investigating mitigation and defense strategies; and 3) studying legal and ethical considerations. The course is based on case studies with a strong lab component. (Fall, Spring)

ITIS 4221. Secure Programming and Penetration Testing. (3) Prerequisite: ITIS 4166 or permission of the department. This course covers techniques for web application penetration testing, secure software development techniques for network based applications. Automated approaches such as static code analysis and application scanning will also be discussed. (On demand)

ITIS 4250. Computer Forensics. (3) Prerequisites: ITIS 2300 or permission of the department. The identification, extraction, documentation, interpretation, and preservation of computer media for evidentiary purposes and/or root cause analysis. Topics include techniques for discovering digital evidence; responding to electronic incidents; tracking communications through networks; understanding electronic media, crypto-literacy, data hiding, hostile code and Windows™ and UNIX™ system forensics; and the role of forensics in the digital environment. (On demand)

ITIS 4640. Financial Services Informatics Industry Foundations Capstone I. (3) Cross-listed as ITCS 4640. Prerequisite: Senior standing. An individual or group project in the theory, teaching, or application of Financial Services Informatics under the direction of a faculty member. Projects must be approved before they may be initiated. (Fall, Spring) (Summer)

ITIS 4641. Financial Services Informatics Industry Foundations Capstone II. (3) Cross-listed as ITCS 4641. Prerequisite: ITCS/ITIS 4640. A continuation of ITCS/ITIS 4640. (Fall, Spring) (Summer)

ITIS 4990. Undergraduate Research. (3) Prerequisite: Permission of the department. This course consists of undergraduate research under the supervision and direction of a faculty member. Course may be repeated in subsequent terms for a maximum of 6 hours total. (On demand)

ITALIAN (ITLN)

ITLN 1201. Elementary Italian I. (4) Fundamentals of the Italian language, including speaking, listening comprehension, reading, and writing. (Fall, Spring)

ITLN 1202. Elementary Italian II. (4) Prerequisite: ITLN 1201 or permission of the department. Fundamentals of the Italian language, including speaking, listening comprehension, reading, and writing. (Fall, Spring)

ITLN 2201. Intermediate Italian I. (3) Prerequisite: ITLN 1202 or permission of the department. Review of grammar, conversation, and composition. (On demand)

ITLN 2202. Intermediate Italian II. (3) Prerequisite: ITLN 2201 or permission of the department. Continued review of grammar, conversation, and composition. (On demand)

JAPANESE (JAPN)

JAPN 1201. Elementary Japanese I. (4) Acquisition of communicative competence in speaking, listening comprehension, reading, and writing at a beginning level, with attention to cultural awareness. (Fall, Spring, Summer)

JAPN 1202. Elementary Japanese II. (4) Prerequisite: JAPN 1201 or permission of the department. Continuation of JAPN 1201. (Fall, Spring, Summer)

JAPN 2201. Intermediate Japanese I. (4) Prerequisite: JAPN 2202 or permission of the department. Acquisition of communicative competence in speaking, listening comprehension, reading, and writing at an intermediate level, with attention to cultural awareness. (Fall, Spring)

JAPN 2202. Intermediate Japanese II. (4) Prerequisite: JAPN 2201 or permission of the department. Continuation of JAPN 2201. (Fall, Spring)

JAPN 3050. Topics in Japanese. (1-3) Prerequisite: JAPN 2202 or permission of the instructor. JAPN 3050 can be taken simultaneously with any one of the following courses: JAPN 3130, JAPN 3140, or JAPN 3160. Students may expect to study Japanese specifically related to each course topic.

JAPN 3105. Japanese Immersion - Communication Skills Development. (3) Prerequisite: JAPN 2201. Students work with native Japanese speakers to improve productive communication skills. Continued practice in all four skills: speaking, listening, reading, writing, with a focus on active communication.
JAPN 3130. Business and Culture in Japan. (3) Prerequisite: Sophomore standing or permission of the department. Conducted in English. An introduction to the structure, protocol, and cultural concepts of the Japanese-speaking business world. Development of intercultural understanding and communication skills for conducting business in Japan, including study of basic business vocabulary. Students seeking to study course topic-related Japanese language may also enroll in the corresponding corequisite course, JAPN 3050. (Yearly)

JAPN 3140. Anime and Japanese Popular Culture. (3) Prerequisite: Sophomore standing or permission of the instructor. Conducted in English. This course examines anime (Japanese animation) and manga (graphic novels), two of the most important cultural products to appear in the post-war period, as a way of understanding the changing character of contemporary Japanese culture and society. As anime is a rich and diverse medium, students approach it from a variety of perspectives: as art, as social commentary, and as Japanese and global popular culture. Students seeking to study course topic-related Japanese language may also enroll in the corresponding corequisite course, JAPN 3050. (Yearly)

JAPN 3160. Topics in Japanese Film. (3) (W) Prerequisites: Sophomore status and ENGL 1102. Examines topics in Japanese film and culture, including the creative exchange of transnational influences, the emergence of the Japanese studio system as rival and complement to Hollywood, Japanese films and global cinema. All materials are examined in historical, social, and aesthetic contexts. Lectures conducted in English. May be repeated for credit with topic change; check with the instructor. Students seeking to study course topic-related Japanese language may also enroll in the corresponding corequisite course, JAPN 3050. (Fall, Summer)

JAPN 3201. Advanced Japanese Grammar, Composition and Conversation I. (4) Prerequisite: JAPN 2202 or permission of the department. Review of Japanese grammar and guided conversation on prepared topics. Emphasis on spoken Japanese. (Fall, Spring)

JAPN 3202. Advanced Japanese Grammar, Composition and Conversation II. (4) Prerequisite: JAPN 3201 or permission of the department. Review of Japanese grammar and guided compositions on prepared topics. Emphasis on vocabulary, idiomatic expressions, and stylistics. (Fall, Spring)

JAPN 3209. Introduction to Japanese Civilization and Culture. (3) Conducted in English. No knowledge of Japanese is required. Geographical, historical, and artistic features of Japanese culture as well as aspects of life, thought, and customs of the Japanese-speaking people. (Fall, Spring)

JAPN 3210. Introductory Research Project. (3) (Summer)

JAPN 3210. Business and Culture in Japan. (3) Prerequisite: Sophomore standing or permission of the department. Conducted in English. An introduction to the structure, protocol, and cultural concepts of the Japanese-speaking business world. Development of intercultural understanding and communication skills for conducting business in Japan, including study of basic business vocabulary. Students seeking to study course topic-related Japanese language may also enroll in the corresponding corequisite course, JAPN 3050. (Yearly)

JAPN 3140. Anime and Japanese Popular Culture. (3) Prerequisite: Sophomore standing or permission of the instructor. Conducted in English. This course examines anime (Japanese animation) and manga (graphic novels), two of the most important cultural products to appear in the post-war period, as a way of understanding the changing character of contemporary Japanese culture and society. As anime is a rich and diverse medium, students approach it from a variety of perspectives: as art, as social commentary, and as Japanese and global popular culture. Students seeking to study course topic-related Japanese language may also enroll in the corresponding corequisite course, JAPN 3050. (Yearly)

JAPN 3160. Topics in Japanese Film. (3) (W) Prerequisites: Sophomore status and ENGL 1102. Examines topics in Japanese film and culture, including the creative exchange of transnational influences, the emergence of the Japanese studio system as rival and complement to Hollywood, Japanese films and global cinema. All materials are examined in historical, social, and aesthetic contexts. Lectures conducted in English. May be repeated for credit with topic change; check with the instructor. Students seeking to study course topic-related Japanese language may also enroll in the corresponding corequisite course, JAPN 3050. (Fall, Summer)

JAPN 3201. Advanced Japanese Grammar, Composition and Conversation I. (4) Prerequisite: JAPN 2202 or permission of the department. Review of Japanese grammar and guided conversation on prepared topics. Emphasis on spoken Japanese. (Fall, Spring)

JAPN 3202. Advanced Japanese Grammar, Composition and Conversation II. (4) Prerequisite: JAPN 3201 or permission of the department. Review of Japanese grammar and guided compositions on prepared topics. Emphasis on vocabulary, idiomatic expressions, and stylistics. (Fall, Spring)

JAPN 3209. Introduction to Japanese Civilization and Culture. (3) Conducted in English. No knowledge of Japanese is required. Geographical, historical, and artistic features of Japanese culture as well as aspects of life, thought, and customs of the Japanese-speaking people. (Fall, Spring)

JAPN 3210. Introductory Research Project. (3) (Summer)
reporting/writing skills. Emphasis is placed on generating story ideas, making ethical news judgments, diversity issues in journalism, gathering information, and writing and editing articles. Students are also introduced to Associated Press style. Restricted to Pre-Communication and Communication Studies majors and Journalism minors. (Fall, Spring, Summer)

JOUR 3050. Topics in Journalism. (3) Prerequisite: JOUR 2160. Timely and important areas relevant to journalism. May be repeated with permission of journalism advisor. (On demand)

JOUR 3160. Advanced News Reporting and Writing. (3) Prerequisite: JOUR 2160 or permission of the instructor. This advanced journalism course continues the study of reporting and writing techniques introduced in JOUR 2160. Course covers news reporting and writing, with emphasis on the print media. Students survey a variety of news sources to become familiar with current events and the various approaches and styles of coverage. (Fall, Spring)

JOUR 3161. News Editing. (3) Prerequisite: JOUR 2160 or permission of instructor. Basic studies in selection, preparation and presentation of news, with primary emphasis on newspapers. Examination of the effects of competition in multimedia news markets. Emphasis on issues of ethics, fairness and accuracy in news coverage. Diversity and legal guidelines affecting news presentation are reviewed. (Spring)

JOUR 3162. Feature Writing. (3) Prerequisite: JOUR 2160 or permission of the instructor. In depth feature writing for printed newspapers, magazines and newsletters, as well as online publications. Students select feature topics, conduct interviews and gather relevant information to write and edit stories. Students also learn how to market feature articles. (Fall, Spring)

JOUR 3163. Visual Communication in Media. (3) Prerequisite: JOUR 2160 or permission of the instructor. Course familiarizes the student with principles, theory and techniques of visual communication and explores the role and dynamics of shaping an “image” through the use of visual communication. Students are exposed to the editing and production aspects of communication visually. (Fall, Spring)

JOUR 3401. Journalism Practicum. (2) Provides students with practical experience working with Student Media on campus. (Two semester enrollment limit) (Fall, Spring)

LACS 1201. Elementary Foreign Language. (3-4) Prerequisite: permission of the department. Fundamentals of grammar and phonetics, reading, writing and conversation of a selected language. (On demand)

LACS 1202. Elementary Foreign Language. (3-4) Prerequisite: LACS 1201 or permission of the department. Continuation of 1201. (On demand)

LACS 2050. Topics in Foreign Language. (1-4) Studies in a selected field of interest. May be repeated for credit as topics vary. (On demand)

LACS 2201. Intermediate Foreign Language. (3-4) Prerequisite: LACS 1202 or permission of the department. Grammar review, conversation, composition and readings based on the culture and civilization. (On demand)

LACS 2202. Intermediate Foreign Language. (3-4) Prerequisite: LACS 2201 or permission of the department. Grammar, conversation, composition and readings based on students' needs. (On demand)

LACS 3050. Topics in Language, Literature and Culture. (3) (W) Studies in a selected field of interest. May be repeated for credit. (On demand)

LACS 3160. European Cinema. (3) (O, W) Prerequisites: Sophomore standing and ENGL 1102 or equivalent. Introduction to films of the various national cinemas of Europe and strategies for analyzing and discussing film critically and effectively. Lectures, discussions, viewing films, writing assignments, reviews, critiques, and analyses. (Spring, Fall)

LACS 3201. Advanced Foreign Language I. (3) Prerequisite: LACS 2202 or permission of the department. Review of grammar and guided conversation on prepared topics. Emphasis on spoken language. (On demand)

LACS 3202. Advanced Foreign Language II. (3) Prerequisite: LACS 3201 or permission of the department. Review of grammar and guided compositions on prepared topics. Emphasis on vocabulary, idiomatic expressions, and stylistics. (On demand)

LACS 3800. Directed Individual Study. (1-3) Prerequisite: Permission of the department; normally open only to foreign language majors and minors. Individual work on a selected area of study. To be arranged with the instructor, generally during the preceding semester, and by special permission only. May be repeated for credit. (On demand)

LACS 4050. Topics in Foreign Language. (3) Prerequisite: Senior standing or permission of the department. Studies in a selected field of interest. May be repeated for credit with change of topic. (On demand)

LACS 4690. Senior Seminar. (1) Prerequisites: four or more courses at the 3000 or 4000 level in the major or permission of the department. Survey of career options for foreign language majors, directed
professional development (preparation of resume and portfolio), and completion of departmental required assessments in the areas of speaking, reading, writing, grammar, and content knowledge of the major.  \textbf{(Fall, Spring)} \textit{Graded on a Pass/No Credit basis.}

\textbf{LATIN (LATN)}

\textbf{LATN 1201. Elementary Latin I.}  (4) Beginning survey of elementary Latin grammar through selected readings. \textbf{(Fall)}

\textbf{LATN 1202. Elementary Latin II.}  (4) Prerequisite: LATN 1201 or equivalent. Completion of the survey of elementary Latin grammar; connected readings in elementary to intermediate Latin prose. \textbf{(Spring)}

\textbf{LATN 2201. Latin Prose.}  (3) Prerequisite: LATN 1202 or equivalent. Extended selected readings in Latin prose of intermediate difficulty: Caesar, Nepos, or Seneca. \textbf{(Fall)}

\textbf{LATN 3800. Directed Individual Reading.}  (1-3) Prerequisite: permission of instructor. Individual work on an author or genre to be arranged with the instructor. \textbf{(On demand)}

\textbf{LIBERAL STUDIES (LBST)}

\textbf{LBST 1101. The Arts and Society: Dance.}  (3) An introduction to dance in the context of the arts and society. Exploration of the similarities among selected dance traditions from around the world in terms of functionality; how 20$^{\text{th}}$ and 21$^{\text{st}}$ century American concert dance, social dance, and popular entertainment dance reflect those traditions; sociopolitical issues evidenced in choreography through lectures, discussion, film video, and live dance performance. \textit{May not be repeated for credit.} \textbf{(Fall, Spring)}

\textbf{LBST 1102. The Arts and Society: Film.}  (3) An introduction to the art of film in the context of the arts and society. Analysis of the elements of narrative and documentary film, including works made for television. Examines the role of Hollywood, international, and independent cinema (including television) in reflecting, shaping, and critiquing society. \textit{May not be repeated for credit.} \textbf{(Fall, Spring, Summer) (Evenings)}

\textbf{LBST 1103. The Arts and Society: Music.}  (3) This course is an introduction to music in the context of the arts and society. Students will survey the position of music in selected cultures from around the world. Emphasis will be placed on music in the United States and Europe. Students will experience a wide range of ideas and styles and move toward thoughtful, critical, and creative listening. Through this course students will gain a deeper understanding of the place of music in reflecting, shaping, and critiquing society. \textit{May not be repeated for credit.} \textbf{(Fall, Spring, Summer) (Evenings)}

\textbf{LBST 1104. The Arts and Society: Theater.}  (3) An introduction to theater in the context of the arts and society. Analysis of the elements that make up theatrical events. The place of theater in reflecting, shaping, and critiquing society. \textit{May not be repeated for credit.} \textbf{(Fall, Spring)}

\textbf{LBST 1105. The Arts and Society: Visual Arts.}  (3) An introduction to the visual arts in the context of the arts and society. The analysis of visual culture in a variety of media and genres in different historical periods and geographic locations. The function, meaning, and politics of individual works of art and art movements. Also addresses the role of art as a site for the articulation of value systems, including gender, class, and race. \textit{May not be repeated for credit.} \textbf{(Fall, Spring, Summer)}

\textbf{LBST 2101. Western Cultural and Historical Awareness.}  (3) All sections of this course explore a major aspect of Western culture. Particular attention is given to an examination of the constructed nature of the present through a close examination of the past and the ways that selected institutions, ideas, or practices change over time and spread in human society, producing both continuity and novelty. \textit{May not be repeated for credit.} \textbf{(Fall, Spring, Summer) (Evenings)}

\textbf{LBST 2102. Global and Intercultural Connections.}  (3) All sections of this course examine two or more cultures in their own contexts and in the contexts of the global conditions and influences that impact all major world cultures today. Particular attention is given to an analysis of the complex nature of globalization and to a consideration of both its positive and negative impacts. \textit{May not be repeated for credit.} \textbf{(Fall, Spring, Summer) (Evenings)}

\textbf{LBST 2211. Ethical Issues in Personal, Professional, and Public Life.}  (3) An analysis of the conceptual tools needed to make informed, responsible judgments based on the ability to think critically and knowledgeable about issues of personal, professional, and public ethics and morality. The study of a variety of ethical views and ethical issues. \textit{May not be repeated for credit.} \textbf{(Fall, Spring, Summer) (Evenings)}

\textbf{LBST 2212. Literature and Culture.}  (3) This course examines the connections between literature and culture. Students are offered the opportunity to examine the roles that literature plays in reflecting, shaping, and challenging cultures. \textit{May not be repeated for credit.} \textbf{(Fall, Spring, Summer) (Evenings)}

\textbf{LBST 2213. Science, Technology, and Society.}  (3)
The role of science and technology in society. The appreciation and understanding of science and the public policy issues related to science and technology. Issues such as science vs. pseudo-science, the ethics of science and technology, the methods of the sciences, the importance of major scientific discoveries, and public expectations of the sciences. May not be repeated for credit. (Fall, Spring) (Evenings)

**LBST 2214. Issues of Health and Quality of Life. (3)**
A study of individual and social aspects of health. Analysis of individual health and illness behavior and theory; the social, political, and economic contexts of health and illness; and the broad cultural, ethical, and religious understandings of health and illness. May not be repeated for credit. (Fall, Spring)

**LBST 2215. Citizenship. (3)**
A study of the concept of citizenship as it has evolved in different cultures with an emphasis on scholarly understandings of the rights and responsibilities of citizenship. Includes an examination of the ethical dimensions of citizenship in political, social, and religious contexts. The course includes a service component that allows students to explore the relations of citizenship and public service. During the semester the course meets a total of 27 hours for classroom lectures and discussions and requires completion of 25 hours of voluntary service in the community. May not be repeated for credit. (Fall, Spring)

**LATIN AMERICAN STUDIES (LTAM)**

**LTAM 1100. Introduction to Latin America. (3) (O)**
An introductory, interdisciplinary survey of the field of Latin American Studies. Course will focus on the culture, economy, geography, history, politics, and society of Latin America, as well as on the diverse ways in which scholars have studied the region. (Fall, Spring)

**LTAM 2001. Topics in Latin American Studies. (3)**
Analysis of a selected topic related to Latin American Studies. This course will fulfill an elective in the “Economy and Society” course requirements. The particular topic of the course may vary from semester to semester. A student may repeat the course credit as topics vary. (On demand)

**LTAM 2002. Topics in Latin American Studies. (3)**
Analysis of a selected topic related to Latin American Studies. This course will fulfill an elective in the “Historical Perspective” course requirements. The particular topic of the course may vary from semester to semester. A student may repeat the course credit as topics vary. (On demand)

**LTAM 2003. Topics in Latin American Studies. (3)**
Analysis of a selected topic related to Latin American Studies. This course will fulfill an elective in the “Arts and Literature” course requirements. The particular topic of the course may vary from semester to semester. A student may repeat the course credit as topics vary. (On demand)

**LTAM 2116. Contemporary Latin America. (3)** Cross-listed as ANTH 2116. A survey of the people and cultures of Mexico, Central America, South America, and the Caribbean. Areas of investigation include religion, race, ethnicity, gender, kinship, social inequality, and economic development. (Alternate years)

**LTAM 2117. Cultures of the Caribbean. (3)** Cross-listed as ANTH 2117. An introduction to society and culture in the Caribbean region. Areas of investigation include ethnicity, nationalism, family and community structure, economy, religion, and politics. (Yearly)

**LTAM 2206. Colonial Latin America. (3)** Cross-listed as HIST 2206. A survey of major political, economic, and cultural developments from earliest times to 1826. (Yearly)

**LTAM 2207. Modern Latin America. (3)** Cross-listed as HIST 2207. A survey of Latin American history from 1826 to the present with emphasis on the economy and society. Special attention to twentieth-century revolutions and the role of the United States in Latin America. (Yearly)

**LTAM 2252. New World Archaeology. (3)** Cross-listed as ANTH 2152. Prehistory of North America; Paleoindians, Eastern United States, Southwest, Mexico; archaeological methods and theory. (Spring)

**LTAM 3001. Advanced Topics in Latin American Studies. (3)** Analysis of a selected topic related to Latin American Studies. This course will fulfill an elective in the “Economy and Society” course requirements. The particular topic of the course may vary from semester to semester. A student may repeat the course credit as topics vary. (On demand)

**LTAM 3002. Advanced Topics in Latin American Studies. (3)** Analysis of a selected topic related to Latin American Studies. This course will fulfill an elective in the “Historical Perspectives” course requirements. The particular topic of the course may vary from semester to semester. A student may repeat the course credit as topics vary. (On demand)

**LTAM 3003. Advanced Topics in Latin American Studies. (3)** Analysis of a selected topic related to Latin American Studies. This course will fulfill an elective in the “Arts and Literature” course requirements. The particular topic of the course may vary from semester to semester. A student may repeat the course credit as topics vary. (On demand)

**LTAM 3110. Black Families in the Diaspora. (3)** Cross-listed as AFRS 3210 and SOCY 3210. This course is designed to acquaint students with historical and contemporary experiences of peoples of African descent in the Caribbean and Latin American countries with specific emphasis on family structure and family relationships. Includes discussion of theories, history, impact of globalization on family structure, roles of women and identity, socioeconomic status and mobility, slavery, colonialism, and capitalism. The course is designed to provide students
with a better understanding of the comparative relationships and links between family structures and common life experiences among peoples of African descent in different parts of the world, with specific emphasis on the Caribbean and Latin American regions. (On demand)

LTAM 3129. Cultural Dimension of Doing Business with Spanish-Speaking Countries (3) Cross-listed as SPAN 3029. Prerequisite: ENGL 1102 or 1103. Development of cultural awareness for conducting business with Spanish-speaking countries and U.S. Hispanic communities. Course conducted in English. (On demand)

LTAM 3144. Latin American Politics. (3) Cross-listed as POLS 3144. Comparative overview of political and socio-economic change in Latin America from the colonial period to the present. Primary emphasis on Latin American politics in the twentieth century, competing political ideologies, socio-economic issues, international political economy, and internal political change. (Yearly)

LTAM 3154. Political Economy of Latin America. (3) Cross-listed as POLS 3155. Intersections of politics and economics in Latin America, focusing on the efforts to foster economic development in the region. Emphasis on post-World War II era. Includes issues such as debt management, dependency theory, impact of free market theories, and the power of labor movements. (Yearly)

LTAM 3164. U.S.-Latin American Relations. (3) Cross-listed as POLS 3164. Addresses the always-complicated and often-confictive relationship between Latin American and the United States. Particular attention to critical contemporary issues such as the drug trade, immigration, international trade, humanitarian aid and U.S. policy toward Cuba. (Yearly)

LTAM 3190. The Political Economy of the Caribbean. (3) Cross-listed as AFRS 3190. An examination of the manifestations of Caribbean economic problems and policies and Caribbean political development from the post-war period to the present. (Fall)

LTAM 3220. The Caribbean from Slavery to Independence. (3) Cross-listed as AFRS 3220 and HIST 3180. Covering the sweep of history from European/indigenous contact, through the construction of a plantation regime based on African slave labor, and up to the present day, this course explores the spread of colonialism, the dynamics of slavery, and the tumult of abolition and national independence movements. The Caribbean Sea will be examined as a region, emphasizing the ties uniting the islands and the circum-Caribbean coasts. The region’s past – including empire and imperial conflict, racial oppression and interaction, and international contact – and its legacies will be discussed in relation to political economics, race, and contemporary culture. (On demand)

LTAM 3255. Ancient Latin America. (3) Cross-listed as ANTH 3155. Archaeology and ethnohistory of the Aztecs, Maya, Inca, and their predecessors; includes an investigation of prehistoric urbanism, the rise and fall of complex societies, and the application of archaeological methods to complex societies. (Yearly)

LTAM 3257. South American Prehistory. (3) Cross-listed as ANTH 3157. Archaeology of the indigenous cultures in South America from the earliest settlement until the arrival of the Spanish, including Moche, Nasca, and Inca; focus on the Central Andean region including Peru, Bolivia, Chile, and Ecuador; examination of the origins of agriculture, interactions of people and the environment, rise and collapse of states and empires, and the role of religion and warfare in ancient societies. (Yearly)

LTAM 3260. Slavery, Racism and Colonialism in the African Diaspora. (3) Cross-listed as AFRS 3260 and HIST 3190. This course is designed to explore how race and racism, slavery, and colonialism served as principal institutions and constructs shaping the experience between Africa and the emerging African Diaspora in the New World. Students will consider how the maintenance of Western social, economic, and political superiority materialized as functions of these three important historical developments. (On demand)

LTAM 3270. Afro-Latin American History. (3) (W) Cross-listed as AFRS 3270 and HIST 3181. This course explores the African Diaspora in Latin America ranging from the Caribbean Sea to the Rio de la Plata. From slavery, to fighting for freedom in the Spanish-American Wars of Independence, to forging new notions of citizenship in twentieth century Brazil, African-descended peoples have an important place in Latin America's historical past. According special attention to regions with concentrated populations of African-descended peoples, this course reveals the vibrant history of Afro-Latin America. (On demand)

LTAM 3274. Resistance and Adaptation: Indian Peoples Under Spanish Rule. (3) Cross-listed as HIST 3174. A historical survey of the interactions of indigenous peoples of the western hemisphere with Spanish colonial authorities from the conquest era to 1825. The course focuses on the indigenous peoples of Mexico, Peru, Chile, and Argentina. (Alternate years)

LTAM 3275. Reform, Riots, and Rebellions in Colonial Spanish America, 1692-1825. (3) Cross-listed as HIST 3175. This course examines the economic, political, and cultural origins of violent conflict in colonial Latin America, culminating with an analysis of the revolutions for independence. (Alternate years)

LTAM 3276. History of Mexico. (3) Cross-listed as HIST 3176. A survey of Mexican history from pre-Columbian times to the present. Special emphasis will be given to the Spanish conquest, the colonial economy, the independence period, the revolution, and relations with the United States. (Alternate years)
LTAM 3277. The Cuban Revolution. (3) Cross-listed as HIST 3177. An examination of the economic and political forces that led to the Cuban revolution. Significant background material from the 19th and early 20th centuries will be presented in addition to an analysis of the revolution and post-revolutionary events. (Alternate years)

LTAM 3278. History of Brazil. (3) Cross-listed as AFRS 3278 and HIST 3178. A study of Brazilian history since 1500, with an emphasis on social and economic history. The course emphasizes slavery and race relations, the emergence of export economics, rural protest movements, the effects of urbanization and industrialization, and the rise and fall of the military dictatorship. Meets non-Western requirement. (Alternate years)

LTAM 3279. Authoritarianism in Latin America. (3) Cross-listed as HIST 3179. A study of authoritarian rule and resistance thereto in one or more selected Latin American countries, including but not limited to Argentina, Brazil, and Chile. May be repeated for credit as topics vary. (Alternate years)

LTAM 3300. Maya Art. (3) Cross-listed as ARTH 3317. Survey of the cultures, artistic production and architecture of the Maya from c. 250 to 800 C. E. Readings and discussions focus on Maya rulership and social structure. (Spring) (Alternate years)

LTAM 3301. Mexica (Aztec) Art. (3) Cross-listed as ARTH 3318. Survey of the cultures, artistic production and architecture of the Central Mexico region from c. 1300 to the period of European invasion in the 16th century. Readings and discussions focus on artistic traditions, daily life, and political structures. (Fall)

LTAM 3302. Andean Art. (3) Cross-listed as ARTH 3319. Survey of the cultures, artistic production and architecture of the Andean region to the period of European invasion in 1532. Readings and discussions focus on artistic traditions, daily life, and political structures. (Fall)

LTAM 3309. Masterpieces of Hispanic Literature in English Translation. (3) Cross-listed as SPAN 3009 if course is on Latin America topic. Prerequisites: sophomore standing and ENGL 1102. Advanced studies of Spanish or Spanish-American literature in English translation. May be repeated for credit as topics vary. Course conducted in English.

LTAM 3310. Spanish American Civilization and Culture. (3) Cross-listed as SPAN 3210. Prerequisite: SPAN 2202 or permission of department. Introduction to the cultural heritage of Spanish America. (Alternate semesters)

LTAM 3312. Introduction to Spanish American Literature. (3) Cross-listed as SPAN 3212. Prerequisite: SPAN 2202 or permission of the department. Introduction to Spanish American literature from the 16th century through the contemporary period. (Spring)

LTAM 3313. Pre-Columbian Art. (3) Cross-listed as ARTH 3112. Survey of the arts and architecture of the Americas before European contact in the 16th century. Special emphasis on the interactions of religion, social systems, and the arts as well as identification of ethnic styles of art. Discussions of readings, lectures, slides and video tapes. Essay exams. (Fall) (Alternate years)

LTAM 3319. Hispanic Women Writers in English Translation. (3) (W) Cross-listed as SPAN 3019 and WGST 3019. Prerequisites: sophomore standing and ENGL 1102. Examination of prose and poetry by women writers from Spain and the Americas to understand women's voices and other cultures. Conducted in English. Knowledge of Spanish not required. (On demand)

LTAM 3360. Studies in Hispanic Film (3) Cross-listed as SPAN 3160 if course is on the Latin American topic. The study of Spanish, Spanish American and/or Hispanic/Latino films. Course conducted in English. May be repeated for credit as topics vary. (Yearly)

LTAM 3400. Latin American Studies Internship. (1-3) Prerequisite: permission of the coordinator. Practical experience and/or training related to Latin American studies. A minimum of 45 hours per credit. (On demand)

LTAM 3800. Independent Study. (1-3) Supervised investigation of an issue related to Latin American Studies that is of special interest to the student and that is not covered in existing or available courses. (On demand)

LTAM 4116. Culture and Conflict in the Amazon (3) Cross-listed as ANTH 4116. This course examines the development strategies Brazil has used in the Amazon and explores how these policies have affected both the environment and the various populations living in the Amazon. Topics covered include environmental degradation, human rights abuses, culture change, migration, and globalization. (On demand).

LTAM 4120. Advanced Business Spanish I. (3) Cross-listed as SPAN 4120. Prerequisites: SPAN 2210, 3201 and an additional 3000- or 4000 level course (3202 recommended), or permission of the department. Advanced studies in Business Spanish, intensive practice in speaking, listening comprehension, reading, writing, and translation in functional business areas such as economics, management, and marketing. (Fall)

LTAM 4121. Advanced Business Spanish II. (3) Cross-listed as SPAN 4121. Prerequisites: SPAN 2210, 3201 and an additional 3000- or 4000 level course (3202 recommended), or permission of the department. Advanced studies in Business Spanish, intensive practice in speaking, listening comprehension, reading, writing, and translation in functional business areas such as marketing, finance, and import-export. (Spring)
LTAM 4302. Caribbean Literature in English. (3)
Cross-listed as AFRS 4102. Prerequisite: Junior standing and at least one course in AFRS for AFRS majors. Topics include: loneliness, quest for identity, nationalism, protest, and the use of patois. (On demand)

LTAM 4310. Studies in Spanish American Poetry. (3)
Cross-listed as SPAN 4210. Prerequisites: two 3000 level courses or permission of the department. Studies of 19th- and 20th-century Spanish American poetry. (Alternate years)

LTAM 4311. Studies in Spanish American Prose Fiction. (3)
Cross-listed as SPAN 4211. Prerequisites: two 3000 level courses or permission of the department. Studies of 19th- and 20th-century Spanish American prose fiction. (Alternate years)

LTAM 4312. Studies in Spanish American Theater. (3)
Cross-listed as SPAN 4212. Prerequisites: two 3000 level courses or permission of the department. Studies of 20th-century Spanish American theater. (On demand)

LTAM 4314. Studies in Hispanic Children’s Literature. (3) Cross-listed as SPAN 4214. Prerequisite: SPAN 3211 or 3212 or permission of the department. Literary works in Spanish written for children. (On demand)

LTAM 4315. Studies in Regional Literature of the Americas. (3) Cross-listed as SPAN 4215. Prerequisite: SPAN 3211 or 3212 or permission of the department. Studies of Mexican, Central American, Caribbean, Andean, Amazonian, or Southern Cone literature. Readings from representative works. Works from non Spanish speaking areas read in Spanish translation. May be repeated for credit if topics vary. (On demand)

LTAM 4316. Social, Political, Cultural, Economic Issues in Hispanic Literature. (3) Cross-listed as SPAN 4216. Prerequisite: SPAN 3211 or 3212 or permission of the department. Contextual issues surrounding Hispanic literature. (On demand)

LTAM 4317. Topics in Hispanic Culture and Civilization. (3) Cross-listed as SPAN 4217. Prerequisite: SPAN 3211 or 3212 or permission of the department. Various topics involving the fine arts: music, dance, art, film. May be repeated for credit if topic varies. Applicable toward Spanish major or minor only when taught in Spanish. (On demand)

LTAM 4318. Cuban Literature. (3)
Cross-listed as SPAN 4218. Prerequisite: SPAN 3211 or 3212 or permission of the department. Cuban literary works in Spanish. (On demand)

LTAM 4322. Studies in Advanced Business Spanish. (3)
Cross-listed as SPAN 4122. Prerequisite: SPAN 3201 or 3202 or 3203 and SOAN 3220 or permission of the department. Advanced studies in special topics in Business Spanish (e.g., Tourism in Spain and Latin America, Free Trade in the Americas (NAFTA/TLCAN, Mercosur, The Andean Pact, CAFTA-DR), Socioeconomic Issues in the Greater Caribbean, Business and Technology in Latin America and Spain). (On demand)

LTAM 4350. Studies in Latin American Literature. (3)
Cross-listed as SPAN 4050. Prerequisites: two 3000 level courses or permission of the department. Study of a predetermined topic in Latin American literature. May be repeated for credit as topics vary. (On demand)

LTAM 4600. Seminar in Latin American Studies. (3) (W) Prerequisite: advanced junior or senior class status. A capstone seminar involving in-depth research and analysis of a topic of common interest to Latin American Studies majors, and the elaboration of a senior writing project. May be taken more than once, in which case the second course will fulfill the capstone requirement. (Spring)

LTAM 4700. Senior Honors Thesis. (3-6) Prerequisite: Senior standing, an overall minimum GPA of 3.25, and permission of the Coordinator of Latin American Studies. The preparation and presentation of an acceptable honors thesis. (On demand)

MATHEMATICS EDUCATION (MAED)

MAED courses offered by the department of Mathematics and Statistics are intended primarily for students seeking teacher licensure, licensure renewal, or license upgrading. These courses may not be used to satisfy the requirements for a major or minor in Mathematics. They may be accepted as non-math electives for B.A. and B.S. degrees in Mathematics and for the M.A. in mathematics education.

MAED 3000. Topics in Mathematics Education, Elementary. (1-6) Prerequisite: Permission of the department. Special topics in mathematics education for grades K-6. May be repeated for credit as topics vary. (On demand)

MAED 3040. Topics in Mathematics Education, Middle Grades. (1-6) Prerequisite: Permission of the department. Special topics in mathematics education for middle grades. May be repeated for credit as topics vary. (On demand)

MAED 3070. Topics in Mathematics Education, Secondary. (1-6) Prerequisite: Permission of the department. Special topics in mathematics education at the secondary level. May be repeated for credit as topics vary. (On demand)

MAED 3222. Teaching Mathematics to Elementary School Learners, Grades K-2. (3) Prerequisites: Students must be accepted as Elementary Education majors in the College of Education. This course is designed to help students develop knowledge and understanding of school mathematics and methods for teaching mathematics to children in grades K
through 2. The course focuses on the importance of learning through manipulative and concrete experiences, on and planning lessons in which students develop their ideas through action and discussion.

MAED 3224. Teaching Mathematics to Elementary School Learners, Grades 3-6. (3) Prerequisites: MAED 3222. This course is designed to help students develop knowledge and understanding of school mathematics and methods for teaching mathematics to children in Grades 3 through 6. The course includes a focus on planning and developing mathematics lessons and also includes the study of a variety of techniques for assessing student learning.

MAED 4103. Using Technology to Teach Secondary School Mathematics. (3) Prerequisite: Admission to Teacher Education or permission of the department. Technology as a tool for exploring mathematical ideas and representing mathematical concepts, including lab assignments related to using technology throughout the secondary school mathematics curriculum. (Spring)

MAED 4105. Geometry in the Secondary School Mathematics Curriculum. (3) Prerequisite: Admission to Teacher Education or permission of the department. Study of geometry from synthetic, transformational, and algebraic perspectives including activities and software to enhance the conjecture/theorem/proof process. (Fall)

MAED 4232. Teaching Mathematics to Middle School Learners. (3) Prerequisites: Admission to Teacher Education or permission of department. This course is the initial teaching methods course for middle school mathematics teachers. This course focuses on middle school mathematics and its relation to the K-12 curriculum. Topics include the development of teaching strategies and activities in middle school mathematics with an emphasis on problem solving, mathematical connections, communication and assessment, including school-based field experiences. (Spring)

MAED 4252. Teaching Mathematics to Secondary School Learners. (3) Prerequisite: Admission to Teacher Education or permission of the department. This course is the initial teaching methods course for middle school mathematics teachers. This course focuses on middle school mathematics and its relation to the K-12 curriculum. Topics include the development of teaching strategies and activities in middle school mathematics with an emphasis on problem solving, mathematical connections, communication and assessment, including school-based field experiences. (Fall)

MATHEMATICS (MATH)

MATH 0900. Math Study Skills and Algebra Review. (1) This course prepares the student to be successful in college algebra or precalculus. Topics include a review of elementary algebra, exponents and radicals, polynomial and rational functions, equations and inequalities. Study skills needed to be successful in mathematics are an important part of this course. Placement into this course is based on the score on the Mathematics Placement Exam which is administered by the Mathematics department and is restricted to students who do not have college-level math credit.

MATH 1100. College Algebra and Probability. (3) Prerequisite: appropriate score on the Mathematics Placement Test or placement by the department. The basic mathematics course for undergraduates not majoring in Mathematics, Engineering, or the Physical Sciences. Fundamental concepts of algebra. Students who already have credit for MATH 1103, 1120, 1121, or 1241 with a grade of C or above may not take 1100 for credit. (Fall, Spring, Summer) (Evenings)

MATH 1102. Introduction to Mathematical Thinking. (3) Prerequisite: appropriate score on the Mathematics Placement Test or placement by the department. An introduction to mathematical ideas designed primarily for non-science students. Topics are drawn from various branches of mathematics which may include algebra, geometry, number theory, probability, statistics and graph theory. Computers may be used. (Fall, Spring)

MATH 1103. Precalculus Mathematics for Science and Engineering. (3) Prerequisite: appropriate score on the Mathematics Placement Test or placement by the department. Intended for students who plan to take MATH 1241. Functions and graphs, linear and quadratic functions, polynomial and rational functions, exponential and logarithmic functions, trigonometric identities. Students who already have credit for MATH 1120, 1121, or 1241 with a grade of C or above may not take MATH 1103 for credit. (Fall, Spring, Summer) (Evenings)

MATH 1105. Finite Mathematics. (3) Prerequisite: appropriate score on the Mathematics Placement Test or placement by the department. Review of high school algebra, elementary matrix algebra, systems of linear equations and inequalities, elementary linear programming; probability. (Fall, Spring)

MATH 1120. Calculus. (3) Prerequisite: appropriate score on the Mathematics Placement Test, MATH 1100 or 1103, or placement by the department. Intended for students majoring in fields other than engineering, mathematics or science. Elements of differential and integral calculus for polynomial, rational, exponential, logarithmic functions, with applications to business and the social and life sciences. (May not be taken for credit if credit has been received for MATH 1211 or 1241.) (Fall, Spring, Summer) (Evenings)

MATH 1121. Calculus (ET). (3) Prerequisite: appropriate score on the Mathematics Placement Test; MATH 1100 or 1103; or placement by the department. Intended for students majoring in Engineering Technology. Elements of differential and integral calculus for polynomial, rational, exponential,
logarithmic and trigonometric functions, with applications to engineering. May not be taken for credit if credit has been received for MATH 1120 or 1241. (Fall, Spring) (Evenings)

MATH 1165. Introduction to Discrete Structures. (3) Prerequisites: ITCS 1212 and ITCS 1212L. Propositions and truth tables, sets, permutations and combinations, relations and functions, lattices, and trees. (Fall, Spring) (Evenings)

MATH 1241. Calculus I. (3) Prerequisite: appropriate score on the Mathematics Placement Test; MATH 1103 with a grade of C or above, or placement by the department. Designed for students majoring in Mathematics, Science, or Engineering. Elementary functions, derivatives and their applications, introduction to definite integrals. (Fall, Spring, Summer) (Evenings)

MATH 1242. Calculus II. (3) Prerequisite: MATH 1241 with a grade of C or above. Methods for evaluating definite integrals, applications of integration, improper integrals, infinite series, Taylor series, power series, and introduction to differential equations. (Fall, Spring, Summer) (Evenings)

MATH 2050. Topics in Mathematics. (2-3) Prerequisite: permission of the department. Topics in mathematics elected to supplement regular offerings at the 2000 level. (May or may not count for a Math core course for the ITCS major.) May be repeated for additional credit with the approval of the department. (On demand)

MATH 2120. Intermediate Applied Calculus. (3) Prerequisite: MATH 1120 or MATH 1241. Introduction to the calculus of functions of several variables, trigonometric functions, techniques of integration of functions of one variable, differential equations, and Taylor polynomials and infinite series. (May not be taken for credit if credit has been received for MATH 1242.) (Fall, Spring, Summer) (Evenings)

MATH 2164. Matrices and Linear Algebra. (3) Prerequisite: MATH 1120 or 1241 with a grade of C or above or permission of the department. Matrix algebra, systems of linear equations, vector spaces, linear transformations, determinants, inner products, eigenvalues. (Fall, Spring, Summer) (Evenings)

MATH 2171. Differential Equations. (3) Prerequisite: MATH 1242 with a grade of C or above. An introduction to ordinary differential equations including first order equations, general theory of linear equations, series solutions, special solutions, special equations such as Bessel's equation, and applications to physical and geometric problems. (Fall, Spring, Summer) (Evenings)

MATH 2241. Calculus III. (3) Prerequisite: MATH 1242 with a grade of C or above. Functions of two or more variables, vectors in two and three dimensions, partial derivatives, optimization, double and triple integrals and their applications. (Fall, Spring, Summer) (Evenings)

MATH 2242. Calculus IV. (3) Prerequisite: MATH 2241 with a grade of C or above. Parametric curves and surfaces, vector fields, line and surface integrals; Green’s theorem, Divergence theorem, Stokes theorem and applications. Fourier series and its applications. (Fall, Spring) (Evenings)

MATH 2340. Number Concepts and Relationships. (3) Prerequisite: MATH 1100 or MATH 1103 with a grade of C or above or permission of the department. A study of integers, rationals, and real numbers; conjectures and intuitive proofs in a number theory; number sequences, patterns, functions; algebraic concepts and skills. An emphasis on the development of problem-solving strategies and abilities. (May not be taken for the major or minor). (Spring)

MATH 2341. Algebra and Algebraic Structures. (3) Prerequisites: MATH 2340 with a grade of C or above or MATH 2102 with a grade of C or above or permission of the department. A study of functions and their properties arising from a variety of problem situations. Representations of real-world relationships with physical models, charts, graphs, equations, and inequalities. Properties of real and complex numbers. Concrete examples of algebraic structures such as groups, rings, fields, and vector spaces. (Fall)

MATH 2342. Data Analysis and Probability. (3) Prerequisite: STAT 1220 or STAT 1222 with a grade of C or above or permission of the department. Introduction to the statistical process. Collection of data from experiments and surveys; organizing, representing, and interpreting data; formulating arguments based on analysis. Plan and conduct experiments and simulations to determine experimental probabilities. Develop counting techniques and other methods to determine probabilities. (May not be taken for the major or minor). (Spring)

MATH 2343. Geometry and Measurement. (3) Prerequisite: MATH 1100 or MATH 1103 with a grade of C or above or permission of the department. A study of properties and relationships of shape, size, and symmetry in two and three dimensions. Explore concepts of motion in two and three dimensions through transformations. Present written and oral arguments to justify conjectures and generalizations. Become familiar with the historical development of Euclidean geometry. (May not be taken for the major or minor). (Fall)

MATH 2428. Mathematical Theory of Interest. (3) Prerequisite: MATH 1241 or 2102. The measurement of interest: simple, compound, nominal, effective, dollar-weighted, time-weighted, force of interest; yield rates; equation of value; basic and more general annuities amortization schedules and sinking funds. (Fall)

MATH 3050. Selected Topics in Mathematics. (2-3) Prerequisite: Permission of the department. Topics selected to supplement regular offerings at the 3000 level in mathematics or statistics. May be repeated for
MATH 3116. Graph Theory. (3) Prerequisite: MATH 2164 or permission of the department. Graphs as mathematical models. Planarity, colorability, connectivity, trees. Applications and algorithms for networks, matching problems and areas of computer science. (Fall) (Alternate years)

MATH 3122. Probability and Statistics I. (3) Cross-listed as STAT 3122. Prerequisite: MATH 2241 with a grade of C or above. Sample spaces, random variables, moment generating functions, some standard distributions, multivariate distributions, laws of large numbers, limit theorems. (Fall) (Alternate years)

MATH 3123. Probability and Statistics II. (3) Cross-listed as STAT 3123. Prerequisite: MATH/STAT 3122. Estimation, bias, consistency, efficiency, maximum likelihood estimates, sufficient statistics, testing, the power function, chi square test, Kolmogorov Smirnov test. (Spring)

MATH 3128. Actuarial Science I. (3) Prerequisite: MATH 2428 or permission of the department. The mathematical theory of compound interest, term structure of interest, annuities, perpetuities, loans, bonds, stocks, derivative, forwards, futures, short and long positions, call and put options, spreads, collars, hedging, arbitrage, and swaps. (Spring)

MATH 3129. Actuarial Science II. (3) Prerequisites: MATH 3122 and MATH 3128 or permission of the department. The theory and application of contingency mathematics in the life and casualty areas, deterministic and probabilistic models for annuities and pensions, additional models of risks and financial transactions. (Fall)

MATH 3141. Advanced Calculus of One Variable. (3) Prerequisites: MATH 2241 and 2164 with grades of C or above. The topology of the real line; continuity, uniform continuity, differentiability, integration, sequences and series of functions. (Fall) (Evenings)

MATH 3142. Advanced Calculus of Several Variables. (3) Prerequisite: MATH 3141. Continuity and differentiability of functions of several variables, inverse and implicit function theorems, integration, Fubini's theorem, change of variables, the classical integral theorems of Gauss, Green and Stokes and their generalizations. (Spring) (Evenings)

MATH 3146. Introduction to Complex Analysis. (3) Prerequisite: MATH 2241 with a grade of C or above. Analytic functions, complex integration, calculus of residues, conformal mapping. (Spring) (Alternate years)

MATH 3163. Introduction to Modern Algebra. (3) (W) Prerequisite: MATH 1242 and MATH 2164 with grades of C or above or permission of the department. Examples and elementary properties of basic algebraic structures, especially groups. The course emphasizes the writing of proofs of elementary theorems. (Fall, Spring) (Evenings)

MATH 3166. Combinatorics. (3) Prerequisites: MATH 2164. Combinatorial modeling, generating functions, recurrence relations, inclusion-exclusion principle and problems from recreational mathematics. (Spring) (Alternate years)

MATH 3171. Applied Mathematics. (3) Prerequisites: MATH 2241 and 2171 with grades of C or above. Separation of variables techniques for the classical partial differential equations of mathematical physics; Fourier series; Sturm-Liouville theory. (Fall) (Evenings)

MATH 3176. Numerical Analysis. (3) Prerequisites: ITCS 1214, MATH 2241 and 2171. Numerical solution of initial value and boundary value problems in ordinary differential equations, direct and iterative methods of solving systems of equations. Selected problems will be programmed for computer solution. (Spring) (Alternate years)

MATH 3181. Fundamental Concepts of Geometry. (3) Prerequisite: MATH 2164 with a grade of C or above. Foundations of geometry, transformations, comparison of Euclidean and non-Euclidean geometries. (Fall, Spring) (Evenings)

MATH 3551. Mathematics Cooperative Education and 49ership Experience. (0) Students must meet a minimum GPA of a 2.0 for 49erships/Service Learning 49erships, be in good standing with the University, complete 30 credit hours at the institution (transfer students are required to complete 12 credit hours), and obtain permission of the department of Mathematics. Acceptance into the Experiential Learning Program by the University Career Center is required. The student will be employed in a manner that affords him/her the opportunity of using and enhancing mathematical knowledge and skills through practical experience of co-op rotation or 49ership experience. Participating students pay a course registration fee for transcript notation (49ership and 49ership only). Assignments must be arranged and approved in advance. Course may be repeated; evaluation is Satisfactory/Unsatisfactory. After completing MATH 3551, the co-op student must take MATH 3652. Satisfactory/Unsatisfactory. MATH 3551 may be repeated with permission of the department. Course may be repeated; evaluation is Satisfactory/Unsatisfactory. After completing MATH 3551, the co-op student must take MATH 3652. The student will give an exposition of his/her work experience in MATH 3551. An exposition of underlying theoretical concepts and related ideas may also be required. (On demand)

MATH 3652. Mathematics Cooperative Education Seminar. (1) Prerequisite: MATH 3551. The student will give an exposition of his/her work experience in MATH 3551. An exposition of underlying theoretical concepts and related ideas may also be required. (On demand)

MATH 3688. Mathematics Awareness Seminar. (0) Prerequisite: sophomore standing. Visiting speakers, discussion of internships, cooperative education and
job opportunities; selected topics in mathematics. (Fall)

MATH 3689. Mathematics Project Seminar. (1) (O)
Prerequisite: Senior standing. Oral presentation by the
student on an area of mathematics or a mathematical
problem. (Fall, Spring)

MATH 3691. Seminar. (1-6) Prerequisite: Permission
of the department. Readings, study and discussion
designed to develop the student’s ability to study
independently and to present results properly. (On
demand)

MATH 3790. Junior Honors Seminar. (3) Prerequisite:
permission of the department. May be repeated once
for additional credit with approval of the department.
(On demand)

MATH 3791. Senior Honors Tutorial. (3) Prerequisite:
Permission of the department. Individual tutorials in
which the student will pursue independent study and
research in any area of mathematics under the
direction of one or more faculty members. The project
of the student will be planned to culminate in a
research paper of original or expository nature. May be
repeated for additional credit with the approval of the
department. (On demand)

MATH 4000. Topics in Foundations or History of
Mathematics. (2-3) Prerequisite: Permission of the
department. Topics in the foundations or the history
of mathematics selected to supplement regular course
offerings in this area of mathematics. May be
repeated for credit with approval of the department.
Credit for the M.A. degree in Mathematics requires
approval of the department. (On demand)

MATH 4040. Topics in Analysis. (2-3) Prerequisite:
permission of the department. Topics in analysis
selected to supplement regular course offerings in this
area of mathematics. May be repeated for credit with
the approval of the department. Credit for the M.A.
degree in Mathematics requires approval of the
department. (On demand)

MATH 4051. Computer Exploration and Generation
of Data. (3) (O) Prerequisite: MATH 2120 or 2241
and Stat 2122 or 2223. This is a project course. The
grade will be based on four to five projects that
will utilize spreadsheet technology. It includes an
introduction to a major spreadsheet, such as Excel.
Assigned projects may be selected from a range of
topics that include: Data Analysis and Exploration;
Dynamical Models and Difference Equations
(Epidemics, Harvesting Models, Population Dynamics,
Predator-Prey Models); Physical Models (projectile
motion, including air resistance, orbits of celestial
bodies, heat propagation); Combinatorics and
Probability (birthday problem, genetics, simulation of
distributions); Optimization (inventory control,
apportionment algorithms); Financial Mathematics
(Stock Price Simulation, Pricing of Derivatives);
Business Simulations (Net Present Value Comparisons
and Risk Evaluation, Sensitivity Analyses). Completed
projects must include written descriptions,
explanation, and evaluation along with appropriate
working spreadsheets that accomplish the assigned
objectives. (Fall, Spring) (Evening)

MATH 4060. Topics in Algebra. (2-3) Prerequisite:
Permission of the department. Topics in algebra
selected to supplement regular course offerings in this
area of mathematics. May be repeated for credit with
the approval of the department. Credit for the M.A.
degree in Mathematics requires approval of the
department. (On demand)

MATH 4080. Topics in Geometry and Topology. (3)
Prerequisite: Permission of the department. Topics in
gometry or topology selected to supplement regular
course offerings in this area of mathematics. May be
repeated for credit with approval of the department.
Credit for M.A. degree in Mathematics requires
approval of the department. (On demand)

MATH 4109. History of Mathematical Thought. (3)
Prerequisite: MATH 1241 or permission of the
department. A study of the development of
mathematics in its historical setting from the earliest
beginnings to modern times. Not approved for the
M.A. in mathematics degree. (Fall) (Evenings)

MATH 4122. Probability and Stochastic Models. (3)
Prerequisite: STAT 2223 or MATH/STAT 3122.
Topics include a brief review of probability, normal
random variables, the Central Limit Theorem, and
applications to Statistics; Poisson process, the
exponential distribution, and applications in actuarial
science; the binomial branch model of option pricing.
(Spring) (Alternate years)

MATH 4128. Risk Theory. (3) Prerequisite: MATH
2120 or MATH 1242, STAT 2223 or
MATH/STAT3122, and STAT 3110. Topics include an
introduction to risk theory and the concept of VAR
(Value-at-Risk), building blocks consisting of
measuring financial risk, computing VAR, backtesting,
portfolio risk, forecasting risks and correlation, and a
study of VAR Systems including VAR Methods, stress
testing, delta-normal VAR, simulations, credit and
liquidity risk. (Spring)(Alternate years)

MATH 4161. Number Theory. (3) Prerequisite: MATH
3163 with a grade of C or above or permission of the
department. A study of the elements of classical
number theory including divisibility, congruences,
diophantine equations, prime numbers and their
distribution, quadratic reciprocity, number-theoretic
functions, and famous unsolved problems. Not
approved for the M.A. in mathematics degree.
(Spring) (Alternate years)

MATH 4163. Modern Algebra. (3) Prerequisite: MATH
3163 or permission of the department. Groups, rings,
integral domains, and fields. (Fall) (Alternate years)

MATH 4164. Abstract Linear Algebra. (3)
Prerequisite: MATH 2164 and 3163 or permission of the
department. Vector spaces over arbitrary fields,
linear transformations, canonical forms, and
multilinear algebra. (Spring) (Alternate years)
MATH 4181. Introduction to Topology. (3) Prerequisite: MATH 2164 with a grade of C or above. Topics from set theory and point set topology such as cardinality, order, topological spaces, metric spaces, separation axioms, compactness and connectedness. (Fall) (Alternate years)

MATH 4691. Seminar. (1-6) Prerequisite: Permission of the department. Individual or group investigation and exposition of selected topics in mathematics. (On demand)

MATH 4692. Seminar. (1-6) Prerequisite: Permission of the department. A continuation of MATH 4691. (On demand)

MIDDLE GRADES EDUCATION (MDLG)

MDLG 3130. The Early Adolescent Learner. (4) Prerequisite: Admission to Teacher Education. Physical, sexual, social, cognitive, and emotional development in the 10-15 year old with emphasis on how these developmental diversities affect the middle grades classroom. Includes 40 hours of field experiences. (Fall)

MDLG 3131. The Philosophy and Curriculum of Middle Grades Education. (4) Prerequisites: MDLG 3130, admission to Teacher Education. Overview of education in the middle grades (6-9) with emphasis on the foundational components, organizational patterns, instructional programs, and integrated curriculum unique to the middle school. Includes 40 hours field experiences. (Spring)

MDLG 3800. Individual Study in Middle Grades Education. (1-6) Prerequisite: Permission of the student’s advisor. Independent study under the supervision of an appropriate faculty member. May be repeated for credit. (Fall, Spring, Summer)

Note: Students are required to complete a year-long internship beginning the semester prior to student teaching and ending upon the successful completion of student teaching.

MDLG 4430. Student Teaching/Seminar: 6-9 Middle Grades Education. (15) (O) Prerequisite: completion of all coursework and approval of an Application for Student Teaching. Planned sequence of experiences in the student’s two areas of content specialization conducted in an approved middle school setting under the supervision and coordination of a University supervisor and a cooperating teacher. The student must demonstrate the competencies identified for his/her specific teaching fields in appropriate grade-level settings. Approximately 35 to 40 hours per week in an assigned school setting, teaching in two areas of concentration and 10-12 on-campus seminars scheduled throughout the semester. (Fall, Spring)

MDLG 4440. Student Teaching/Seminar: 6-9 Middle Grades Education. (12) (O) Prerequisite: completion of all coursework, and departmental approval of an application for Student Teaching. Corequisite: MDSK 4150. A planned sequence of experiences in the student’s two areas of content specialization conducted in approved middle school setting under the supervision and coordination of a university supervisor and an on-site cooperating teacher. During student teaching the student must demonstrate the competencies identified for his/her specific teaching fields in appropriate grade-level settings. Approximately 35-40 hours per week in an assigned school setting, teaching in two areas of concentration with up to eight seminars scheduled throughout the semester. (Fall, Spring)

MLDG 4471. Middle Grades Clinical Experience. (3) Program of learning activities in the student's level and/or area of academic concentration in an approved school setting (gr. 6-9). (On demand)

MIDDLE, SECONDARY, AND K-12 EDUCATION (MDSK)

MDSK 2100. Diversity and Inclusion in Secondary Schools. (3) Introduction to the contexts, challenges, and changes in U.S. secondary education; emphasis on diversity in student populations including special needs students; examination of diversity in schools, including school organizations, approaches to teaching, purposes and expectations for public education, and communities. 10 hours of observations and participation in school settings required. (Fall, Spring, Summer)

MDSK 3150. Research and Analysis of Teaching Middle School Learners. (3) (W) Should be taken in the semester prior to student teaching. Concepts, methods, and practices used by effective teachers in their daily classroom routines, including systematic observation skills, interpretation of observation data, and application of research-based findings. Includes 20 hours of field experiences. (Fall, Spring)

MDSK 3151. Instructional Design and Technology Integration. (3) Prerequisites: MDSK 2100 [SECD students only] or EDUC 2100 and SPED 2100 [MDLG students only], and admission to Teacher Education. Pre- or corequisite: SECD 4140 or MDLG 3130. Planning for instruction and evaluation of learning in the 21st Century classroom. Emphasis on writing learning objectives and instructional plans for various domains of learning. This course is designed as an introduction to the systematic process of planning for effective classroom instruction and assessment. Emphasis will be placed on setting goals and objectives for instruction, planning activities and assessments based on cognitive, social, affective, and psychomotor factors and designing appropriate means of assessing those learning objectives. Special attention will be given to the related use of technology in the development of effective and systematic learning environments. This will include capabilities and limitations of technology, evaluating programs and technological resources, and the effective use of emerging technologies in the classroom. It is expected that the student enter the course with basic
recognition of computer hardware and software. This course has a 15-hour clinical requirement. (Fall, Spring)

MDSK 3160. Learning and Development: Birth through Adolescence. (3) Prerequisites: EDUC 2100, SPED 2100, and admission to Teacher Education. Theories of learning and development and a systematic examination of childhood and adolescence, with particular attention to biological, social, and cognitive areas of child development. Includes 10 hours of field experiences. (Fall)

MDSK 3161. K-12 Curriculum Studies. (3) Prerequisites: EDUC 2100, SPED 2100, and admission to Teacher Education. Curriculum planning and development skills with emphasis on relating school content and skills to societal and individual needs, designing and implementing integrated activities, and examining the nature and functions of schools. (Spring)

MDSK 4150. Assessment, Reflection, and Management Practices. (3) Corequisite for Middle Grades Majors: MDLG 4440; corequisites for Secondary Education Minors: SECD 4451, 4452, 4453, or 4454. Concepts, methods, and practices used by effective teachers in their daily classroom routine, including assessment, reflection, classroom and behavior management. Course may be taught on site at a Professional Development School. Includes 30 hours of field experiences. (Fall, Spring)

MDSK 4251. Teaching Science to Middle and Secondary School Learners. (3) Should be taken semester prior to student teaching. Preparation to teach science at the middle and secondary school levels with emphasis on a holistic, interdisciplinary understanding of science; science as related to everyday life and society; and interdisciplinary aspects of science. Includes 15 hours of field experiences. (Fall, Spring)

MDSK 4253. Teaching Social Studies to Middle and Secondary School Learners. (3) Should be taken semester prior to student teaching. A methods course for teaching social studies at the middle and secondary school levels. Emphasis on using social science content to develop effective teaching strategies, instructional plans, and classroom materials for teaching social studies to middle and secondary school students. Includes 15 hours of field experiences. (Fall, Spring)

MECHANICAL ENGINEERING (MEGR)

Courses must be completed to progress within three attempts including withdrawing from the course with a grade of W. Failure to progress in three attempts will result in suspension from the program.

MEGR 2141. Engineering Mechanics I. (3) Prerequisites: PHYS 2101 and MATH 1242 with a grade of C or above. This course introduces the principles of particle and rigid body mechanics with engineering applications. Force systems and resultants. The equilibrium of particles and rigid bodies. Friction. Properties of areas and volumes.

MEGR 2144. Introduction to Solid Mechanics. (3) Prerequisites: MEGR 2141 with a grade of C or above and MATH 2241. Engineering theory of deformable solids and applications. Stress and deformation resulting from axial, torsion and bending loads. Shear and moment diagrams, Mohr’s circle for stress and strain and buckling of columns.

MEGR 2156. Design Projects Laboratory I. (2) Prerequisites: ENGR1201, ENGR1202, PHYS 2102, MEGR 2141 with a grade of C or above, and MATH 2241. Corequisite: MEGR 2180 Manufacturing Systems. Introduction to design as well as the fundamentals of manufacturing, including computer-aided manufacturing (CAM). Emphasis will be placed on design visualization, functional analysis, and design prototyping. Student designs will be manufactured to verify design concepts.

MEGR 2180. Manufacturing Systems. (3) Prerequisites: ENGR 1202, PHYS 2102L, MEGR 2141 with a grade of C or above, and MATH 2241. Corequisite: MEGR 2156. The course will impart a broad overview of manufacturing materials, processes, and procedures. Topics include mechanical behavior and physical properties, basic materials, casting, rolling, forming, welding, cutting, surfaces, engineering metrology, quality assurance, and automation. Basic concepts of engineering economics and cost estimating. The economics of manufacturing will also be introduced, including the time value of money, economic analysis, and cost estimating.

MEGR 2299. Motorsports Engineering Clinic I. (1) Prerequisite: admission to Motorsports concentration; sophomore standing. An examination of various aspects of automotive and motorsports engineering presented by faculty and industry representatives. Participation as a Motorsports Trainee (MT) is required. MT’s are assigned to automotive projects on campus and/or with industrial partners.

MEGR 2240. Computational Methods for Engineers. (3) Prerequisites: MEGR 2141 with a grade of C or above and MATH 2241. Automated engineering analysis and synthesis techniques based on software engineering principles. Overview of data representation and computing languages. Program development using programming languages and off-the-shelf software packages. Study of numerical methods, potential errors, and computational stability. Emphasis on effective design, testing, and debugging practices.

MEGR 2499. Energy Engineering Clinic I. (1) Prerequisites: Admission to BSME energy concentration, Sophomore standing, and a GPA of 3.0 or above.

Upper division engineering courses (3000 level and above) used to satisfy degree requirements within the College of Engineering are restricted to majors and minors of the College of Engineering.
MEGR 3090. Special Topics in Mechanical Engineering. (1-4) Prerequisite: permission of the department. Technical Elective. The course will build upon and synthesize the knowledge the students have gained from the mechanical engineering core curriculum. The specific topics covered in each separate offering of the course will serve as the vehicle for teaching engineering analysis, synthesis and design, while simultaneously affording an opportunity for the students to point themselves toward an area of specialization. May be repeated for credit.

MEGR 3092. Special Topics in Motorsports Engineering. (1-4) Prerequisite: permission of the department. Technical Elective. The course will build upon and synthesize the knowledge the students have gained from the mechanical engineering core curriculum. The specific topics covered in each separate offering of the course will serve as the vehicle for teaching engineering analysis, synthesis and design, while simultaneously affording an opportunity for the students to point themselves toward an area of specialization. May be repeated for credit.

MEGR 3094. Special Topics in Energy Engineering. (1-4) Prerequisite: permission of the department. Technical Elective. Builds upon and synthesizes the knowledge the students have gained from the mechanical engineering core curriculum. The specific topics covered in each separate offering of the course will serve as the vehicle for teaching engineering analysis, synthesis and design, while simultaneously affording an opportunity for the students to point themselves toward an area of specialization. May be repeated for credit.


MEGR 3112. Thermodynamics II. (3) Prerequisite: MEGR 3111, with a grade of C or above. General thermodynamic relations; equations of state and generalized charts. Combustion, dissociation, and chemical equilibrium. Introduction to power cycles.

MEGR 3114. Fluid Mechanics. (3) Prerequisite: MEGR 3121 with a grade of C or above. Basic concepts of a fluid and the fundamentals of ideal and real fluid flow. Topics include fluid statics, conservation principles, Bernoulli’s equation, fluid flow in pipes, and measurement devices.

MEGR 3116. Introduction to Heat Transfer. (3) Prerequisites: MATH 2171 and MEGR 3111, both with a grade of C or above. One and two dimensional steady state conduction. Finite difference methods. Radiative heat transfer, emissivity, black body radiation. Heat exchange among two and multi-body systems. Introduction to concepts and applications of convective heat transfer.

MEGR 3121. Dynamics Systems I. (3) Prerequisites: MEGR 2141 and MATH 1242, both with a grade of C or above. The kinematics and kinetics of rigid bodies. Work-energy and impulse-momentum principles and conservation laws. Introduction to the kinematics of mechanisms.

MEGR 3122. Dynamic Systems II. (3) Prerequisites: MEGR 2240, MEGR 3121 and MATH 2171, all with a grade of C or above. Modeling of mechanical dynamic systems. Vibration of lumped mass systems. Analysis and design of mechanical systems using time domain and frequency domain methods.

MEGR 3131. Introduction to Electronic Materials. (3) Prerequisite: PHYS 2102, with a grade of C or above. Technical Elective. Electronic materials and devices with examples from crystalline and amorphous semiconductors, junction and MOS devices, thermoelectrics, lasers and super-conductors. Introduction to the quantum mechanics of electrons in solids, electron-atom interactions and energy band model, providing a basis for rationalizing a wide variety of electronic properties.

MEGR 3152. Mechanics and Materials Laboratory. (2) (W) Prerequisites: MEGR 2144, MEGR 3121, MEGR 3161 and MEGR 3171L, all with a grade of C or above. Laboratory experiments related to the areas of mechanics and materials engineering. Three hours of laboratory work per week.

MEGR 3156. Design Projects Lab II. (2) Prerequisites: ECGR 2161, MEGR 2144, and MEGR 2156 all with a grade of C or above. Study of the process of design and reduction to practice of engineering concepts in a team environment. Requirements definition, concept synthesis, concept of evaluation, project planning and execution.

MEGR 3161. Introduction to Engineering Materials. (3) Prerequisites: CHEM 1251, MATH 2171, and MEGR 2144 with a grade of C or above. Classifications of engineering materials. Introduction to property structure relationships. Ideal and defective atomic structures of solids with examples from metals, ceramics and polymers. Cold working and annealing effects. Phase equilibria in alloys; introduction to diffusional processes and transformation kinetics.

MEGR 3162. Mechanical Behavior and Strengthening of Solids. (3) Prerequisite: MEGR 3161, with a grade of C or above. Technical Elective. Mechanical properties of materials including elastic behavior, plastic flow, fracture, creep, fatigue, and elevated temperature effects. Correlation of properties with atomic and microscopic structure. Dislocation theory and its application to mechanical behavior and strengthening mechanisms. Alloy hardening effects; effects of processing and heat treatments. Applications in Fe-C alloys.

MEGR 3171. Introduction to Measurements and Instrumentation. (2) Prerequisite: ECGR 2161, with a grade of C or above. Corequisite: MEGR 3171L.
MEGR 3171L. Instrumentation Laboratory. (2) (W)
Prerequisite: PHYS 2102L with a grade of C or above. Corequisite: MEGR 3171. Utilization of measuring equipment targeted to mechanical engineering applications. Experiments will focus on the use of instrumentation and computer interfacing methods for the optimization of measurement processes. Basic programming of scientific instruments.

MEGR 3210. Automotive Power Plants. (3)
Prerequisite: MEGR 3112, with a grade of C or above. Technical Elective. Energy analysis of internal and external combustion engines for vehicular propulsion. Thermodynamic principles for combustion efficient use of fuel combustion, different types of fuel use, and pollutant control.

MEGR 3211. Road Vehicle Dynamics. (3)
Prerequisites: MEGR 3121 and MEGR 3122, both with a grade of C or above. Technical Elective. An introduction to road vehicle Dynamics. Acceleration and braking performance, road loads, steady-state cornering, suspension, steering system and tire behavior.

MEGR 3212. Heat Convection and Compact Heat Exchanger Design. (3)
Prerequisites: MEGR 3114 and MEGR 3116, both with a grade of C or above. Technical Elective. Natural, forced internal and external heat convection, heat convection in phase change (boiling and condensation) and design of compact heat exchangers.

MEGR 3214. Refrigeration and Air/Conditioning. (3)
Prerequisites: MEGR 3112 and 3116, both with a grade of C or above. Technical Elective. Thermodynamics and heat transfer applied to analysis, design/cooling/heating systems.

MEGR 3216. Thermal/Fluid Design. (3)
Prerequisites: MEGR 3114 and 3116, both with a grade of C or above. Design of systems utilizing thermodynamic, heat transfer, and fluid flow principles. Topics include thermal system design, thermodynamic modeling, design applications with heat transfer, thermo-economic optimization of simple and complex systems.

MEGR 3221. Machine Analysis and Design I. (3)
Prerequisite: MEGR 3122 and MEGR 2144, both with a grade of C or above. Technical application of basic principles of mechanical science to analysis of machines and mechanical systems. Design of typical machine elements. Strength and deflection requirements.

MEGR 3222. Machine Analysis and Design II. (3)
Prerequisite: MEGR 3221, with a grade of C or above. Technical Elective. Synthesis of machines and mechanical systems. Analysis, creative design and selection of machines and machine elements.

MEGR 3225. Introduction to Finite Element Analysis. (3)
Prerequisites: MEGR 2144 and MEGR 3122, both with a grade of C or above. Technical Elective. The basic concepts of finite element analysis (FEA) are introduced. The necessary concepts from linear algebra are reviewed. Simple elements such as truss and beam elements are emphasized, with an introduction to continuum elements for structural analysis. Introduction to heat transfer elements for steady state conduction and convection. Mathematics software is used to illustrate such concepts as the finite element assembly process, and the solution of the primary unknowns. A commercially available finite element code is also introduced.

MEGR 3231. Advanced CAD/CAM. (3)
Prerequisites: ENGR 1202 and MEGR 2156, both with a grade of C or above. Technical Elective. An introduction to advanced CAD modeling techniques, reverse engineering and Rapid technologies with a detailed application of these tools in engineering design.

MEGR 3232. Plastic Part Design. (3)
Prerequisites: ENGR 1202 and MEGR 2156, both with a grade of C or above. Technical Elective. An introduction to the science and technology of polymer materials and processes with an emphasis on the application of these topics to engineering design.

MEGR 3233. Introduction to Biomaterials. (3)
Prerequisites: MEGR 3161 with a grade of C or above. Technical Elective. An introduction to biomaterials science and engineering, focusing on traditional classes of materials used for biomedical applications (i.e., metals, ceramics, polymers, and composites).

MEGR 3234. Introduction to Biodynamics. (3)
Prerequisites: MEGR 2144 and MEGR 3121, both with a grade of C or above. Technical Elective. This course will introduce dynamic analysis of the human musculoskeletal system. Students will learn to develop lumped mass, planar rigid body and 3D rigid body models of human movement, and to learn to calculate internal forces in muscles and joints during daily and sports activities.

MEGR 3241. Motorsports Instrumentation. (3)
Prerequisites: ECGR 2161 with a grade of C or above. Technical Elective. General applications of test equipment and instrumentation as applied to the motorsports industry. Includes three two-hour labs and one driver outing during the semester.

MEGR 3242. Applied Vehicle Aerodynamics. (3)
Prerequisites: MEGR 2240, MEGR 3111, and MEGR 3114, all with a grade of C or above. Technical Elective. Flow of air around streamlined and bluff bodies, aerodynamic forces, understanding flow separation and reattachment, aerodynamic tools, introduction to computational fluid dynamics, use of
commercial CFD packages to solve fluid flow problems, computer simulation and analysis of flow around bluff bodies and road vehicles including racecars.

MEGR 3243. Automotive Powertrain Laboratory. (3) Prerequisites: MEGR 3111 with a grade of C or above. Technical Elective. Applications of test equipment, instrumentation, and data acquisition as applied to the powertrain. Includes ten one-hour labs and a racing engine team tour.

MEGR 3251. Thermal/Fluids Laboratory. (2) (W) Prerequisites: MEGR 3111, MEGR 3114, and MEGR 3171L, all with a grade of C or above. Laboratory experiments related to the areas of thermodynamics, fluid mechanics, and heat transfer. Three hours of laboratory work per week.

MEGR 3255. Senior Design I. (2) Prerequisite: MEGR 3156 and MEGR 3152 with a grade of C or above. Corequisite: MEGR 3251 and Senior standing in mechanical engineering. First of a two-semester sequence leading to a major integrative experience in applying the principles of design and project management to the design of a major mechanical engineering system. Teamwork and communication skills are emphasized.

MEGR 3256. Senior Design II. (2) (O) Prerequisite: MEGR 3255 with a grade of C or above. A continuation of MEGR 3255 including project execution leading to an oral presentation and final written report.

MEGR 3281. Numerical Control of Manufacturing Processes. (3) Prerequisite: MEGR 2180. Technical Elective. Fundamental theory and application of numerically controlled machine tools including design principles, elements of machine structure, control systems programming methods. Role of numerical control in flexible manufacturing systems. Two lectures and a two hour lab per week.


MEGR 3299. Professional Development. (1) An examination of various aspects of engineering as a profession. Graded on a Pass/No Credit basis.

MEGR 3355. Motorsports Engineering Clinic II. (2) Prerequisite: admission to Motorsports concentration, Senior standing in mechanical engineering, MEGR 2299 and MEGR 3156, and MEGR 3152 all with a grade of C or above. Corequisite: MEGR 3251. First of a two-semester sequence leading to a major integrative experience in applying the principles of design and project management to the design of an automotive engineering system. Teamwork and communication skills are emphasized. An examination of various aspects of automotive and motorsports engineering presented by faculty and industry representatives.

MEGR 3356. Motorsports Engineering Clinic III. (2) (O) Prerequisite: admission to Motorsports concentration and MEGR 3355 with a grade of C or above. A continuation of MEGR 3355 including project execution, project reporting and leading to an oral presentation and a final written report. An examination of various aspects of automotive and motorsports engineering presented by faculty and industry representative.

MEGR 3451. Stationary Power Plant Systems. (3) Prerequisites: MEGR 3112, MEGR 3114, and MEGR 3116, all with a grade of C or above. Technical Elective. Thermodynamics and heat transfer applied to the analysis and design of stationary power plant systems.

MEGR 3452. Introduction to Nuclear Engineering. (3) Prerequisites: MEGR 3112, MEGR 3114, and MEGR 3116, all with a grade of C or above. Technical Elective. An introduction to the science and technology of nuclear engineering as applied to power plant operation and design.

MEGR 3455. Energy Engineering Clinic II. (2) Prerequisites: Senior standing; MEGR 2499, MEGR 3112, MEGR 3156, and MEGR 3152 with grades of C or above. Corequisite: MEGR 3251 with a grade of C or above. First of a two-semester sequence leading to a major integrative experience in applying the principles of design and project management to the design of a major mechanical engineering system with energy/power emphases. Teamwork and communication skills are emphasized.

MEGR 3456. Energy Engineering Clinic III. (2) Prerequisites: MEGR 3455 with a grade of C or above. Second of a two-semester sequence leading to a major integrative experience in applying the principles of design and project management to the design of a major mechanical engineering system with energy/power emphases. Teamwork and communication skills are emphasized.

MEGR 3695. Mechanical Engineering Cooperative Education Seminar. (1) Required of Co-op students during semesters immediately following each work assignment for presentation of engineering reports on work done the prior semester.

MEGR 3890. Individualized Study. (1-3) Prerequisite: permission of the department. Technical Elective. Supervised individual study within an area of a student's particular interest which is beyond the scope of existing courses. May be repeated for credit.

MEGR 3990. Undergraduate Research. (1-4) Prerequisite: Permission of the department. Technical Elective. Independent study of a theoretical and/or experimental problem in a specialized area of mechanical engineering. Topics originate from the student or the faculty member supervising the study. May be repeated for credit.
MEGR 4112. Intermediate Fluid Mechanics and Vehicle Aerodynamics. (3) Prerequisites: MEGR 3111 and 3114, both with a grade of C or above. Technical Elective. A continuation of MEGR 3114. Topics include flow over body surfaces, lift and drag, boundary layers, ground effect, potential flow theory and compressible flow. Application of aerodynamics to ground vehicles and its effect on vehicle performance and handling.

MEGR 4113. Energy Conversion I. (3) Prerequisites: MEGR 3112 and MEGR 3114, both with a grade of C or above. Technical Elective. Application of principles of thermodynamics, fluid flow and heat transfer to internal combustion engines, compressors, turbines, heat exchanges, refrigeration, and cryogenics.

MEGR 4127. Introduction to Robotics. (3) Prerequisites: Senior standing in ME department. Technical Elective. Modeling of industrial robots, homogeneous transformations, static forces, kinematics, velocities, dynamics, computer animation of dynamic models, motion trajectory planning, and introduction to vision, sensors and actuators.

MEGR 4131. Solid State Transformations. (3) Prerequisite: MEGR 3161 with a grade of C or above. Technical Elective. Thermodynamics, morphology and kinetics of solid state transformations. Diffusion and absolute reaction rate theory; crystallographic nature of phase transformations; nucleation and growth processes; precipitation and oxidation reaction.


MEGR 4144. Intermediate Dynamics. (3) Prerequisites: MEGR 3121 and MATH 2171, both with a grade of C or above. Technical Elective. Further studies in dynamics of particles and rigid bodies, with engineering applications. Introduction to Lagrange’s equations of motion. Multi-degree-of-freedom vibrations.

MEGR 4162. Materials Production and Process. (3) Prerequisites: MEGR 3161, with a grade of C or above, and permission of instructor. Technical Elective. Applications of thermodynamics and chemistry to extractive process metallurgy. Fundamental principles of materials forming operations. Casting, mechanical working and joining methods.

MEGR 4165. Introduction to Nondestructive Evaluation Methods. (3) Prerequisite: MEGR 3161, with a grade of C or above. Technical Elective. Nondestructive evaluation principles and techniques, including liquid penetrate, magnetic particle, acoustic emission, ultrasound, radiography and eddy currents.

METEOROLOGY (METR)

METR 3140. Introduction to Meteorology and Climatology. (3) Prerequisite: ESCI 1101/1101L, or permission of instructor. Fundamental physical principles of weather and climate. Analysis of short and long term atmospheric behavior are introduced. Topics include solar radiation, temperature, moisture, wind and pressure, synoptic systems, regional climates, paleoclimates, climatic change, and applied climatology. (Fall)

METR 3210. Atmospheric Thermodynamics. (3) Prerequisites: METR 3140 with a grade of C or above and MATH 1241, or permission of instructor. The study of the physical processes associated with atmospheric thermodynamics and stability. Topics include: atmospheric composition, equation of state, hydrostatics, first and second laws of thermodynamics for dry, moist, and saturated air, atmospheric electricity. Principles of atmospheric radiation, radiative transfer, and radar meteorology. Three hours of combined lecture and lab per week. (Spring)

METR 3220. Physical Meteorology. (3) Prerequisite: METR 3210 with a grade of C or above, or permission of instructor. Properties of aerosols and clouds, cloud nucleation and precipitation processes, and atmospheric electricity. Three hours of combined lecture and lab per week. (Fall)

METR 3245. Synoptic Meteorology. (4) Prerequisite: METR 3210 with a grade of C or above, or permission of instructor. Principles of meteorological analysis; fundamental concepts of meteorology, thermodynamics, and kinematics. The atmosphere is studied as a whole. The general circulation of the atmosphere is solved for dry, moist, and saturated air, atmospheric electricity. Principles of atmospheric circulation, circulation, vorticity, divergence, balanced and unbalanced flows, and the general circulation. Three hours of lecture and one three-hour lab per week. (Fall)

METR 3250. Dynamic Meteorology. (4) Prerequisites: METR 3245 with a grade of C or above, MATH 1242, and PHYS 2101, or permission of instructor. Principles of atmospheric dynamics including the equations of motion, circulation, vorticity, divergence, balanced and unbalanced flows, and the general circulation. Three hours of lecture and one three-hour lab per week. (Spring)

METR 3252. Weather Analysis Laboratory. (1) Prerequisite: METR 3245 and permission of instructor. Topics related to atmospheric observation, data collection, analysis, and techniques of weather forecasting. (On demand)

METR 3330. Weather Forecasting. (3) Prerequisite: METR 3245, or permission of instructor. Focuses on weather forecasting: real-time, short-term, and long-term. Verification techniques will be studied. Three hours of combined lecture and lab per week. (Spring,
METR 3450. Advanced Synoptic Meteorology. (3) Prerequisite: METR 3250 with a grade of C or above, or permission of instructor. An integrated view of synoptic and dynamic meteorology focusing on advanced conceptual models and analysis techniques for mid-latitude weather systems and regional precipitation events. Three hours of combined lecture and lab per week. (Fall)

METR 4250. Advanced Dynamic Meteorology. (3) Prerequisites: METR 3250 with a grade of C or above, MATH 2171, and MATH 2241, or permission of instructor. An in-depth examination of atmospheric dynamics, focusing on the structure and evolution of synoptic and mesoscale weather systems, wave dynamics (Rossby, topographic, inertia-gravity, etc.), scale-analysis, non-dimensional numbers, and atmospheric modeling. Three hours of combined lecture and lab per week. (Fall)

METR 4320. Tropical Meteorology. (3) Prerequisite: METR 3250 or permission of instructor. A comprehensive study of the tropical atmosphere, including climatology, mean structure and circulation, air-sea energy exchange, cumulus transport, synoptic waves, and tropical storms. Special attention is paid to the formation, evolution, motion, and societal impacts of hurricanes. Three hours of combined lecture and lab per week. (Fall, On demand)

METR 4350. Mesoscale Meteorology. (3) Prerequisite: METR 3250 or permission of instructor. A comprehensive study of the structure, evolution, and dynamics of atmospheric phenomena having spatial scales between 2 and 2000 km. Topics include: fronts, convective initiation, mesoscale convective systems, severe thunderstorms, tornadoes, low-level jets, drylines, land-sea breezes, shallow convection, and terrain effects. Three hours of combined lecture and lab per week. (Spring, On demand)

METR 4400. Internship in Meteorology. (3-6) Prerequisite: permission of the department. Research and/or work experience designed to be a logical extension of a student’s academic program. The student must apply to department for an internship by submitting a proposal which specifies the type of work/research experience preferred and how the internship will complement his or her academic program. The department will attempt to place the selected students in cooperating community organizations to complete specified research or work-related tasks which are based on a contractual arrangement between the student and community organization. The student can receive three to six hours credit, depending on the nature and extent of the internship assignment. (On demand)

METR 4800. Individual Study in Meteorology. (1-4) Prerequisite: permission from the department and pre- or corequisite: METR 3250 or METR 4150. Applied Climatology. (3) (W) Methods of acquiring and analyzing climatic data in various types of applied problems. Emphasis on methods to assess and reduce the impact of weather and climate upon human activities. Three hours of combined lecture and lab per week. (Spring)

METR 4400. Internship in Meteorology. (3-6) Prerequisite: permission of the department. Research and/or work experience designed to be a logical extension of a student’s academic program. The student must apply to department for an internship by submitting a proposal which specifies the type of work/research experience preferred and how the internship will complement his or her academic program. The department will attempt to place the selected students in cooperating community organizations to complete specified research or work-related tasks which are based on a contractual arrangement between the student and community organization. The student can receive three to six hours credit, depending on the nature and extent of the internship assignment. (On demand)

METR 4800. Individual Study in Meteorology. (1-4) Prerequisite: permission from the department and credit hours established in advance. Tutorial study or special research problems. The student must request permission for independent study from an individual faculty member. May be repeated for credit as topics vary. (On demand)

MANAGEMENT (MGMT)

MGMT 1140. Introduction to Business. (3) Prerequisite: less than 45 hours earned. Fundamentals of business including marketing, management, production, accounting, finance, economics, information systems and other business areas. A general elective course that does not satisfy a requirement for any concentration or major in the Belk College of Business. (On demand)

MGMT 3000. Topics in Management. (3) Prerequisite: Junior standing. Topics from the area of Management and Administration. The course may be repeated for credit. (On demand)

MGMT 3140. Management and Organizational Behavior. (3) Prerequisites: ACCT 2121, 2122; ECON 2101, 2102, INFO 2130; Junior standing. A study of the role of manager with an emphasis on understanding the behavioral and administrative theories and concepts needed to succeed in contemporary organizations. Topics covered in the course include motivation, leadership, managing teams, and teamwork. (Fall, Spring, Summer) (Evenings)
MGMT 3170. Ethics and Global Capitalism. (3) Prerequisite: Junior standing. The course is a study of ethical arguments supporting and critical of capitalist economic and social systems. Topics to be addressed may include property rights, justice, desert, equality, and sustainable capitalism. (Yearly)

MGMT 3241. Human Resource Management. (3) Prerequisite: MGMT 3140 with a grade of C or above. The study of effectively selecting, utilizing, assessing and developing managers as well as the role of the Human Resource department in administering human resources in a changing and demanding environment. Experience in developing and utilizing behavioral science research methods to assess effectiveness. (Fall, Spring) (Evenings)

MGMT 3243. Employment Law. (3) Cross-listed as ECON 3107. Prerequisite: MGMT 3140 with a grade of C or above. This course examines the legislation which impacts human resource management practices in union and non-union settings. Topics covered include fair employment practices, anti-discrimination law, representation elections, unfair labor practices, compensation and benefit legislation, privacy concerns and dispute settlement processes. (Fall, Spring) (Evenings)

MGMT 3260. Managerial Communication. (3) Prerequisites: MGMT 3140 with a grade of C or above and COMM 3160. An examination of the roles of communication networks and strategies in managerial decision making. Emphasis on the role of the communication skills in managing change, organizational conflict, and corporate cultures. Cases will be used to analyze and address specific management problems. (Fall, Spring)

MGMT 3274. International Business Processes and Problems. (3) Prerequisite: MGMT 3140 with a grade of C or above. Management Majors and International Business Majors. Junior standing. An introduction to the process, institutions and problems associated with exporting, importing and management of multinational businesses. (Fall)

MGMT 3275. International Management. (3) Prerequisites: MGMT 3140 and MGMT 3274 with grades of C or above, Senior standing. Preparation for effective management in a world characterized by intense international competition. Case studies, projects, and presentations assist students to apply concepts and theories. (Spring)

MGMT 3277. Entrepreneurship. (3) Prerequisites: MGMT 3140 with a grade of C or above. Review of the processes by which continuous and discontinuous innovations are developed into intellectual property and then utilized as the basis for intellectual property commercialization. Cognitive aspects of innovation and creativity are covered as well as issues with patents, copyrights, trademarks, and intellectual property protection. The course presents a commercialization model by which innovations are developed into commercial products. (Fall, Spring)

MGMT 3280. Business Policy. (3) Prerequisites: Senior standing; BLAW 3150, COMM 3160, ECON 3125, FINN 3120, INFO 3130, MGMT 3140, MKTG 3110, and OPER 3100. (Accounting majors are required to take BLAW 3150, COMM 3160, FINN 3120, INFO 3130, MGMT 3140, MKTG 3110, and OPER 3100 and earn a grade of C or above.) Concerns the role of top management of the firm in integrating internal functions and environmental forces. Emphasis on defining economic, technological, ethical, political and social factors affecting the firm and their consideration in setting goals and operating policies. (Fall, Spring, Summer) (Evenings)

MGMT 3282. Managerial Ethics. (3) Prerequisites: BLAW 3150, MKTG 3110, MGMT 3140 with grades of C or above; and completion of any two MGMT electives. This capstone course for the management major provides a managerial perspective on leadership in formal organizations. Emphasis is placed on team-building, exercising influence, decision-making, and conflict management. Pedagogical tools to be used include role playing, case analyses, self-assessment of leadership competencies, and shadowing of working managers. (Fall, Spring, Summer)

MGMT 3400. Professional Internship. (0-6) Prerequisite: Junior or Senior in good standing and department approval. Full or part-time academic year internship in areas complementary to the concentration area of studies and designed to allow theoretical and course-based practical learning to be applied in a supervised industrial experience. Requires 50 hours of supervised working for the internship organization per hour of credit. Each student’s internship program must be approved by the supervising Management faculty member. A proposal form must be completed and approved prior to registration and the commencement of the work experience. Participating students will be required to submit a mid-term report and a final report to the supervising faculty member. The supervising faculty member will discuss and document expectations for both reports with the student prior to the commencement of the internship. Both the mid-term and final report will be graded by the supervising faculty member who will consult the off-campus supervisor at the internship organization. A maximum of three credit hours may be applied in a supervised industrial experience. (Fall, Spring, Summer)

MGMT 3500. Cooperative Education and 49ership
Experience. (0) Enrollment in this course is required for the department’s cooperative education and 49ership/service 49ership students during each semester they are working in a position. This course is restricted to majors in the department of Management. Acceptance into the Experiential Learning Program by the University Career Center is required. Participating students pay a course registration fee for transcript notation (49ership and co-op) and receive full-time student status (co-op only). Assignments must be arranged and approved in advance. Course may be repeated; evaluation is Satisfactory/Unsatisfactory. Only open to undergraduate students; Graduate level students are encouraged to contact their academic departments to inquire about academic or industrial internship options for credit. For more information, contact the University Career Center. (Fall, Spring, Summer)

MGMT 3800. Directed Study. (1-6) Prerequisites: Permission of the department chair and Junior standing. Enrollment granted only by permission of the faculty with whom the work will be performed. The student’s work assignments will be designed by the student and faculty member who will oversee the project of study. The credit hours will be determined prior to enrollment and will be based on the particular project undertaken. (On demand)

MKTG 3000. Topics in Marketing. (3) Prerequisite: MKTG 3110 with a grade of C or above, or permission of the department. Topics from the area of marketing. This course may be repeated for credit as topics vary. (On demand)

MKTG 3110. Marketing Concepts. (3) Prerequisites: ACCT 2121, ACCT 2122, ECON 1201, ECON 1202, INFO 2130, MATH 1120, and STAT 1220 with grades of C or above; Junior standing. Designed to acquaint the student with the marketing concept, various aspects of the marketing-external environment interface, and interrelatedness with other functional areas. Provides marketing majors with a foundation for further study, while offering non-marketing majors a survey of marketing’s function in business organizations. (Fall, Spring, Summer)

MKTG 3210. Marketing Research and Analysis. (3) Prerequisites: MKTG 3110 with a grade of C or above, STAT 1220. An applications course that covers the entire research process including problem identification, secondary and primary data collection, scaling techniques, questionnaire design, reliability and validity, experimental design, sampling, data analysis, and data communication. (Spring)

MKTG 3211. Advertising and Promotions Management. (3) Prerequisites: MKTG 3110 with a grade of C or above. Covers all areas of marketing promotion, including such topics as advertising, media selection, packaging and sales promotion. Offers basic skills and techniques to allow the student to enter careers in advertising or media. (Fall, Spring)

MKTG 3212. Retailing Management. (3) Prerequisite: MKTG 3110 with a grade of C or above. Presents retailing as a part of the marketing distribution phase of a total interactive marketing system. Key concepts include consumer and market analysis, store location, store layout, merchandising, pricing and promotional issues and problems. Also considers legal and environmental implications. Emphasis on application of course concepts through class discussion and assignments. (Fall, Spring)

MKTG 3213. Professional Selling and Sales Management. (3) Prerequisite: MKTG 3110 with a grade of C or above. An overview of skills and knowledge involved in individual selling and management of sales programs. Emphasis on sales and sales management theories and their applications. (Fall, Spring)

MKTG 3214. Internet Marketing. (3) Prerequisites: MKTG 3110 with a grade of C or above, INFO 2130 or College Micro Computer Proficiency Test with a grade of C or above. Emphasis on developing successful Internet marketing strategy based on quantitative and qualitative analysis of customer, competitors and channel members. Incorporates online and offline communication media and hands-on experience with Internet applications. (Fall)

MKTG 3215. Global Marketing Management. (3) Prerequisite: MKTG 3110 with a grade of C or above. A course that assesses global market opportunities, develops global market strategies, and implements global market plans. Major topics covered include examining cultural, social, legal, political, financial, and geographical environments. The marketing mix elements are studied in the global environment. (Fall, Spring)

MKTG 3216. Consumer Behavior. (3) Prerequisite: MKTG 3110 with a grade of C or above. Examination of consumer decision-making processes in the purchase, usage and disposal of goods, services and ideas. Emphasis on understanding consumption-related behaviors and the development and evaluation of marketing strategies intended to influence those behaviors. Particular focus on managing changes in consumption behavior. (Fall, Spring)

MKTG 3219. Marketing Strategy. (3) Prerequisites: MKTG 3110 with a grade of C or above, completion of at least three marketing elective courses, and Senior standing. Integration of all marketing elements in a strategic planning framework. Emphasis on areas of strategic importance, especially those which have significant implications and relevance for marketing policy decisions in competitive situations. (Fall, Spring, Summer)

MKTG 3220. Sports Marketing. (3) Prerequisite: MKTG 3110 with a grade of C or above. The course will explore the strategies necessary for success in marketing sports events, products and services. The course will build knowledge, skills, and practical understanding of the nature, contexts and dynamics of sports marketing and critically explore the product,
pricing, promotion, and distribution – the strategies – available to sports and sports-related businesses. (Fall)

MKTG 3400. Marketing Internship. (3) Prerequisites: Junior and Senior marketing majors in good standing, with the completion of MKTG 3110 with a grade of C or above, plus two Marketing electives; permission of the Department of Marketing Internship Coordinator. Provides a meaningful work experience in a field of marketing. Requires 150 hours of supervised employment, 50 hours per credit hour. Internship proposals can be initiated by the student or by the department. Student should consult the department chair well in advance of registration to discuss availability of positions. Proposal forms must be completed and approved prior to registration. Graded on a Pass/No Credit basis. Cannot be repeated for credit or taken for credit at the same time or following any other internship for credit. (Fall, Spring, Summer)

MKTG 3500. Cooperative Education and 49ership Experience. (0) Enrollment in this course is required for the department’s cooperative education and 49ership/service. 49ership students during each semester they are working in a position. This course is restricted to majors in the Department of Marketing. Acceptance into the Experiential Learning Program by the University Career Center is required. Participating students pay a course registration fee for transcript notation (49ership and co-op) and receive full-time student status (co-op only). Assignments must be arranged and approved in advance. Course may be repeated; evaluation is Satisfactory/Unsatisfactory. Only open to undergraduate students; Graduate level students are encouraged to contact their academic departments in inquire about academic or industrial internship options for credit. For more information, contact the University Career Center. (Fall, Spring, Summer)

MKTG 3800. Directed Study. (1-3) Prerequisites: Permission of the department and Junior standing. Enrollment granted only by permission of the faculty with whom the work will be performed. The student’s work assignments will be designed by the student and faculty member who will oversee the project of study. The credit hours will be determined prior to enrollment and will be based on the particular project undertaken. The proposal must be approved by the department chair. (On demand)

MILITARY SCIENCE (MSCI)


MSCI 1102L. Introduction to Leadership. (1) Corequisite: MSCI 1102L. Overview of Leadership fundamentals such as setting direction, problem-solving, listening, presenting briefs, providing feedback, and using effective writing skills. Students explore dimensions of leadership values, attributes, skills, and actions in the context of practical, hands-on, and interactive exercises. Includes instruction in basic tactics. Participation in leadership lab is required. There is no military obligation to take this course; open to all UNC Charlotte students. (Spring)

MSCI 2101. Innovative Team Leadership. (2) Corequisite: MSCI 2101L. Explores the dimensions of creative and innovative tactical leadership strategies and styles by examining team dynamics and two historical leadership theories (trait and behavior theories) that form the basis of the Army leadership framework. Students practice aspects of personal motivation and team building in the context of planning, executing, and assessing team exercises and participating in leadership labs. Includes instruction in troop leading procedures, tactical movement, battle drills, and offensive and defensive operations. Participation in leadership lab is required. There is no military obligation to take this course; open to all UNC Charlotte students. (Fall)

MSCI 2101L. Innovative Team Leadership Lab. (1) Application of Intermediate Leadership Skills through multiple venues including Leading Drill and Ceremony, Advanced Land Navigation, Building Terrain Models, Advanced Rifle Marksmanship, Advanced Medical Tasks, Movement Formations, Movement Techniques, Special Teams, Writing Operations Orders, Situation Reporting, Call for Fire, and Introduction to Battle Drills. (Fall)

MSCI 2102. Foundations of Tactical Leadership. (1) Corequisite: MSCI 2102L. Examines the challenges of leading tactical teams in the complex contemporary
operating environment (COE). The course highlights dimensions of terrain analysis, patrolling, route planning, and operations orders. Further study of the theoretical basis of the Army leadership framework explores the dynamics of adaptive leadership in the context of military operations. Participation in leadership lab is required. There is no military obligation to take this course; open to all UNC Charlotte students. (Spring)

MSCI 2102L. Foundations of Tactical Leadership Lab. (2) Application of Intermediate Leadership Skills through multiple venues including Leading Drill and Ceremony, Advanced Land Navigation, Building Terrain Models, Advanced Rifle Marksmanship, Advanced Medical Tasks, Movement Formations, Movement Techniques, Special Teams, Writing Operations Orders, Situation Reporting, Call for Fire, and Introduction to Battle Drills. (Spring)

MSCI 3101. Adaptive Team Leadership. (3) Prerequisite: Basic Course Credit. Corequisite: MSCI 3101L. Challenges cadets to study, practice, and evaluate adaptive leadership skills as they are presented with challenging scenarios related to squad level tactical operations. Cadets receive systematic and specific feedback on their leadership attributes and actions. Based on such feedback, as well as their own self-evaluations, cadets continue to develop their leadership and critical thinking abilities. Includes instruction in squad operations, problem solving, and combat orders. Participation in leadership lab is required. (Fall)

MSCI 3101L. Adaptive Team Leadership Lab. (1) Challenging scenarios related to small-unit tactical operations are used to develop self-awareness and critical thinking skills. The cadet will receive systematic and specific feedback on leadership abilities. Cadets at this level serve as the NCO Corps of the ROTC Battalion; they plan, rehearse, and lead basic course cadets through the program of instruction. (Fall)

MSCI 3102. Applied Team Leadership. (3) Prerequisite: MSCI 3101. Corequisite: MSCI 3102L. Uses increasingly intense situational leadership challenges to build cadet awareness and skills in leading tactical operations up to platoon level. Cadets review aspects of combat, stability, and support operations. They also conduct military briefings and develop proficiency in garrison operation orders. Includes instruction in platoon operations, stability and support operations, and garrison orders. Designed to prepare third-year cadets to perform effectively at the Leadership Development and Assessment Course (LDAC). Participation in leadership lab is required. (Spring)

MSCI 3102L. Applied Team Leadership Lab. (1) Specific instruction is given in individual leader development, planning and execution of small-unit operations, individual and team development, and the Army as a career choice. Prepares cadets for the mandatory 30-day Leader Development and Assessment Course at Fort Lewis, Washington. (Spring)

MSCI 4101. Developing Adaptive Leaders. (3) Prerequisite: MSCI 3101 and 3102. Corequisite: MSCI 4101L. Develops cadet proficiency in planning, executing, and assessing complex operations; functioning as a member of a staff; and providing performance feedback to subordinates. Cadets assess risk, make ethical decisions, and lead fellow ROTC cadets. Lessons on military justice and personnel processes prepare cadets to make the transition to Army officers. Includes instruction in risk management, training management, the code of conduct, rules of engagement, counseling, and evaluations. Participation in leadership lab is required. Mandatory for all senior ROTC cadets. (Fall)

MSCI 4101L. Developing Adaptive Leaders Lab. (1) Cadets will lead cadets at lower levels. Leadership experiences are designed to prepare them for their first military unit of assignment. Identify responsibilities of key staff members, coordinate staff roles amongst twelve separate universities and colleges that make up the ROTC battalion, and use battalion field/garrison situations to teach, train, and develop subordinates. (Fall)

MSCI 4102. Leadership in a Complex World. (3) Prerequisite: MSCI 4101. Corequisite: MSCI 4102L. Explores the dynamics of leading in the complex situations of current military operations in the contemporary operating environment (COE). Cadets examine differences in customs and courtesies, military law, principles of war, and rules of engagement in the face of international terrorism. They also explore aspects of interacting with non-government organizations, civilians on the battlefield, and host nation support. Includes instruction in Army organization and modularity, the platoon command team, a battle analysis, and a staff ride. Participation in leadership lab is required. Mandatory for all senior ROTC cadets. (Spring)

MSCI 4102L. Leadership in a Complex World Lab. (1) Designed to prepare for first military unit of assignment. Cadets will identify responsibilities of key staff members, coordinate staff roles amongst twelve separate universities and colleges that make up the ROTC battalion, and use battalion field/garrison situations to teach, train, and develop subordinates. The leadership lab uses case studies, scenarios, and tactical vignettes to prepare cadets to face the complex ethical and practical demands of leading as a commissioned officer in the United States Army. (Fall)

MUSIC EDUCATION (MUED)

MUED 2100. Introduction to Music Education. (2) Introduction to the organization and various types/levels of music education. Overview of the ethical, legal, and instructional issues related to diversity in the classroom. A minimum of ten hours of community service is required. (Spring)
MUED 2141. Music Development and Learning. (2) Prerequisite: MUED 2200. This course teaches music educators how to deliver developmentally appropriate music instruction in grades K-12. Students will explore and manipulate teaching strategies through various researched perspectives of: (1) developmental learning theory; (2) music acquisition/learning theories; and (3) teaching music to students with special needs. A field component of ten hours minimum is required. Three contact hours. (Spring)

MUED 2200. Foundations of Music Education. (2) Prerequisite: MUED 2100. Introduction to the social, historical, and philosophical foundations of music education, major issues in American education, music education research, and instruction planning in music education. A minimum of ten hours of community service is required. (Fall)

MUED 4190. Choral Methods. (2) Prerequisite: MUSC 2400, MUSC 3135, and MUSC 4137. Corequisite: MUED 4190L. Rehearsal techniques, repertoire, and administration of school choral programs. Three contact hours. (Fall)

MUED 4190L. Choral Methods Lab. (1) Prerequisite: MUSC 2400. Corequisite: MUED 4190. May be repeated for credit. Application of rehearsal methods with collegiate and public school choral ensembles. 10 hours of additional outside fieldwork required. Three contact hours. (Fall)

MUED 4192. General Music Methods. (2) Prerequisite: MUSC 2400. Corequisite: MUED 4192L. The course includes general music methods and materials for elementary grades through high school. The primary focus will be on elementary school general music but will extend into teaching general music, and non-performance based music courses in grades 6 through 12. Students will experience current school music theories and approaches to general music teaching. Materials will also be explored and discussed. (Spring)

MUED 4192L. General Methods Lab. (1) Prerequisite: MUSC 2400. Corequisite: MUED 4192. Clinical application of general music teaching concepts in the public school setting. A minimum of 10 hours in the field are required. (Spring)

MUED 4194. Instrumental Methods. (2) Prerequisite: MUSC 2400 and MUSC 3136. Corequisite: MUED 4194L. Rehearsal techniques, repertoire, teaching strategies, methods, and materials of teaching and administering an instrumental music program in the public school. Three contact hours. (Fall)

MUED 4194L. Instrumental Methods Lab. (1) Prerequisite: MUSC 2400. Corequisite: MUED 4194. Clinical application of rehearsal methods with collegiate and public school instrumental ensembles. A minimum of 10 hours in the field are required. (Fall)

MUED 4270. Teaching Discipline: Assessment & Behavior in the Music Classroom. (2) Prerequisite: MUSC 2400. Students will develop specific quantitative and qualitative methods that address unique discipline, teaching, and assessment concerns inherent in a music classroom with typical and diverse populations of students. A minimum of 10 hours of clinical experience observing and teaching students with special needs is required. Three contact hours. (Fall)

MUED 4467. Student Teaching/Seminar: K-12 Music. (12) Prerequisite: approved application for student teaching. A planned sequence of experiences in the student’s area of specialization conducted in an approved school setting under the supervision and coordination of a University supervisor and a cooperating teacher in which the student demonstrates the competencies identified for his/her specific teaching field in an appropriate grade level setting. (Fall, Spring)

MUSIC PERFORMANCE (MUPF)

MUPF 1040-1059. Applied Music for Minors. Courses consist of private instruction, a half-hour lesson per week or a one-hour lesson every two weeks, leading to formal jury at the end of the semester. May be repeated for credit. Students must enroll in an approved principal ensemble concurrently (see the Department of Music Student Handbook for details.)

MUPF 1040. Applied Music for Minors: Euphonium. (1) Prerequisite: Acceptance as a music minor or permission of instructor. Corequisite: an approved principal ensemble. May be repeated for credit. (Fall, Spring)

MUPF 1041. Applied Music for Minors: French Horn. (1) Prerequisite: Acceptance as a music minor or permission of instructor. Corequisite: an approved principal ensemble. May be repeated for credit. (Fall, Spring)

MUPF 1042. Applied Music for Minors: Trombone. (1) Prerequisite: Acceptance as a music minor or permission of instructor. Corequisite: an approved principal ensemble. May be repeated for credit. (Fall, Spring)

MUPF 1043. Applied Music for Minors: Tuba. (1) Prerequisite: Acceptance as a music minor or permission of instructor. Corequisite: an approved principal ensemble. May be repeated for credit. (Fall, Spring)

MUPF 1044. Applied Music for Minors: Guitar. (1) Prerequisite: Acceptance of a music minor or permission of instructor. Corequisite: an approved
principal ensemble. May be repeated for credit. (Fall, Spring)

**MUPF 1046. Applied Music for Minors: Harp. (1)**
Prerequisite: Acceptance as a music minor or permission of instructor. Corequisite: an approved principal ensemble. May be repeated for credit. (Fall, Spring)

**MUPF 1047. Applied Music for Minors: Organ. (1)**
Prerequisite: Acceptance as a music minor or permission of instructor. Corequisite: an approved principal ensemble. May be repeated for credit. (Fall, Spring)

**MUPF 1048. Applied Music for Minors: Piano. (1)**
Prerequisite: Acceptance as a music minor or permission of instructor. Corequisite: an approved principal ensemble. May be repeated for credit. (Fall, Spring)

**MUPF 1049. Applied Music for Minors: Violin. (1)**
Prerequisite: Acceptance as a music minor or permission of instructor. Corequisite: an approved principal ensemble. May be repeated for credit. (Fall, Spring)

**MUPF 1050. Applied Music for Minors: Viola. (1)**
Prerequisite: Acceptance as a music minor or permission of instructor. Corequisite: an approved principal ensemble. May be repeated for credit. (Fall, Spring)

**MUPF 1051. Applied Music for Minors: Cello. (1)**
Prerequisite: Acceptance as a music minor or permission of instructor. Corequisite: an approved principal ensemble. May be repeated for credit. (Fall, Spring)

**MUPF 1052. Applied Music for Minors: Bass. (1)**
Prerequisite: Acceptance as a music minor or permission of instructor. Corequisite: an approved principal ensemble. May be repeated for credit. (Fall, Spring)

**MUPF 1053. Applied Music for Minors: Voice. (1)**
Prerequisite: Acceptance as a music minor or permission of instructor. Corequisite: an approved principal ensemble. May be repeated for credit. (Fall, Spring)

**MUPF 1054. Applied Music for Minors: Flute. (1)**
Prerequisite: Acceptance as a music minor or permission of instructor. Corequisite: an approved principal ensemble. May be repeated for credit. (Fall, Spring)

**MUPF 1055. Applied Music for Minors: Clarinet. (1)**
Prerequisite: Acceptance as a music minor or permission of instructor. Corequisite: an approved principal ensemble. May be repeated for credit. (Fall, Spring)

**MUPF 1056. Applied Music for Minors: Saxophone. (1)**
Prerequisite: Acceptance as a music minor or permission of instructor. Corequisite: an approved principal ensemble. May be repeated for credit. (Fall, Spring)

**MUPF 1057. Applied Music for Minors: Oboe. (1)**
Prerequisite: Acceptance as a music minor or permission of instructor. Corequisite: an approved principal ensemble. May be repeated for credit. (Fall, Spring)

**MUPF 1058. Applied Music for Minors: Bassoon. (1)**
Prerequisite: Acceptance as a music minor or permission of instructor. Corequisite: an approved principal ensemble. May be repeated for credit. (Fall, Spring)

**MUPF 1059. Applied Music for Minors: Percussion. (1)**
Prerequisite: Acceptance as a music minor or permission of instructor. Corequisites: an approved principal ensemble. May be repeated for credit. (Fall, Spring)

**MUPF 1110. Symphony Orchestra. (1)**
Prerequisite: audition. An 80-member, full symphony orchestra open to advanced string, wind, and percussion players from any major. Performs standard symphonic works from the Baroque period through the present. May be repeated for credit. Three contact hours. (Fall, Spring)

**MUPF 1111. Jazz Ensemble. (1)**
Prerequisite: audition. Corequisite: MUPF 1111L. An ensemble specializing in performance and study of music composed for standard “big band” instrumentation. Performs music styles from the Swing era to present day. May be repeated for credit. Three contact hours. (Fall, Spring)

**MUPF 1111L. Jazz Ensemble Sectional Rehearsals. (0)**
Corequisite: MUPF 1111. Sectional rehearsals for MUPF 1111. May be repeated for credit. (Fall, Spring)

**MUPF 1112. Wind Ensemble. (1)**
Prerequisite: Audition. Corequisite: MUPF 1112L. A performing ensemble open to advanced wind and percussion players from any major. Performs traditional and contemporary band literature in concerts a minimum of twice per semester. Occasional concert tours and performances for important regional music events. May be repeated for credit. Three contact hours. (Fall, Spring)

**MUPF 1112L. Wind Ensemble Sectional Rehearsals. (0)**
Corequisite: MUPF 1112. Sectional rehearsals for MUPF 1112. May be repeated. (Fall, Spring)

**MUPF 1113. Symphonic Band. (1)**
A performing ensemble open to students from any major with experience playing wind and percussion instruments. No formal audition required, only a simple hearing to determine chair placement. Performs traditional and contemporary band literature in one concert each semester. May be repeated for credit. Three contact hours. (Fall, Spring)

**MUPF 1114. Basketball Band. (1)**
Prerequisite: permission of instructor. A performing ensemble for University athletic contests and other campus events.
MUPF 1115. Guitar Ensemble. (1) Prerequisite: permission of instructor. A performing ensemble. May be repeated for credit. Three contact hours. (Fall, Spring)

MUPF 1117. Instrumental Lab Ensemble. (0) Students will meet together to create a beginning band or orchestra for the purposes of rehearsing on a secondary instrument in an ensemble format. This format will also allow student conductors in instrumental conducting and methods the opportunity to rehearse and conduct a novice ensemble. Graded on a Pass/No Credit basis. May be repeated. (Fall, Spring)

MUPF 1119. Special Instrumental Ensemble. (1) Prerequisite: Acceptance as a music major and permission of instructor. An alternative to traditional ensembles listed above for students with specialized performance interests. May be repeated for credit. Three contact hours. (Fall, Spring)

MUPF 1120. University Chorale. (1) Prerequisite: audition. Corequisite: MUPF 1120L. A mixed chorus that performs music of many styles from the Baroque period to the present. The enrollment ranges from 46 to 58 voices. Open to all UNC Charlotte students with extensive choral experience. May be repeated for credit. Three contact hours. (Fall, Spring)

MUPF 1120-001. University Chorale Soprano Section (enrollment cap 14)  
MUPF 1120-002. University Chorale Alto Section (enrollment cap 12)  
MUPF 1120-003. University Chorale Tenor Section (enrollment cap 8)  
MUPF 1120-004. University Chorale Bass Section (enrollment cap 12)

MUPF 1120L. University Chorale Sectional rehearsals. (0) Corequisite: MUPF 1120. Sectional rehearsals for MUPF 1120. May be repeated for credit. (Fall, Spring)

MUPF 1121. Chamber Singers. (1) Prerequisite: audition. A highly-select mixed ensemble that ranges in size from 15 to 26 voices. This ensemble specializes in virtuosic literature from the Renaissance, Early Baroque, and Contemporary periods. Open to all UNC Charlotte students. A full-year commitment is expected. May be repeated for credit. Three contact hours. (Fall, Spring)

MUPF 1122. Men’s Chorus (Mallard Creek Chorale). (1) The Mallard Creek Chorale is a popular performing ensemble for men in the glee tradition. It draws upon majors from across campus and performs several times each semester – including occasionally performing off campus and at athletic events. The ensemble performs folk, spirituals, Broadway, patriotic, barbershop, du-wop, and other musical styles traditional for men’s choruses. This ensemble is open to all male UNC Charlotte students with an interest in singing. Special emphasis is placed on building vocal technique and sight singing ability. May be repeated for credit. Three contact hours. (Fall, Spring)

MUPF 1123. Women’s Glee (Charlotteans). (1) The Charlotteans is open to all female UNC Charlotte students with an interest in singing. This ensemble performs a vast array of music from Renaissance through contemporary composers. Emphasis is placed on building vocal technique and sight singing ability. May be repeated for credit. Three contact hours. (Fall, Spring)

MUPF 1124. Opera Workshop. (1) Prerequisite: audition. Performance of scenes, acts, and entire operas. May be repeated for credit. Three contact hours. (Fall, Spring)

MUPF 1128. Special Vocal Ensemble. (1) Prerequisite: acceptance as a music major and permission of instructor. An alternative to the traditional ensembles listed above for students with specialized experience. Enrollment restricted to music majors. May be repeated for credit. Three contact hours. (Fall, Spring)

MUPF 1132. Wind Quintet. (1) Prerequisite: Permission of instructor. A performing ensemble that focuses on the wind quintet repertoire. May be repeated for credit. (Fall, Spring)

MUPF 1133. Flute Quartet. (1) Prerequisite: Permission of instructor. A performing ensemble that focuses on the flute quartet repertoire. May be repeated for credit. (Fall, Spring)

MUPF 1134. Flute Choir. (1) Prerequisite: Permission of instructor. A performing ensemble that focuses on the flute choir repertoire. May be repeated for credit. (Fall, Spring)

MUPF 1136. Clarinet Choir. (1) Prerequisite: Permission of instructor. A performing ensemble that focuses on the clarinet choir repertoire. May be repeated for credit. (Fall, Spring)

MUPF 1137. Saxophone Quartet. (1) Prerequisite: Permission of instructor. A performing ensemble that focuses on the saxophone quartet repertoire. May be repeated for credit. (Fall, Spring)

MUPF 1139. Woodwind Chamber Music. (1) Prerequisite: Permission of instructor. A performing ensemble that focuses on the woodwind chamber music repertoire. May be repeated for credit. (Fall, Spring)

MUPF 1142. Brass Quintet. (1) Prerequisite: Permission of instructor. A performing ensemble that focuses on the brass quintet repertoire. May be repeated for credit. (Fall, Spring)

MUPF 1146. Tuba/Euphonium Ensemble. (1) Prerequisite: Permission of instructor. A performing ensemble that focuses on the tuba/euphonium repertoire. May be repeated for credit. (Fall, Spring)
MUPF 1149. Brass Chamber Music. (1) Prerequisite: Permission of instructor. A performing ensemble that focuses on the brass chamber music repertoire. May be repeated for credit. (Fall, Spring)

MUPF 1150. Honors Percussion Ensemble. (1) Prerequisite: Audition. An advanced performing ensemble that focuses on the percussion ensemble repertoire. May be repeated for credit. (Fall, Spring)

MUPF 1151. Percussion Ensemble. (1) Prerequisite: Permission of instructor. A performing ensemble that focuses on the percussion ensemble repertoire. May be repeated for credit. (Fall, Spring)

MUPF 1152. Mallet Keyboard Ensemble. (1) Prerequisite: Permission of instructor. A performing ensemble that focuses on the mallet keyboard repertoire. May be repeated for credit. (Fall, Spring)

MUPF 1155. Piano Ensemble. (1) Prerequisite: Permission of instructor. A performing ensemble that focuses on the piano ensemble repertoire. May be repeated for credit. (Fall, Spring)

MUPF 1160. Chamber Orchestra. (1) Prerequisite: audition. An elite 14-member ensemble that plays advanced string orchestra works and collaborates with the choral and opera programs, open to advanced string students from any major. May be repeated for credit. (Fall, Spring)

MUPF 1161. Bonnie Cone String Quartet. (1) Prerequisite: Audition. An advanced performing ensemble that focuses on the string quartet repertoire. May be repeated for credit. (Fall, Spring)

MUPF 1168. Philharmonia. (1) A performing ensemble open to string players from any major. Performs string orchestra repertoire from the Baroque period through the present. Emphasis is placed on developing techniques and sight-reading ability. May be repeated for credit. (Fall, Spring)

MUPF 1169. String Chamber Music. (1) Prerequisite: Permission of instructor. A performing ensemble that focuses on the string chamber music repertoire. May be repeated for credit. (Fall, Spring)

MUPF 1170. Jazz Combo. (1) Prerequisite: Permission of instructor. A small performing ensemble that focuses on jazz repertoire and improvisation. May be repeated for credit. (Fall, Spring)

MUPF 1175. Vocal Jazz Ensemble. (1) Prerequisite: Permission of instructor. A small performing ensemble that focuses on vocal jazz repertoire and improvisation. May be repeated for credit. (Fall, Spring)

MUPF 1240-1259. Applied Music. Courses consist of private instruction, a one-hour lesson per week, leading to a formal jury at the end of the semester. May be repeated for credit. Students must enroll in MUSC 1300 and an approved principal ensemble concurrently (see the Department of Music Student Handbook for details).

MUPF 1240. Applied Music: Euphonium. (2) Prerequisite: Acceptance as a music major or permission of instructor. Corequisites: MUSC 1300 and an approved principal ensemble. May be repeated for credit. (Fall, Spring)

MUPF 1241. Applied Music: Trumpet. (2) Prerequisite: Acceptance as a music major or permission of instructor. Corequisites: MUSC 1300 and an approved principal ensemble. May be repeated for credit. (Fall, Spring)

MUPF 1242. Applied Music: French Horn. (2) Prerequisite: Acceptance as a music major or permission of instructor. Corequisites: MUSC 1300 and an approved principal ensemble. May be repeated for credit. (Fall, Spring)

MUPF 1243. Applied Music: Trombone. (2) Prerequisite: Acceptance as a music major or permission of instructor. Corequisites: MUSC 1300 and an approved principal ensemble. May be repeated for credit. (Fall, Spring)

MUPF 1244. Applied Music: Tuba. (2) Prerequisite: Acceptance as a music major or permission of instructor. Corequisites: MUSC 1300 and an approved principal ensemble. May be repeated for credit. (Fall, Spring)

MUPF 1245. Applied Music: Guitar. (2) Prerequisite: Acceptance of a music major or permission of instructor. Corequisites: MUSC 1300 and an approved principal ensemble. May be repeated for credit. (Fall, Spring)

MUPF 1245L. Guitar Masterclass. (0) Corequisite: MUPF 1245. Weekly masterclasses for MUPF 1245. May be repeated for credit. (Fall, Spring)

MUPF 1246. Applied Music: Harp. (2) Prerequisite: Acceptance as a music major or permission of instructor. Corequisites: MUSC 1300 and an approved principal ensemble. May be repeated for credit. (Fall, Spring)

MUPF 1247. Applied Music: Organ. (2) Prerequisite: Acceptance as a music major or permission of instructor. Corequisites: MUSC 1300 and an approved principal ensemble. May be repeated for credit. (Fall, Spring)

MUPF 1248. Applied Music: Piano. (2) Prerequisite: Acceptance as a music major or permission of instructor. Corequisites: MUSC 1300 and an approved principal ensemble. May be repeated for credit. (Fall, Spring)

MUPF 1249. Applied Music: Violin. (2) Prerequisite: Acceptance as a music major or permission of instructor. Corequisites: MUPF 1249L, MUSC 1300, and an approved principal ensemble. May be repeated for credit. (Fall, Spring)
MUPF 1249L. Violin Masterclass. (0) Corequisite: MUPF 1249. Weekly masterclasses for MUPF 1249. May be repeated for credit. (Fall, Spring)

MUPF 1250. Applied Music: Viola. (2) Prerequisite: Acceptance as a music major or permission of instructor. Corequisites: MUSC 1300 and an approved principal ensemble. May be repeated for credit. (Fall, Spring)

MUPF 1251. Applied Music: Cello. (2) Prerequisite: Acceptance as a music major or permission of instructor. Corequisites: MUPF 1251L, MUSC 1300, and an approved principal ensemble. May be repeated for credit. (Fall, Spring)

MUPF 1251L. Cello Masterclass. (0) Corequisite: MUPF 1251. Weekly masterclasses for MUPF 1251. May be repeated for credit. (Fall, Spring)

MUPF 1252. Applied Music: Bass. (2) Prerequisite: Acceptance as a music major or permission of instructor. Corequisites: MUSC 1300 and an approved principal ensemble. May be repeated for credit. (Fall, Spring)

MUPF 1253. Applied Music: Voice. (2) Prerequisite: Acceptance of a music major or permission of instructor. Corequisites: MUSC 1300 and an approved principal ensemble. Additionally, students registered in MUPF 1253.A01 must register for MUPF 1253L.A01, students registered in MUPF 1253.A03 must register for MUPF 1253L.A03, and students registered in MUPF 1253.A02 must register for MUPF 1253L.A02. May be repeated for credit. (Fall, Spring)

MUPF 1253L. Voice Masterclass. (0) Corequisite: MUPF 1253. Weekly masterclasses for MUPF 1253. May be repeated for credit. (Fall, Spring)

MUPF 1254. Applied Music: Flute. (2) Prerequisite: Acceptance as a music major or permission of instructor. Corequisites: MUSC 1300 and an approved principal ensemble. May be repeated for credit. (Fall, Spring)

MUPF 1255. Applied Music: Clarinet. (2) Prerequisite: Acceptance as a music major or permission of instructor. Corequisites: MUSC 1300 and an approved principal ensemble. May be repeated for credit. (Fall, Spring)

MUPF 1256. Applied Music: Saxophone. (2) Prerequisite: Acceptance as a music major or permission of instructor. Corequisites: MUPF 1256L, MUSC 1300, and an approved principal ensemble. May be repeated for credit. (Fall, Spring)

MUPF 1256L. Saxophone Masterclass. (0) Corequisite: MUPF 1256. Weekly masterclasses for MUPF 1256. (Fall, Spring)

MUPF 1257. Applied Music: Oboe. (2) Prerequisite: Acceptance as a music major or permission of instructor. Corequisites: MUSC 1300 and an approved principal ensemble. May be repeated for credit. (Fall, Spring)

MUPF 1258. Applied Music: Bassoon. (2) Prerequisite: Acceptance as a music major or permission of instructor. Corequisites: MUSC 1300 and an approved principal ensemble. May be repeated for credit. (Fall, Spring)

MUPF 1259. Applied Music: Percussion. (2) Prerequisite: Acceptance as a music major or permission of instructor. Corequisites: MUSC 1300 and an approved principal ensemble. May be repeated for credit. (Fall, Spring)

MUPF 2241-2259. Applied Music: Jazz. Courses consist of private instruction in jazz, a half-hour lesson per week or an hour lesson every two weeks, leading to a formal jury at the end of the semester. May be repeated for credit. Students must enroll in an approved principal ensemble (see the Department of Music Student Handbook for details) concurrently.

MUPF 2241. Applied Music: Jazz Trumpet. (1) Prerequisite: Acceptance into the Undergraduate Certificate in Jazz program or permission of instructor. Corequisite: An approved principal ensemble. May be repeated for credit. (Fall, Spring)

MUPF 2243. Applied Music: Jazz Trombone. (1) Prerequisite: Acceptance into the Undergraduate Certificate in Jazz program or permission of instructor. Corequisite: An approved principal ensemble. May be repeated for credit. (Fall, Spring)

MUPF 2245. Applied Music: Jazz Guitar. (1) Prerequisite: Acceptance into the Undergraduate Certificate in Jazz program or permission of instructor. Corequisite: An approved principal ensemble. May be repeated for credit. (Fall, Spring)

MUPF 2248. Applied Music: Jazz Piano. (1) Prerequisite: Acceptance into the Undergraduate Certificate in Jazz program or permission of instructor. Corequisite: An approved principal ensemble. May be repeated for credit. (Fall, Spring)

MUPF 2252. Applied Music: Jazz Bass. (1) Prerequisite: Acceptance into the Undergraduate Certificate in Jazz program or permission of instructor. Corequisite: An approved principal ensemble. May be repeated for credit. (Fall, Spring)
the semester. May be repeated for credit. Students must enroll in MUSC 3300 and an approved principal ensemble concurrently, (see the Department of Music Student Handbook for details).

MUPF 3240. Advanced Applied Music: Euphonium. (2) Prerequisite: MUSC 2400 and permission of instructor. Corequisites: MUSC 3300 and an approved principal ensemble. May be repeated for credit. (Fall, Spring)

MUPF 3241. Advanced Applied Music: Trumpet. (2) Prerequisite: MUSC 2400 and permission of instructor. Corequisites: MUSC 3300 and an approved principal ensemble. May be repeated for credit. (Fall, Spring)

MUPF 3242. Advanced Applied Music: French Horn. (2) Prerequisite: MUSC 2400 and permission of instructor. Corequisites: MUSC 3300 and an approved principal ensemble. May be repeated for credit. (Fall, Spring)

MUPF 3243. Advanced Applied Music: Trombone. (2) Prerequisite: MUSC 2400 and permission of instructor. Corequisites: MUSC 3300 and an approved principal ensemble. May be repeated for credit. (Fall, Spring)

MUPF 3244. Advanced Applied Music: Tuba. (2) Prerequisite: MUSC 2400 and permission of instructor. Corequisites: MUSC 3300 and an approved principal ensemble. May be repeated for credit. (Fall, Spring)

MUPF 3245. Advanced Applied Music: Guitar. (2) Prerequisite: MUSC 2400 and permission of instructor. Corequisites: MUSC 3300 and an approved principal ensemble. May be repeated for credit. (Fall, Spring)

MUPF 3245L. Advanced Guitar Masterclass. (0) Corequisite: MUPF 3245. Weekly masterclasses for MUPF 3245. May be repeated for credit. (Fall, Spring)

MUPF 3246. Advanced Applied Music: Harp. (2) Prerequisite: MUSC 2400 and permission of instructor. Corequisites: MUSC 3300 and an approved principal ensemble. May be repeated for credit. (Fall, Spring)

MUPF 3247. Advanced Applied Music: Organ. (2) Prerequisite: MUSC 2400 and permission of instructor. Corequisites: MUSC 3300 and an approved principal ensemble. May be repeated for credit. (Fall, Spring)

MUPF 3248. Advanced Applied Music: Piano. (2) Prerequisite: MUSC 2400 and permission of instructor. Corequisite: An approved principal ensemble. May be repeated for credit. (Fall, Spring)

MUPF 3249. Advanced Applied Music: Violin. (2) Prerequisite: MUSC 2400 and permission of instructor. Corequisites: MUPF 3249L, MUSC 3300, and an approved principal ensemble. May be repeated for credit. (Fall, Spring)

MUPF 3249L. Advanced Violin Masterclass. (0) Corequisite: MUPF 3249. Weekly masterclasses for MUPF 3249. May be repeated for credit. (Fall, Spring)

MUPF 3250. Advanced Applied Music: Viola. (2) Prerequisite: MUSC 2400 and permission of instructor. Corequisites: MUSC 3300 and an approved principal ensemble. May be repeated for credit. (Fall, Spring)

MUPF 3251. Advanced Applied Music: Cello. (2) Prerequisite: MUSC 2400 and permission of instructor. Corequisites: MUPF 3251L, MUSC 3300, and an approved principal ensemble. May be repeated for credit. (Fall, Spring)

MUPF 3251L. Advanced Cello Masterclass. (0) Corequisite: MUPF 3251. Weekly masterclasses for MUPF 3251. May be repeated for credit. (Fall, Spring)

MUPF 3252. Advanced Applied Music: Bass. (2) Prerequisite: MUSC 2400 and permission of instructor. Corequisites: MUSC 3300 and an approved principal ensemble. May be repeated for credit. (Fall, Spring)

MUPF 3253. Advanced Applied Music: Voice. (2) Prerequisite: MUSC 2400 and permission of instructor. Corequisites: MUSC 3300 and an approved principal ensemble. Additionally, students registered in MUPF 3253.A01 must register for MUPF 3253L.A01, students registered in MUPF 3253.A02 must register for MUPF 3253L.A02, and students registered in MUPF 3253.A03 must register for MUPF 3253L.A03. May be repeated for credit. (Fall, Spring)

MUPF 3253L. Advanced Voice Masterclass. (0) Corequisite: MUPF 3253. Weekly masterclasses for MUPF 3253. May be repeated for credit. (Fall, Spring)

MUPF 3254. Advanced Applied Music: Flute. (2) Prerequisite: MUSC 2400 and permission of instructor. Corequisites: MUSC 3300 and an approved principal ensemble. May be repeated for credit. (Fall, Spring)

MUPF 3255. Advanced Applied Music: Clarinet. (2) Prerequisite: MUSC 2400 and permission of instructor. Corequisites: MUSC 3300 and an approved principal ensemble. May be repeated for credit. (Fall, Spring)

MUPF 3256. Advanced Applied Music: Saxophone. (2) Prerequisite: MUSC 2400 and permission of instructor. Corequisites: MUPF 3256L, MUSC 3300, and an approved principal ensemble. May be repeated for credit. (Fall, Spring)

MUPF 3256L. Advanced Saxophone Masterclass. (0) Corequisite: MUPF 3256. Weekly masterclasses for
MUPF 3256. May be repeated for credit.  (Fall, Spring)

MUPF 3257. Advanced Applied Music: Oboe. (2)  
Prerequisite: MUSC 2400 and permission of instructor. Corequisites: MUSC 3300 and an approved principal ensemble. May be repeated for credit. (Fall, Spring)

MUPF 3258. Advanced Applied Music: Bassoon. (2)  
Prerequisite: MUSC 2400 and permission of instructor. Corequisites: MUSC 3300 and an approved principal ensemble. May be repeated for credit. (Fall, Spring)

MUPF 3259. Advanced Applied Music: Percussion. (2)  
Prerequisite: MUSC 2400 and permission of instructor. Corequisites: MUSC 3300 and an approved principal ensemble. May be repeated for credit. (Fall, Spring)

MUPF 3400. Junior Recital. (0)  
A Junior-level recital of solo and ensemble repertoire performed before a jury of faculty members and the general public. See the Department of Music Student Handbook for details.

MUPF 3440-3466. Junior Recital Preparation. (1-2 credit hours)  
Courses consist of private instruction, a one-hour lesson per week, leading to a formal junior recital of 15-20 minutes in length per credit hour. Students must sign up for the required lab (MUSC 3300) and an approved principal ensemble concurrently (see the Department of Music Student Handbook for details). All students must enroll in 2 credits of classical preparation (MUPF 344x or MUPF 345x); students in the Jazz Certificate program may register for 1 additional credit of jazz preparation (MUPF 346x).

MUPF 3440. Junior Recital Preparation: Euphonium. (2)  
Prerequisites: Grade of C or above in at least one semester of 3000-level Applied Music (MUPF 32xx) and permission of the department. Corequisites: MUSC 3300 and an approved principal ensemble. (Fall, Spring)

MUPF 3441. Junior Recital Preparation: Trumpet. (2)  
Prerequisites: Grade of C or above in at least one semester of 3000-level Applied Music (MUPF 32xx) and permission of the department. Corequisites: MUSC 3300 and an approved principal ensemble. (Fall, Spring)

MUPF 3442. Junior Recital Preparation: French Horn. (2)  
Prerequisites: Grade of C or above in at least one semester of 3000-level Applied Music (MUPF 32xx) and permission of the department. Corequisites: MUSC 3300 and an approved principal ensemble. (Fall, Spring)

MUPF 3443. Junior Recital Preparation: Trombone. (2)  
Prerequisites: Grade of C or above in at least one semester of 3000-level Applied Music (MUPF 32xx) and permission of the department. Corequisites: MUSC 3300 and an approved principal ensemble. (Fall, Spring)

MUPF 3444. Junior Recital Preparation: Tuba. (2)  
Prerequisites: Grade of C or above in at least one semester of 3000-level Applied Music (MUPF 32xx) and permission of the department. Corequisites: MUSC 3300 and an approved principal ensemble. (Fall, Spring)

MUPF 3445. Junior Recital Preparation: Guitar. (2)  
Prerequisites: Grade of C or above in at least one semester of 3000-level Applied Music (MUPF 32xx) and permission of the department. Corequisites: MUSC 3300 and an approved principal ensemble. (Fall, Spring)

MUPF 3446. Junior Recital Preparation: Harp. (2)  
Prerequisites: Grade of C or above in at least one semester of 3000-level Applied Music (MUPF 32xx) and permission of the department. Corequisites: MUSC 3300 and an approved principal ensemble. (Fall, Spring)

MUPF 3447. Junior Recital Preparation: Organ. (2)  
Prerequisites: Grade of C or above in at least one semester of 3000-level Applied Music (MUPF 32xx) and permission of the department. Corequisites: MUSC 3300 and an approved principal ensemble. (Fall, Spring)

MUPF 3448. Junior Recital Preparation: Piano. (2)  
Prerequisites: Grade of C or above in at least one semester of 3000-level Applied Music (MUPF 32xx) and permission of the department. Corequisites: MUSC 3300 and an approved principal ensemble. (Fall, Spring)

MUPF 3449. Junior Recital Preparation: Violin. (2)  
Prerequisites: Grade of C or above in at least one semester of 3000-level Applied Music (MUPF 32xx) and permission of the department. Corequisites: MUPF 3249L, MUSC 3300, and an approved principal ensemble. (Fall, Spring)

MUPF 3450. Junior Recital Preparation: Viola. (2)  
Prerequisites: Grade of C or above in at least one semester of 3000-level Applied Music (MUPF 32xx) and permission of the department. Corequisites: MUSC 3300 and an approved principal ensemble. (Fall, Spring)

MUPF 3451. Junior Recital Preparation: Cello. (2)  
Prerequisites: Grade of C or above in at least one semester of 3000-level Applied Music (MUPF 32xx) and permission of the department. Corequisites: MUPF 3251L, MUSC 3300, and an approved principal ensemble. (Fall, Spring)

MUPF 3452. Junior Recital Preparation: Bass. (2)  
Prerequisites: Grade of C or above in at least one semester of 3000-level Applied Music (MUPF 32xx) and permission of the department. Corequisites: MUSC 3300 and an approved principal ensemble. (Fall, Spring)

MUPF 3453. Junior Recital Preparation: Voice. (2)  
Prerequisites: Grade of C or above in at least one semester of 3000-level Applied Music (MUPF 32xx)
and permission of the department. Corequisites: MUSC 3300 and an approved principal ensemble. Additionally, students registered in MUPF 3453.A01 must register for MUPF 3253L.A01, students registered in MUPF 3453.A02 must register for MUPF 3253L.A02, and students registered in MUPF 3453.A03 must register for MUPF 3253L.A03. (Fall, Spring)

MUPF 3454. Junior Recital Preparation: Flute. (2) Prerequisites: Grade of C or above in at least one semester of 3000-level Applied Music (MUPF 32xx) and permission of the department. Corequisites: MUSC 3300 and an approved principal ensemble. (Fall, Spring)

MUPF 3455. Junior Recital Preparation: Clarinet. (2) Prerequisites: Grade of C or above in at least one semester of 3000-level Applied Music (MUPF 32xx) and permission of the department. Corequisites: MUSC 3300 and an approved principal ensemble. (Fall, Spring)

MUPF 3456. Junior Recital Preparation: Saxophone. (2) Prerequisites: Grade of C or above in at least one semester of 3000-level Applied Music (MUPF 32xx) and permission of the department. Corequisites: MUPF 3256L, MUSC 3300, and an approved principal ensemble. (Fall, Spring)

MUPF 3457. Junior Recital Preparation: Oboe. (2) Prerequisites: Grade of C or above in at least one semester of 3000-level Applied Music (MUPF 32xx) and permission of the department. Corequisites: MUSC 3300 and an approved principal ensemble. (Fall, Spring)

MUPF 3458. Junior Recital Preparation: Bassoon. (2) Prerequisites: Grade of C or above in at least one semester of 3000-level Applied Music (MUPF 32xx) and permission of the department. Corequisites: MUSC 3300 and an approved principal ensemble. (Fall, Spring)

MUPF 3459. Junior Recital Preparation: Percussion. (2) Prerequisites: Grade of C or above in at least one semester of 3000-level Applied Music (MUPF 32xx) and permission of the department. Corequisites: MUSC 3300 and an approved principal ensemble. (Fall, Spring)

MUPF 3460. Junior Recital Preparation: Jazz Saxophone. (1) Prerequisites: Grade of C or above in at least one semester of Applied Music: Jazz (MUPF 22xx) and permission of the department. Corequisite: An approved principal ensemble. (Fall, Spring)

MUPF 3461. Junior Recital Preparation: Jazz Trumpet. (1) Prerequisites: Grade of C or above in at least one semester of Applied Music: Jazz (MUPF 22xx) and permission of the department. Corequisite: An approved principal ensemble. (Fall, Spring)

MUPF 3462. Junior Recital Preparation: Jazz Trombone. (1) Prerequisites: Grade of C or above in at least one semester of Applied Music: Jazz (MUPF 22xx) and permission of the department. Corequisite: An approved principal ensemble. (Fall, Spring)

MUPF 3463. Junior Recital Preparation: Jazz Guitar. (1) Prerequisites: Grade of C or above in at least one semester of Applied Music: Jazz (MUPF 22xx) and permission of the department. Corequisite: An approved principal ensemble. (Fall, Spring)

MUPF 3464. Junior Recital Preparation: Jazz Piano. (1) Prerequisites: Grade of C or above in at least one semester of Applied Music: Jazz (MUPF 22xx) and permission of the department. Corequisite: An approved principal ensemble. (Fall, Spring)

MUPF 3465. Junior Recital Preparation: Jazz Bass. (1) Prerequisites: Grade of C or above in at least one semester of Applied Music: Jazz (MUPF 22xx) and permission of the department. Corequisite: An approved principal ensemble. (Fall, Spring)

MUPF 3466. Junior Recital Preparation: Jazz Percussion. (1) Prerequisites: Grade of C or above in at least one semester of Applied Music: Jazz (MUPF 22xx) and permission of the department. Corequisite: An approved principal ensemble. (Fall, Spring)

MUPF 4400. Senior Recital. (0) A Senior-level recital of solo and ensemble repertoire performed before a jury of faculty members and the general public. See the Department of Music Student Handbook for details.

MUPF 4440-4446. Senior Recital Preparation. (1-3 credit hours) Courses consist of private instruction, a one-hour lesson per week, leading to a formal senior recital of 15-20 minutes in length per credit hour. Students must sign up for the required lab (MUSC 3300) and an approved principal ensemble concurrently (see the Department of Music Student Handbook for details). All Music Education majors must enroll in 2 credits of classical preparation (MUPF 44xx or MUPF 445x); all other Music Performance majors in the Jazz Certificate program may register for 2 credits of classical preparation (MUPF 44xx) and 1 credit of jazz preparation (MUPF 446x); Music Performance majors in the Jazz Certificate program may register for 1 additional credit of jazz preparation (MUPF 446x); all other Music Performance majors must register for 3 credits of classical preparation (MUPF 444x or MUPF 445x).

MUPF 4440. Senior Recital Preparation: Euphonium. (2-3) Prerequisites: Grade of C or above in at least two semesters of 3000-level Applied Music (MUPF 32xx) and permission of the department. Corequisites: MUSC 3300 and an approved principal ensemble. (Fall, Spring)

MUPF 4441. Senior Recital Preparation: Trumpet. (2-3) Prerequisites: Grade of C or above in at least two semesters of 3000-level Applied Music (MUPF 32xx) and permission of the department. Corequisites: MUSC 3300 and an approved principal ensemble. (Fall, Spring)
MUPF 4442. Senior Recital Preparation: French Horn. (2-3) Prerequisites: Grade of C or above in at least two semesters of 3000-level Applied Music (MUPF 32xx) and permission of the department. Corequisites: MUSC 3300 and an approved principal ensemble. (Fall, Spring)

MUPF 4443. Senior Recital Preparation: Trombone. (2-3) Prerequisites: Grade of C or above in at least two semesters of 3000-level Applied Music (MUPF 32xx) and permission of the department. Corequisites: 1300 and an approved principal ensemble. (Fall, Spring)

MUPF 4444. Senior Recital Preparation: Tuba. (2-3) Prerequisites: Grade of C or above in at least two semesters of 3000-level Applied Music (MUPF 32xx) and permission of the department. Corequisites: MUSC 3300 and an approved principal ensemble. (Fall, Spring)

MUPF 4445. Senior Recital Preparation: Guitar. (2-3) Prerequisites: Grade of C or above in at least two semesters of 3000-level Applied Music (MUPF 32xx) and permission of the department. Corequisites: MUSC 3300 and an approved principal ensemble. (Fall, Spring)

MUPF 4446. Senior Recital Preparation: Harp. (2-3) Prerequisites: Grade of C or above in at least two semesters of 3000-level Applied Music (MUPF 32xx) and permission of the department. Corequisites: MUSC 3300 and an approved principal ensemble. (Fall, Spring)

MUPF 4447. Senior Recital Preparation: Organ. (2-3) Prerequisites: Grade of C or above in at least two semesters of 3000-level Applied Music (MUPF 32xx) and permission of the department. Corequisites: MUSC 3300 and an approved principal ensemble. (Fall, Spring)

MUPF 4448. Senior Recital Preparation: Piano. (2-3) Prerequisites: Grade of C or above in at least two semesters of 3000-level Applied Music (MUPF 32xx) and permission of the department. Corequisites: MUSC 3300 and an approved principal ensemble. (Fall, Spring)

MUPF 4449. Senior Recital Preparation: Violin. (2-3) Prerequisites: Grade of C or above in at least two semesters of 3000-level Applied Music (MUPF 32xx) and permission of the department. Corequisites: MUPF 3249L, MUSC 3300, and an approved principal ensemble. (Fall, Spring)

MUPF 4450. Senior Recital Preparation: Viola. (2-3) Prerequisites: Grade of C or above in at least two semesters of 3000-level Applied Music (MUPF 32xx) and permission of the department. Corequisites: MUSC 3300 and an approved principal ensemble. (Fall, Spring)

MUPF 4451. Senior Recital Preparation: Cello. (2-3) Prerequisites: Grade of C or above in at least two semesters of 3000-level Applied Music (MUPF 32xx) and permission of the department. Corequisites: MUPF 3251L, MUSC 3300, and an approved principal ensemble. (Fall, Spring)

MUPF 4452. Senior Recital Preparation: Bass. (2-3) Prerequisites: Grade of C or above in at least two semesters of 3000-level Applied Music (MUPF 32xx) and permission of the department. Corequisites: MUSC 3300 and an approved principal ensemble. (Fall, Spring)

MUPF 4453. Senior Recital Preparation: Voice. (2-3) Prerequisites: Grade of C or above in at least two semesters of 3000-level Applied Music (MUPF 32xx) and permission of the department. Corequisites: MUSC 3300 and an approved principal ensemble. Additionally, students registered in MUPF 4453.A01 must register for MUPF 3253L.A01, students registered in MUPF 4453.A02 must register for MUPF 3253L.A02, and students registered in MUPF 4453.A03 must register for MUPF 3253L.A03. (Fall, Spring)

MUPF 4454. Senior Recital Preparation: Flute. (2-3) Prerequisites: Grade of C or above in at least two semesters of 3000-level Applied Music (MUPF 32xx) and permission of the department. Corequisites: MUSC 3300 and an approved principal ensemble. (Fall, Spring)

MUPF 4455. Senior Recital Preparation: Clarinet. (2-3) Prerequisites: Grade of C or above in at least two semesters of 3000-level Applied Music (MUPF 32xx) and permission of the department. Corequisites: MUSC 3300 and an approved principal ensemble. (Fall, Spring)

MUPF 4456. Senior Recital Preparation: Saxophone. (2-3) Prerequisites: Grade of C or above in at least two semesters of 3000-level Applied Music (MUPF 32xx) and permission of the department. Corequisites: MUPF 3256L, MUSC 3300, and an approved principal ensemble. (Fall, Spring)

MUPF 4457. Senior Recital Preparation: Oboe. (2-3) Prerequisites: Grade of C or above in at least two semesters of 3000-level Applied Music (MUPF 32xx) and permission of the department. Corequisites: MUSC 3300 and an approved principal ensemble. (Fall, Spring)

MUPF 4458. Senior Recital Preparation: Bassoon. (2-3) Prerequisites: Grade of C or above in at least two semesters of 3000-level Applied Music (MUPF 32xx) and permission of the department. Corequisites: MUSC 3300 and an approved principal ensemble. (Fall, Spring)

MUPF 4459. Senior Recital Preparation: Percussion. (2-3) Prerequisites: Grade of C or above in at least two semesters of 3000-level Applied Music (MUPF 32xx) and permission of the department. Corequisites: MUSC 3300 and an approved principal ensemble. (Fall, Spring)

MUPF 4460. Senior Recital Preparation: Jazz Saxophone. (1) Prerequisites: Grade of C or above in at least one semester of Applied Music: Jazz (MUPF
MUSC 1100. Introduction to Music Studies. (1) Preerequisite: acceptance as a music major. An introduction to the habits that ultimately lead to success as a music major, including methods for practicing, performing, and wellness, as well as techniques for research, writing, and academic integrity. One contact hour. (Fall)

MUSC 1100. Rudiments of Music. (2) An introductory course in music literacy, including clefs, pitches, key signatures, durational values, and rests. May be taken concurrently with Introduction to Aural Skills & Sight-Singing (MUSC 1101). Three contact hours. (Fall, Spring)

MUSC 1101. Introduction to Aural Skills & Sight-Singing. (1) An introduction to Aural Skills & Sight-Singing, including pitch-matching, modal identification, and rhythmic dictation. May be taken concurrently with Rudiments of Music (MUSC 1100) and/or Class Voice (MUSC 1237). Two contact hours. (Fall, Spring)

MUSC 1102. Fundamentals of Musicianship. (3) An introductory course in basic musicianship, including music literacy (clefs, pitches, key signatures, durational values, and rests) and aural skills (the identification and dictation of modes, melodies, and rhythms). (Summer)

MUSC 1104. The History of Rock Music. (3) A chronological approach to the evolution of rock music, its varied styles and artists. (Fall, Summer)

MUSC 1105. The Evolution of Jazz. (3) A chronological approach to the history of jazz, its main styles and artists. (Spring)

MUSC 1220. Introduction to Instruments. (1) Prerequisite: Acceptance as a music major. An introduction to the band and orchestra instruments most often found in school instrumental music programs for pre-service choral/general music teachers. Students will explore the history, acoustics, sound production and basic techniques of instruments in the brass, woodwind, string and percussion families. (Fall)

MUSC 1222. Jazz Ensemble Techniques. (1) Prerequisite: acceptance as a music minor-major. The teaching and administration of public school jazz ensembles including rehearsal techniques, and analyzing appropriate literature and teaching materials. Fieldwork may be required. (Spring)

MUSC 1223. Woodwind Techniques. (1) Prerequisite: acceptance as a music major. Corequisite: MUPF 1117. Playing and teaching techniques and materials for flute, oboe, clarinet, bassoon, and saxophone. (Fall)

MUSC 1225. Brass Techniques. (1) Prerequisite: acceptance as a music major. Corequisite: MUPF 1117. Playing and teaching techniques and materials for trumpet, horn, trombone, euphonium, and tuba. (Fall)

MUSC 1227. String Techniques. (1) Prerequisite: acceptance as a music major. Corequisite: MUPF 1117. Playing and teaching techniques and materials for violin, viola, cello, and bass. Two contact hours. (Fall)

MUSC 1229. Percussion Techniques. (1) Prerequisite: acceptance as a music major. Corequisite: MUPF 1117. Playing and teaching techniques and materials for snare drum, timpani, mallet percussion, and accessory instruments. (Fall)

MUSC 1230. Structure & Style of Music I. (2) Prerequisites: acceptance as a music minor-major and MUSC 1100 with a grade of C or above. Corequisites: MUSC 1233 and MUSC 1260. The study of basic music theory, including the analysis of diatonic harmony, two-part counterpoint, and the fundamentals of part-writing. Three contact hours. (Fall)

MUSC 1231. Structure & Style of Music II. (2) Prerequisite: MUSC 1230 with a grade of C or above. Corequisites: MUSC 1234 and MUSC 1261. The
continued study of basic music theory, including
harmonic sequences, phrase and period structures,
binary form, and an introduction to chromatic
harmony. Three contact hours. (Fall)

MUSC 1233. Class Piano I. (1) Prerequisites:
acceptance as a music minor/major and MUSC 1100
with a grade of C or above. Corequisites: MUSC 1230
and MUSC 1260. This course is a lab course for
MUSC 1230. Functional keyboard skills and
technique in a group setting, including the
harmonization, transposition, and improvisation of
diatomic melodies, as well as sightseeing
and repertoire. Three contact hours. (Fall)

MUSC 1234. Class Piano II. (1) Prerequisite: MUSC
1233 with a grade of C or above. Corequisites: MUSC
1231 and MUSC 1261. This course is a lab course
MUSC 1231. The continued study of functional
keyboard skills and technique, including the
harmonization, transposition, and improvisation of
major and minor melodies in a variety of keys, as well
as sight-reading and repertoire. Three contact hours.
(Fall)

MUSC 1237. Class Voice. (1) Prerequisite:
Acceptance as a music major/minor. Class instruction
in voice. May be repeated for credit. Three contact
hours. (Fall)

MUSC 1238. Guitar Class I. (2) Prerequisite: open
to non-Music majors only. Class instruction in guitar
using contemporary popular music from a text. Three
contact hours. (Fall, Spring)

MUSC 1239. Guitar Class II. (2) Prerequisite: open
to non-Music majors only. Continuation of MUSC
1238. Three contact hours. (Fall, Spring)

MUSC 1260. Aural Skills & Sight-Singing I. (1)
Prerequisite: acceptance as a music minor/major and
MUSC 1101 with a grade of C or above. Corequisites:
MUSC 1230 and MUSC 1233. This course is a lab
course for MUSC 1230. It contains the practical
application of material from MUSC 1230, as well as
rhythms through simple and compound meters. Three
contact hours. (Fall)

MUSC 1261. Aural Skills & Sight-Singing II. (1)
Prerequisite: MUSC 1260 with a grade of C or above.
Corequisites: MUSC 1231and MUSC 1234. This
course is a lab course for MUSC 1231. It contains
the practical application of material from MUSC
1231, as well as rhythms through simple and
compound meters with varying subdivisions. Three
contact hours. (Spring)

MUSC 1300. Recital and Concert Attendance. (0)
Corequisite: Applied Music (MUPF 1240-1259). This
is a lab course for Applied Music that provides
students with the experience of performing in front of
an audience. By also serving as audience members
and assisting during public concerts, the students
cultivate proper public decorum, contribute to a
professional environment for all university
performances, and increase their knowledge of the
repertoire for a wide variety of instruments. Graded on
a Pass/No Credit basis. May be repeated. (Fall,
Spring)

MUSC 1401. Music Practicum. (1) Prerequisite:
MUSC 1000. Practical application of work in the
areas of equipment management, publicity, box
office, house management, and stage management.
May be repeated for credit. (On demand)

MUSC 1402. Opera and Musical Theatre Practicum.
(1) Prerequisite: permission of instructor. Practical
application of production work in the areas of:
introductory stage rigging, lighting adjustments,
supertitling, costume, props, backstage management
and backstage crew for final rehearsals and
performances of the Opera Workshop ensemble. May
be repeated for credit. (On demand)

MUSC 2001. Topics in Music. (1-6) Prerequisite:
acceptance as a music major/minor. Special topic in music.
May be repeated for credit. (On demand)

MUSC 2101. Introduction to Music Business. (2)
Prerequisite: acceptance as a music major/minor. An
overview of various aspects of the music business,
including marketing, promotion, communication,
conduct, organization, accounting, and
administration. Course projects may include the
creation of promotional materials and planning a
CD/DVD recording project. (Spring)

MUSC 2137. Phonetics and Articulation for Singers
I. (2) Prerequisite: acceptance as a music major/minor.
Pronunciation and articulation in vocal music in
English and Italian. Three contact hours. (Fall)

MUSC 2138. Phonetics and Articulation for Singers
II. (2) Prerequisite: MUSC 2137. Pronunciation and
articulation in vocal music in German and French.
Three contact hours. (Spring)

MUSC 2140. Oboe Reedmaking. (1) Designing and
adjusting American-style oboe reeds, including
techniques for cane gouging, shaping, and sharpening
the double-hollow-ground knife. May be repeated for
credit. Two contact hours. (On demand)

MUSC 2150. Accompanying for Pianists. (1)
Corequisite: MUPF 1248. Accompanying techniques
for pianists. Required accompanying of solos by other
student musicians. May be repeated for credit. One
contact hour. (Fall, Spring)

MUSC 2151. Introduction to Music Technology. (2)
Prerequisite: Acceptance as a music major/minor or
permission of instructor. An introduction to the
standard applications of music technology, including
general computing processes, digital audio, MIDI,
music notation, and computer-aided instruction.
(Spring, Summer)

MUSC 2160. Guitar History and Literature. (2) A
study of the development of the classical guitar
repertoire, the styles and techniques of playing and
the performance practices and the major composers
from the 16th century to the present. Three contact
hours. (On demand)
MUSC 2191. Incorporating Music Into the Elementary Classroom. (3) Students will develop basic music skills that will allow them to choose, prepare, and teach appropriate music materials for inclusion in the classroom curricula. Non-music majors only. Three contact hours. Field work required. (Summer)

MUSC 2222. Marching Band Techniques. (2) Prerequisite: acceptance as a music major/minor. The organization and administration of marching band programs in school settings, the application of teaching techniques for the outdoor program and the practical use of computerized software for designing and teaching of field drills. Field-experience observations of school groups are required. Three contact hours. (Fall)

MUSC 2230. Structure and Style of Music III. (2) Prerequisite: MUSC 1231 with a grade of C or above. Corequisites: MUSC 2233 and MUSC 2260. The study of intermediate music theory, including harmonic harmony, modulation, and simple forms. Three contact hours. (Fall)

MUSC 2231. Structure and Style of Music IV. (2) Prerequisite: MUSC 2230 with a grade of C or above. Corequisites: MUSC 2234 and MUSC 2261. The continued study of intermediate music theory, including advanced chromaticism, largescale forms, and an introduction to serialism and basic set theory. Three contact hours. (Spring)

MUSC 2233. Class Piano III. (1) Prerequisite: MUSC 1234 with a grade of C or above. Corequisites: MUSC 2230 and MUSC 2260. This course is a lab course for MUSC 2230. The continued study of functional keyboard skills and technique, including chromatic harmonization, the transposition and improvisation of melodies with simple harmonic accompaniments, sight-reading, repertoire, and accompanying. Three contact hours. (Fall)

MUSC 2234. Class Piano IV. (1) Prerequisite: MUSC 2233 with a grade of C or above. Corequisites: MUSC 2231 and MUSC 2261. This course is a lab course for MUSC 2231. The continued study of functional keyboard skills and technique, including chromatic harmonization, the transposition and improvisation of melodies with four-part accompaniments, score reading, sight-reading, repertoire, and accompanying. Three contact hours. (Spring)

MUSC 2235. Jazz Improvisation I. (2) Prerequisites: MUSC 1231 and/or permission of instructor. An introduction to jazz theory and its execution through instrumental improvisation. Detailed study of harmony, chord/scale relationships, musical forms, and the integration of this knowledge into performance. Open to instrumentalists only. Three contact hours. (Fall)

MUSC 2236. Jazz Improvisation II. (2) Prerequisites: MUSC 2235 and permission of instructor. A continuation of MUSC 2235, with greater emphasis on performance and integration of advanced harmonic/melodic devices and concepts, solo transcriptions, basic piano voicings, and composition memorization. Open to instrumentalists only. Three contact hours. (Spring)

MUSC 2260. Aural Skills and Sight-Singing III. (1) Prerequisite: MUSC 1261 with a grade of C or above. Corequisites: MUSC 2230 and MUSC 2263. This course is a lab course for MUSC 2230. The practical application of material from MUSC 2230, as well as cross-rhythms involving duplets and triplets. Three contact hours. (Fall)

MUSC 2261. Aural Skills and Sight-Singing IV. (1) Prerequisite: MUSC 2260 with a grade of C or above. Corequisites: MUSC 2231 and MUSC 2234. This course is a lab course for MUSC 2231. The practical application of material from MUSC 2231, as well mixed meters and advanced cross-rhythms. Three contact hours. (Spring)

MUSC 2271. Fundamental Recording Techniques. (1) Prerequisite: Permission of the department. This course will provide music majors with a comprehensive and well-rounded education in fundamental areas of audio recording. One credit hour, once contact hour. Open to all music majors and other majors by permission of the instructor. (Spring)

MUSC 2290. Early Music. (3) Prerequisite: MUSC 1000 with a grade of C or above. Corequisites: MUSC 2231, MUSC 2234, and MUSC 2261. An integrated survey of western music from Classical Antiquity through the Baroque Period, including music history and literature; music theory, counterpoint, and analysis; and improvisation and composition. (Spring)

MUSC 2400. Sophomore Review. (0) A sophomore-level proficiency examination consisting of a transcript evaluation, an applied performance evaluation, and an interview. See the Department of Music Student Handbook for details.

MUSC 3130. Counterpoint. (2) Prerequisite: MUSC 2400. A detailed study of contrapuntal styles of the 16th and 18th centuries through extensive exploration of melodic, harmonic and rhythmic designs with an emphasis on the composition of motets, inventions, and fugues. (Fall)

MUSC 3134. Fundamentals of Conducting. (2) Prerequisite: MUSC 2400. Conducting techniques for instrumental and choral ensembles. Field work required. Three contact hours. (Fall)

MUSC 3135. Choral Conducting. (2) Prerequisites: MUSC 2138 and MUSC 3134. Developing conducting skills for interpreting choral music. Field work required. (Spring)

MUSC 3136. Instrumental Conducting. (2) Prerequisite: MUSC 3134. Developing conducting skills for interpreting instrumental music. Field work required. (Spring)

MUSC 3150. Advanced Accompanying for Pianists. (1) Prerequisite: MUSC 2400. Corequisite: MUPF
MUSC 3151. Accompanying for Non-Pianists. (1) Prerequisite: MUSC 2400. Accompanying techniques for music teachers and private studio instructors, with an emphasis on techniques appropriate for use in classrooms, rehearsals, and studios. May be repeated for credit. One contact hour. (Fall, Spring)

MUSC 3170. Music History I. (3) (W) Prerequisite: MUSC 2400. Limited to music majors only. The intensive study of the development of ideas and styles in the western musical tradition from Ancient Antiquity through the Baroque Period. (Fall)

MUSC 3171. Music History II. (3) (W) (O) Prerequisite: MUSC 3170. The intensive study of the development of ideas and styles in the western musical tradition from the Classical period to the present. (Spring)

MUSC 3300. Advanced Recital and Concert Attendance. (O) Corequisite: Advanced Applied Music (MUPF 3240-3259). This is a lab course for Advanced Applied Music that provides students with multiple experiences of performing in front of an audience. By also serving as audience members and assisting during public concerts, the students continue to cultivate proper audience decorum, contribute to a professional environment for all university performances, and increase their knowledge of the repertoire for a wide variety of instruments. Graded on a Pass/No Credit basis. May be repeated for credit. (Fall, Spring)

MUSC 3410. Music Internship. (1-3) Prerequisites: MUSC 2400 and permission of the department. Provides a meaningful work experience in fields such as music business, music industry, and arts administration. Requires 40-50 hours of supervised employment per credit hour. Proposal forms must be completed and approved prior to registration. Graded on a Pass/No Credit basis. (On demand)

MUSC 4001. Advanced Topics in Music. (1-6) Prerequisites: MUSC 2400 and permission of instructor. Special advanced topic in music. May be repeated for credit. (On demand)

MUSC 4049. Violin Literature. (3) Prerequisite: MUSC 4294. An analysis course focusing on the major repertoire for the violin. Methodologies will include both historical and structural analysis of violin compositions from the seventeenth century through the present. (Spring)

MUSC 4132. Guitar Pedagogy and Materials. (3) Prerequisite: MUSC 2400. An introduction to the teaching of the principles of classical guitar playing, including the performance practices and the music of major composers from the 16th century to the present. Three contact hours. (On demand)

MUSC 4133. Wind Pedagogy and Materials. (3) Prerequisite: MUSC 2400. A methodology course dealing with the techniques and materials necessary for offering private instruction on woodwind and brass instruments. (Fall)

MUSC 4134. String Pedagogy and Materials. (3) Prerequisite: MUSC 2400. A methodology course outlining the teaching techniques, materials and related literature necessary for offering applied instruction on string instruments. (Fall)

MUSC 4135. Percussion Pedagogy and Materials. (3) Prerequisite: MUSC 2400. A methodology course dealing with the techniques and materials necessary for offering private instruction on percussion instruments. (Fall)

MUSC 4136. Keyboard Pedagogy and Materials. (3) Prerequisite: MUSC 2400. A methodology course dealing with piano performance and teaching including: technique, learning procedures/styles, performance, physiology, methods, wellness issues, and technology. (Fall)

MUSC 4137. Vocal Pedagogy and Materials. (3) Prerequisite: MUSC 2400. A methodology course designed to present the physiological and acoustical bases for a coherent approach to the teaching of singing. Areas of vocal technique to be studied include the physiology of the voice, posture, breathing, onset of sound, articulation, vocal registration, and other related areas. (Spring)

MUSC 4138. Jazz Pedagogy and Materials. (3) Prerequisite: MUSC 2400. The teaching and conducting of public school instrumental and vocal jazz ensembles, including rehearsal techniques, concert presentation, the history and theory of jazz, sources for appropriate teaching materials and improvisation techniques. Field work required. Three contact hours. (Fall)

MUSC 4149. Violin Pedagogy. (3) Prerequisite: MUSC 2400. Corequisites: MUPF 3249 and MUPF 3249L. A methodology course outlining the teaching techniques, materials, and related literature necessary for offering private instruction on the violin. (Fall)

MUSC 4230. Form and Analysis. (3) Prerequisite: MUSC 2400. The impact of form and process on the analysis and interpretation of music. A detailed examination of common practice forms such as Binary, Ternary, Rondo, Theme and Variation, and Sonata form. (Fall)

MUSC 4231. Post-Tonal Processes. (3) Prerequisite: MUSC 4230. The study of contemporary music through the implementation of a variety of analytical techniques such as modal analysis, set theory, and serial analysis. Prerequisites: A detailed exploration of contemporary styles including Impressionism, Modernism, Neoclassicism, Post-Serialism, Minimalism, and Neo-Romanticism. (Spring)

MUSC 4234. Jazz Arranging and Composition. (3) Prerequisites: MUSC 2235 and MUSC 2400. The
study of arranging and orchestration techniques in the jazz style. Detailed analysis of historically important music scores for jazz combo and jazz ensemble. Instrument ranges, scoring techniques, and advanced harmonic substitutions will be addressed. Combo and large ensemble writing projects will be assigned. (Spring)

MUSC 4235. Orchestration and Arranging. (3) Prerequisite: MUSC 2400. Orchestration and the techniques used to transcribe and arrange music for vocal and instrumental ensembles with a focus on writing and performance. Three contact hours. (Fall)

MUSC 4240. Composition. (2) Prerequisite: MUSC 2400, MUSC 4145, and permission of instructor. An introduction to compositional techniques of melody, harmony, rhythm, form, and instrumentation with an emphasis on writing, listening, and performance. May be repeated for credit. One contact hour. (Spring)

MUSC 4241. Advanced Composition. (2) Prerequisite: MUSC 4240. The advanced study of composition, including process, form, pitch and rhythmic organization, and instrumentation. The course consists of advanced private instruction, a one-hour lesson per week, focusing exclusively on the writing and performance of original compositions. May be repeated for credit. (Fall)

MUSC 4294. Music of the 18th and 19th Centuries. (3) Prerequisite: MUSC 2400. An integrated survey of western music in the eighteenth and nineteenth centuries, including music history and literature; music theory, counterpoint, and form and analysis; and improvisation and composition. (Fall)

MUSC 4296. Music of the 20th and 21st Centuries. (3) Prerequisite: MUSC 4294 with a grade of C or above. An integrated survey of western music in the twentieth and twenty-first centuries, including non-western influences; music theory and analysis; and improvisation and composition. (Spring)

MUSC 4298. Jazz History. (3) Prerequisite: MUSC 2400. The study of significant musicians and literature in the history of jazz. Detailed analyses of influential scores and recordings will constitute a significant part of the course. Written projects such as research and listening reaction papers will be assigned. (Fall)

MUSC 4800. Senior Project Preparation. (3) Prerequisites: A grade of C or above in at least three semesters of 3000-level Applied Music (MUPF 32xx) and permission of the department. Course consists of private instruction, a one-hour meeting per week, leading to a formal research paper of approximately 40 pages in length or a comparable project of equivalent rigor. (Fall, Spring)

MUSC 4900. Senior Project. (0) The project may consist of written historical, theoretical, or technological research; original compositions recorded and performed; or a lecture supported by written original research and documentation. See the Department of Music Student Handbook for details. (Fall, Spring)

NEURODIAGNOSTICS AND SLEEP SCIENCE (NDSS)

For assistance in registration for NDSS courses, please contact the Department of Kinesiology at (704) 687-4700.

NDSS 3101. Pathophysiology of Sleep, Neurological, and Related Disorders. (3) Prerequisite: NDSS major. Explores the diseases affecting the nervous system, the sleep/wake cycle, and psychiatric and behavioral disorders. Topics include etiology, clinical manifestations, pharmacology, disease prevention, and overview of treatments. (Fall) (Internet)

NDSS 3102. Neurological and Sleep Diagnostic and Therapeutic Methods, and Monitoring Services. (3) Prerequisite: NDSS major. Explores the services available at sleep and neurophysiology laboratories and interpretation of diagnostic findings. Topics include sleep procedures, electroencephalography, and intracranial/long-term epilepsy monitoring. Students participate in laboratory practice sessions. (Fall) (Internet)

NDSS 3104. Advanced Sleep and Neurodiagnostic Clinical Procedures. (3) Prerequisites: NDSS major and a grade of C or above in NDSS 3101 and NDSS 3102. Students learn advanced procedures performed in sleep centers and neurophysiology laboratories. Topics include nerve conduction velocities, electroencephalography, and autonomic testing techniques. Students participate in laboratory practice sessions. (Spring) (Internet)

NDSS 3405. Practicum. (3) Prerequisites: NDSS major and a grade of C or above in NDSS 3104. Sleep disorders center and clinical neurophysiology laboratory clinical experience. (Summer)

NDSS 4101. Principles and Practice of Healthcare Education. (3) Prerequisites: NDSS major and a grade of C or above in NDSS 3101. Provides a foundation in the principles and practice of healthcare education. Topics include the educational process, learner characteristics, and teaching and learning theories, techniques and strategies. (Fall) (Internet)

NDSS 4104. Advanced Physiological Monitoring and Data Acquisition. (3) Prerequisites: NDSS major and a grade of C or above in NDSS 3104. Students learn advanced clinical procedures performed in clinical neurophysiology laboratories and operating rooms. Topics include evoked potentials and intraoperative neurophysiologic monitoring. Students participate in laboratory practice sessions. (Fall) (Internet)

NDSS 4105. Leadership in Healthcare Organizations. (3) Prerequisites: NDSS major and a grade of C or above in RESP 4102 and NDSS 4101. Focuses on the theories and practices of leadership in health
care. Global, social, legal, political, economic, and ethical issues are explored. *(Spring) (Internet)*

**NURSING: RN (NURN)**

**NURN 3103. Concepts of Professional Nursing Science.** *(3)* Prerequisite: Admission to RN/BSN curriculum or permission of instructor. Introduces professional nursing with emphasis on theoretical, ethical, and legal models guiding practice. *(Fall, Spring)*

**NURN 3108. Health Assessment for Nurses.** *(3)* Prerequisites: Admission to the RN-BSN Program, BIOL 1259, and BIOL 1274. Pre- or corequisite: NURN 3103. Corequisite: NURN 3108L. Evaluation of human function using interview and physical examination data within a framework for clinical decision making. Competencies necessary for holistic health assessment across the lifespan. *(Fall, Spring)*

**NURN 3108L. Health Assessment Lab.** *(0)* Prerequisite: Admission to the RN-BSN Program. Corequisite: NURN 3108. Evaluation of human function using interview and physical examination data within a framework for clinical decision making. Competencies necessary for holistic health assessment across the lifespan.

**NURN 4100. Aging and Health.** *(3) (W)* Prerequisites: Admission to the RN-BSN Program; NURN 3108; CHEM 1203; SOCY 1101 or ANTH 1101; and PSYC 1101. Examination of physiological process of aging as a normal life experience. Study of psychological, nutritional, and general health issues designed to facilitate high level wellness. *(Fall, Spring)*

**NURN 4201. Information Technology: Applications in Health Care.** *(2)* Prerequisite: Upper-division standing or permission of instructor. A study of the use of computers and information technology in health care. Emphasis is placed on development of the knowledge and competencies necessary for selective use of evaluation of informatics, computer technology and data management in health care. *(Spring, Summer)*

**NURN 4203. Leadership in Nursing Practice.** *(2)* Prerequisite: Admission to the RN-BSN Program and NURN 3103. Exploration of societal and professional trends and issues affecting nursing and health care. Leadership strategies within the profession and practice of nursing. Analysis of care that supports effective utilization of the health care delivery system. Health system mediation and health system management will be explored from a nursing intervention perspective. *(Fall, Summer)*

**NURN 4440. Community Health Nursing.** *(6) (W)* Prerequisites: Admission to the RN-BSN Program, STAT 1220, BIOL 1259, BIOL 1274, ENGL 1101, and SOCY 1101 or ANTH 1101, and NURN 3103. Development of competencies for the nursing care management of culturally diverse individuals, families, and populations within communities with emphasis on the nurse’s role in health promotion and maintenance. Particular focus on risk identification and reduction throughout the life span. *(Spring, Summer)*

**NURN 4450. Design and Coordination of Care.** *(6) (W)* Prerequisites: Admission to the RN-BSN Program, BIOL 1259, BIOL 1274, CHEM 1203, NURN 3108, and NURN 4201. Corequisites: NURN 4203 and NURN 4900. Application of theory-based practice in a variety of settings with clients who have multiple health care needs. Emphasizes are on clinical judgment and decision-making, diagnostic reasoning, clinical ethics, collaboration and case management. Examination of nursing therapeutics within the structure of nursing process and nursing diagnosis. *(Fall, Spring)*

**NURN 4900. Research in Nursing Practice.** *(2) (W)* Prerequisites: Admission to the RN-BSN Program, STAT 1220, ENGL 1101, and NURN 3103. Exploration of the theoretical foundations of nursing with emphasis on research, theories, concepts and processes leading to their application in practice. *(Fall, Summer)*

**NURSING (NURS)**

**NURS 2100. General Nutrition.** *(2)* Prerequisite: CHEM 1204 or 1252. A solid knowledge base of general nutrition viewed from a life cycle perspective. Exploration of behavioral aspects and scientific concepts related to nutrition. Open to Pre-nursing majors, sophomore standing. *(Fall, Spring)*

**NURS 2200. Human Growth and Development.** *(3)* Pre- or corequisites: BIOL 1273 and 1273L. Study of the developing person through the lifespan by examining the relationship of selected environmental and social factors to human growth and development. Consideration of the meaning of health and illness to the individual, the family, and the community within the context of life as a continuing, dynamic process from conception through death. Open to Pre-nursing majors, sophomore standing. *(Fall, Spring)*
NURS 2201. Communication in Caring Relationships. (2) Prerequisites: ENGL 1101, ENGL 1102, PSYC 1101, and SOCY 1101 or ANTH 1101. Introduction to essential communication competencies within the context of helping relationships. Emphasis is on communication processes, cultural competence, and skills in a therapeutic relationship. Open to Pre-nursing majors, sophomore standing. (Fall, Spring)

NURS 3102. Introduction to Nursing Science. (3) Prerequisite: Admission to the Nursing Major. An introduction to the theoretical and scientific basis of nursing practice, including an overview of the profession and examination of major concepts, theories, and models. (Fall, Spring)

NURS 3105. Concepts of Professional Nursing. (3) Prerequisite: Admission to the Nursing Major. Corequisite: NURS 3106 (Skills Set I) and NURS 3108 (Health Assessment.) Concepts and standards fundamental to professional nursing practice. Explores the unique role of nursing in the healthcare system. (Fall, Spring)

NURS 3106. Skill Set I – Basic. (1) Prerequisite: Admission to the Nursing Major. Corequisite: NURS 3105 (Concepts of Professional Nursing.) Introduction of skills and psychomotor activities for the basic care of simulated clients. Three hours of skills lab practice per week in a learning module format. (Fall, Spring)

NURS 3107. Pathophysiology: Clinical Concepts of Illness and Disease. (3) Prerequisite: Admission to the Nursing Major. Conceptual basis of alterations in physiological processes that disrupt or impair health and the body’s response to illness and disease. Building on knowledge obtained in previous courses in the biological and social sciences, this course provides a foundation for building critical thinking skills in the differentiation of disease and illness. (Fall, Spring)

NURS 3108. Health Assessment and Application. (3) Prerequisite: Admission to the Nursing Major. Pre- or corequisites: NURS 3105, NURS 3106, and NURS 3107. Evaluation of human function using interview and physical examination data within a framework for clinical decision making. Competencies necessary for holistic health assessment across the lifespan. (Fall, Spring)

NURS 3205. Pharmacology in Health and Illness. (3) Prerequisites: Admission to the Nursing Major and NURS 3107 or permission of instructor. Presentation of the theoretical base for the safe and therapeutic use of drugs. Examination of Pharmacologic agents commonly used in health and illness and the standards and societal controls of drugs are explored. (Fall, Spring)

NURS 3206. Skill Set II – Intermediate. (1) Prerequisites: Admission to the Nursing Major and NURS 3106. Corequisites: NURS 3430 and NURS 3440. The acquisition of intermediate psychomotor activities for the care of simulated clients with intermediate disease processes. Three hours of skills lab per week in a learning module format. After successful completion of this course, students will be eligible to be listed on the North Carolina Board of Nursing Nurse Aide II Registry. (Fall, Spring)

NURS 3230. Illness and Disease Management. (3) Prerequisite: Admission to the Nursing Major. Corequisites: NURS 3206 and NURS 3430. Focus on health promotion strategies and nursing interventions appropriate for planning care of adult clients with basic pathophysiological alterations. (Fall, Spring)

NURS 3250. Nursing Care of the Childbearing Family. (2) Prerequisites: Junior 1 Nursing Courses. Corequisite: NURS 3440. Foundations of nursing care of families during the childbearing year. Emphasis on the nurse's role in health assessment, health promotion and promotion of adaptive processes of the individual and family during pregnancy, birth, transition to parenthood, and the newborn period, including alterations in health status. There is a $22.50 course fee. (Fall, Spring)

NURS 3260. Nursing Care of Children. (2) Prerequisites: Junior 1 Nursing Courses. Corequisite: NURS 3440. Foundations of nursing care of children and families during the childrearing years. Emphasis on the nurse’s role in health assessment, health promotion and promotion of adaptive processes of the child and family during childhood from infancy to adolescence, including alterations in health status. There is a $22.50 course fee. (Fall, Spring)

NURS 3425. Practicum in Concepts of Professional Nursing. (1) Prerequisite: Admission to the Nursing Major. Corequisites: NURS 3105, NURS 3106, and NURS 3108. This clinical course introduces the application of concepts, skills and values fundamental to professional nursing practice. (Fall, Spring)

NURS 3430. Practicum Illness and Disease Management. (3) Prerequisites: Admission to the Nursing Major and NURS 3108. Pre- or Corequisite: NURS 3206 and NURS 3230. Clinical practice in health care settings that correlates with theoretical content related to basic pathophysiological alterations. Students will provide care in diverse clinical settings to develop psychomotor skills and apply knowledge in making clinical decisions. (Fall, Spring)

NURS 3440. Practicum in Nursing Care of Children and the Childbearing Family. (3) Prerequisites: Admission to the Nursing Major and NURS 3108. Pre- or Corequisite: NURS 3206. Development of competencies essential for the nursing care of families during the childbearing and childrearing years. A variety of clinical experiences are provided, including community-based care, patient education, and in-patient care, with an emphasis on family-centered nursing practice. (Fall, Spring)

NURS 3895. Independent Study in Nursing. (1-4) Prerequisite: permission of the instructor. Directed individual study in a selected aspect of nursing which
is explored in greater depth than included in the planned curriculum. May be repeated for additional credit as focus of the study varies. No more than six hours in NURS 3895 and/or 4090 may be counted toward degree requirements. (On demand)

NURS 4000. Topics in Nursing. (1-3) Prerequisite: permission of the instructor. Critical examination of selected current topics in nursing. (Fall, Spring)

NURS 4090. International Comparative Health Systems: Western Europe. (3) Cross-listed as HLTH 4090. A two-week study tour to explore the cultures, social, and health care systems in Western Europe and to compare them with systems in the United States. Participants will visit a variety of health care sites and attend presentations by practitioners and educators. They will have opportunities to interact with people from the host countries and visit a variety of cultural and historic sites. (Summer)

NURS 4100. Nursing Care of the Aging Adult. (3) Prerequisite: Senior Standing in the Nursing Program. Examination of the processes of aging. Study of the nursing care for healthy, aging adults; frail, aging adults; institutionalized, aging adults; and dying, aging adults. (Fall, Spring)

NURS 4106. Skill Set III – Complex. (1) Prerequisite: Admission to the Nursing Major and NURS 3206. Corequisite: NURS 4130. The acquisition of complex psychomotor skills in caring for simulated clients with complex disease processes. Three hours of skills lab per week in a learning module format. (Fall, Spring)

NURS 4120. Psychiatric Mental Health Nursing. (3) Prerequisites: Admission to the Nursing Major and NURS 3430 and NURS 3440. Corequisite: NURS 4420. This course provides the foundation of Psychiatric Mental Health Nursing with emphasis on biopsychosocial content in the understanding and care of acute and chronic and chemically dependent clients. There is a $23 course fee. (Fall, Spring)

NURS 4130. Complex Illness and Disease Management. (3) Prerequisites: Admission to the Nursing Major and NURS 3230. Prerequisite or corequisite: NURS 4106. Corequisite: NURS 4430. Illness and disease management of adult patients with complex pathophysiological alterations. Focus is on care management of clients with complex and pathophysiological health needs. There is a $23 course fee. (Fall, Spring)

NURS 4191. Women's Health Issues. (3) Cross-listed as WGST 4191. Prerequisite: WGST 1101 or permission of the instructor. Exploration of contemporary issues in women's health from the feminist and women's health movement perspectives. (Yearly)

NURS 4192. Enhancing Clinical Judgment. (3) Prerequisites: Admission to the RN-BSN Completion option or instructor's permission. Enhances student's ability to make sound nursing clinical judgments. Students have the opportunity to (a) reflect on their own style of thinking, (b) examine the role of critical thinking in making clinical judgments, (c) learn strategies for enhancing critical thinking and clinical reasoning, (d) practice applying the strategies in a variety of case studies, (e) critically study their own clinical practice, and (f) benefit from learning via online group discussion with peers. (Fall, Spring)

NURS 4193. Professional Communication: Clinical Decision Making and Ethical Reasoning. (3) Prerequisite: Admission to the major. This course is designed to provide the student with skills needed to interact with clients, families, and other health professionals. A variety of communication strategies that facilitate more effective functioning as a professional are explored. Experiential activities and online seminars are designed to enhance awareness of personal and professional values in relation to ethical questions in practice. Students are challenged to synthesize communication strategies based on principles from nursing, psychology, communications and other disciplines. (On demand)

NURS 4194. Building Community Response to Domestic Violence. (3) Open to non-nursing majors. Emphasizes an understanding of professional helping roles in the prevention and intervention of domestic violence. The course emphasizes the importance of a “community” response to domestic violence that includes the role of law enforcement, health care, men's treatment, and women's shelter and advocacy programs. (On demand)

NURS 4203. Leadership and Informatics for Nursing Practice. (3) Prerequisite: Admission to the Nursing Major. Corequisite: NURS 4450. Introduction to leadership focusing on health care systems and the nurse’s role. Explore external and internal forces that affect the work environment and how to influence those forces. Discuss the work environment that best motivates people and creates an atmosphere that inspires, instills confidence and sustains individuals. Incorporate understanding of self to enhance beginning leadership. (Fall, Spring)

NURS 4240. Population Focused Nursing. (3) Prerequisite: Admission to the Nursing Major. Corequisite: NURS 4440. Examination and analysis of concepts and theories related to care of populations from a perspective of social justice. Focuses on health indicators and risk reduction in diverse groups across the lifespan and development of community partnerships within health care systems. (Fall, Spring)

NURS 4420. Practicum in Psychiatric Mental Health Nursing. (3) Prerequisite: Admission to the Nursing Major. Corequisite: NURS 4420. Development of competencies necessary for the practice of psychiatric mental health nursing. Emphasis is on the use of self in relationships, psychiatric nursing assessment, nursing interventions with clients and working as a member of the health care team. A variety of clinical settings are used. (Fall, Spring)

NURS 4430. Practicum in Complex Illness & Disease Management. (3) (O) Prerequisites: Admission to
the Nursing Major, NURS 3230, and NURS 3430. Corequisites: NURS 4106, NURS 4130. Clinical practice in health care settings that correlate with theoretical content related to complex pathophysiological alterations. Students will provide care in diverse clinical settings to continue to develop psychomotor skills and apply knowledge for clinical decision-making and reasoning. (Fall, Spring)

NURS 4440. Practicum in Population Focused Nursing. (2) Prerequisite: Admission to the Nursing Major. Corequisite: NURS 4240. Development of competencies related to care of diverse populations. Preceptor experiences occur in a variety of communities and agencies that provide opportunities for interdisciplinary experiences. (Fall, Spring)

NURS 4450. Design and Coordination of Care. (3) (W) Prerequisites: Admission to the Nursing Major and NURS 4430. Corequisite: NURS 4203. Clinical application of knowledge and skills in the design, management, and coordination of care for clients in a variety of health care settings. Precepted clinical experience with written clinical decision making projects. There is a $58 course fee. (Fall, Spring)

NURS 4600. Seminar in Professional Licensure. (1) Prerequisite: NURS 4130. Addresses the required components for professional licensure in nursing, including preparation for the NCLEX-RN exam. Students take this course during the last semester before graduation. Class meets two hours a week during the final 7 weeks of the semester. (Fall, Spring)

NURS 4900. Research in Nursing Practice. (2) Prerequisite: Admission to the Nursing Major. Exploration of research methodologies relative to nursing practice, with emphasis on research utilization and evidence-based practice. (Fall, Spring)

OPERATIONS MANAGEMENT (OPER)

OPER 3000. Topics in Operations Management. (3) Prerequisite: OPER 3100 with a grade of C or above. Topics from the areas of Operations Management. The course may be repeated for credit. (On demand)

OPER 3100. Operations Management. (3) Prerequisites: ACCT 2121, 2122; ECON 2101, 2102; INFO 2130; MATH 1120; and STAT 1220 with grades of C or above; Junior standing. Introduction to and development of the management functions in manufacturing and non-manufacturing organizations. A systems approach to the organizational environment, the basic operating functions, the problems and decisions a manager encounters and solution techniques and models. Computer application are included where appropriate. (Fall, Spring, Summer) (Evenings)

OPER 3201. Advanced Operations Management. (3) Prerequisite: OPER 3100 with a grade of C or above. An in-depth study of production planning and control activities in an enterprise resource planning context. Topics covered include: forecasting, operations and capacity planning, master production scheduling, material requirements planning, production activity control, inventory management, and Just-in-Time inventory systems. The use of software to manage operations and the interactions between operations and other functional areas of a business will be emphasized. (Fall)

OPER 3203. Decision Modeling and Analysis. (3) Prerequisite: OPER 3100 with a grade of C or above. Analytical approach to understanding the management process and solving management problems with emphasis on model formulation, solution techniques, and interpretation of results. Specific topics covered in this course include: techniques such as linear, integer, goal and multi objective programming; queuing theory and applications; decision support via Monte Carlo simulation; decision making under uncertainty and risk; decision trees; and multi-criteria decision making. Excel is the main analytical tool. (Fall)

OPER 3204. Management of Service and Project Operations. (3) Prerequisites: OPER 3100 with a grade of C or above. This course examines both strategic and operational decision making in service management with emphasis on the latter. Topics include service strategy, designing new services, assessing and improving service quality, improving the efficiency and effectiveness of service processes, service process design and service facility location, managing waiting lines, managing service projects, and the integration of technology into service operations. (Spring)

OPER 3206. Quality Assurance and Management. (3) Prerequisites: OPER 3100 with a grade of C or above. A study of management philosophy, practices and analytical processes implemented in quality planning and administration of products and services. Topics include corporate culture, quality design, human factors and motivation, quality cost analyses and auditing, service quality, quality assurance, quality circles, and conformance to design. (Spring)

OPER 3208. Supply Chain Management. (3) Prerequisites: OPER 3100 with a grade of C or above. Supply chain management is concerned with all of the activities performed from the initial raw materials to the ultimate consumption of the finished product. From a broad perspective, the course is designed to examine the major aspects of the supply chain: the product flows; the information flows; and the relationships among supply chain participants. The course content is interdisciplinary in nature and will cover a variety of topics such as supply chain information technologies, supply chain design, strategic alliances between supply chain participants and supply chain initiatives. (Spring)

OPER 3400. Operations and Supply Chain Management Internship. (1-6) Prerequisite: Junior or Senior in good standing and department approval. Full- or part-time academic year internship in areas complementary to the concentration area of studies.
and designed to allow theoretical and course-based practical learning to be applied in a supervised industrial experience. Requires 50 hours of supervised employment per hour of credit. Each student's internship program must be approved by the supervising faculty. A proposal form must be completed and approved prior to registration and the commencement of the work experience. A mid-term report and a final report to be evaluated by the supervising faculty are required. Grading will be by the supervising faculty and could be in consultation with off-campus supervisor at the internship organization. Graded on a Pass/No Credit basis. A student who is employed with applying for this Management Information Systems internship may not earn internship credit through work for the current employer. May be used to meet requirements of a major elective, up to a maximum of six credit hours. (Fall, Spring, Summer)

OPER 3500. Cooperative Education and 49ership Experience. (0) Prerequisite: Operations and Supply Chain Management major. Enrollment in this course is required for the department's cooperative education and 49ership/service 49ship students. During each semester they are working in a position. Acceptance into the Experiential Learning Program by the University Career Center is required. Participating students pay a course registration fee for transcript notation (49ership and co-op) and receive full-time student status (co-op only). Assignments must be arranged and approved in advance. Course may be repeated; evaluation is Satisfactory/Unsatisfactory. Only open to undergraduate students; Graduate level students are encouraged to contact their academic departments to inquire about academic or industrial internship options for credit. For more information, contact the University Career Center. (Fall, Spring, Summer)

OPER 3800. Directed Study. (1-6) Prerequisites: Permission of the department and Junior standing. Enrollment granted only by permission of the faculty with whom the work will be performed. The student's work assignments will be designed by the student and faculty member who will oversee the project of study. The credit hours will be determined prior to enrollment and will be based on the particular project undertaken. (On demand)

OPERATIONS RESEARCH (OPRS)

OPRS 3111. Operations Research: Deterministic Models. (3) Prerequisites: MATH 1242 and 2164. Linear, integer and dynamic programming, the simplex method, networks, PERT and CPM techniques, game theory, and applications. (On demand)

OPRS 3113. Operations Research: Probabilistic Models. (3) Prerequisite: MATH 1242, 2164, and STAT 2122 or MATH/STAT 3122, or permission of the department. Queuing models, inventory models, simulation, markov chains, decision analysis, game theory and probabilistic dynamic programming. (On demand)

OPRS 4010. Topics in Decision Mathematics. (2-3) Prerequisite: Permission of the department. Topics in decision mathematics selected to supplement regular course offerings in this area of mathematics. May be repeated for additional credit with the approval of the department. Credit for the M.A. degree in Mathematics requires approval of the department. (On demand)

OPRS 4113. Game Theory. (3) Prerequisites: OPRS 3111 and one of STAT 2122, MATH/STAT 3122, or OPRS 3113. The theory of zero-sum matrix games, mini-max theorem, optimal strategies, symmetric games, economic models, infinite, separable, polynomial, multi-stage, general-sum and in-person games. A project will be required of all graduate students. (On demand)

OPRS 4114. Dynamic Programming. (3) Prerequisites: ITCS 1214, OPRS 3111, and one of STAT 2122, MATH/STAT 3122 or OPRS 3113. The identification of dynamic programming problems and their solution in terms of recurrence relations. Elementary path problems, resource allocation, shortest path, traveling salesmen problem, discrete-time optimal control, replacement models, and inventory systems. A project will be required of all graduate students. (On demand)

PHILOSOPHY (PHIL)

PHIL 1105. Critical Thinking. (3) (W) Fundamental skills of clear thinking that will help people reason better during communication, problem-solving, and design, particularly as these integrate scientific/engineering efforts with social needs and values. The course will focus on clarifying goals, identifying constraints, and generating and evaluating ideas or solutions. (Fall, Spring, Summer)

PHIL 2101. Introduction to Philosophy. (3) Cross-listed as PHIL 2102, but does not fulfill the General Education writing goal. Students can receive credit for either PHIL 2101 or PHIL 2102, but not both. Exploration of some of the basic problems that have shaped the history of philosophy (truth, knowledge, justice, beauty, etc.) and remain relevant to students today on personal and professional levels. Readings will range from classical to contemporary texts by a variety of philosophers representing diverse perspectives on these problems. Please see the descriptions in Banner attached to each section to appreciate the different ways this course will be taught every semester. (Fall, Spring, Summer)

PHIL 2102. Introduction to Philosophy – Writing Intensive. (3) (W) Cross-listed as PHIL 2101, but fulfills the General Education writing goal. Students can receive credit for either PHIL 2101 or PHIL 2102, but not both. Exploration of some of the basic problems that have shaped the history of philosophy (truth, knowledge, justice, beauty, etc.) and remain
relevant to students today on personal and professional levels. Readings will range from classical to contemporary texts by a variety of philosophers representing diverse perspectives on these problems. Please see the descriptions in Banner attached to each section to appreciate the different ways this course will be taught every semester. Makes substantial use of writing as a tool for learning. (Fall, Spring, Summer)

PHIL 2105. Deductive Logic. (3) Principles of deductive logic, both classical and symbolic, with emphasis on the use of formal logic in analysis of ordinary language discourse. (Fall, Spring, Summer)

Prerequisites for upper-level courses. While PHIL 2101 or 2102 are not prerequisites for courses at the 3000-level and above, students who have taken PHIL 2101 or 2102 typically benefit more from upper level philosophy courses than students who have not.

PHIL 3010. Ancient Philosophy. (3) Western intellectual and philosophic thought from the early Greeks to the post Aristotelian period, often with an eye to issues in contemporary philosophy. Readings from the pre Socratics, Plato, Aristotle, Epicureans, Stoics, Skeptics, and Neoplatonists. (Yearly)

PHIL 3020. Modern Philosophy. (3) Modern philosophic and scientific thought from Descartes to Kant. Readings selected from representative works in the 17th and 18th centuries. (Yearly)

PHIL 3030 Twentieth-Century Philosophy. (3) Examination of some central problems, issues, and methodologies of Twentieth-Century Philosophy. Examination may include: pragmatism, phenomenology, logical analysis, existentialism, ordinary language philosophy, critical theory, hermeneutics, structuralism, or post-structuralism. (Alternate Years)

PHIL 3110. Medieval Philosophy. (3) Western philosophical tradition from Augustine to William of Ockham. Readings include such other authors as Anselm of Canterbury, Bonaventure, Thomas Aquinas, and Duns Scotus. (On demand)

PHIL 3120. Nineteenth-Century Philosophy. (3) Examination of some central problems, issues, and methodologies of Nineteenth-Century Philosophy, including from some more contemporary perspectives, such as feminism. Examination may include: German Idealism (e.g., Fichte, Schelling, Hegel, Schopenhauer), Early Existentialism (e.g., Kierkegaard, Nietzsche), Early Phenomenology (e.g., Balzano, Brentano), Social Philosophy (e.g., Comte, Feuerbach, Bentham, Mill, Marx), and American Philosophy (e.g., Peirce, James, Washington, DuBois). (On demand)

PHIL 3130. American Philosophy. (3) This course will analyze the question of what constitutes American Philosophy, examining the interaction between America and philosophy and exploring some of the characteristics that may help contribute to the characterization of American Philosophy including: individualism, community, practicality, fallibility, and meliorism. The course will critically examine the narrative of American philosophy, focusing on pragmatism, America's distinctive contribution to philosophy, and assess the role that American philosophy has, can, and should play concerning social and cultural issues in America. (On demand)

PHIL 3140. Existentialism. (3) Existentialist tradition in philosophy and literature including such issues as: authenticity, absurdity and the meaning of life, freedom and morality, anguish, death, and atheism. (On demand)

PHIL 3170. Major Figure in Philosophy. (3) An investigation into the thoughts and writings of a major figure in philosophy with special emphasis on primary sources. Included may be Plato, Aristotle, Descartes, Kant, Marx, Nietzsche, Heidegger, Quine, Davidson, Rawls, and others as indicated by departmental needs and interests. May be repeated for additional credit. (On demand)

PHIL 3190. Topics in History/Genealogy. (3) Specific topics in the history/genealogy of philosophy. May be repeated for additional credit with the approval of the department. (On demand)

PHIL 3210. Ethical Theory. (3) Selective examination of major normative and metaethical theories that undergird our practical judgments about morally right actions and virtuous persons. Normative theories studied may include virtue ethics, deontology, consequentialism, and representative feminist theories. Metaethical theories studied may include cognitivism, expressivism, realism, and error theory. (Yearly)

PHIL 3220. Aesthetics. (3) Discussion and analysis of major theories of art ranging from historical figures (Plato, Aristotle, Hume, Kant, Nietzsche, and Dewey) to contemporary philosophers (Sontag, Danto, Kristeva, and Ranciere). Emphasis will be on the development of aesthetics in relation to the visual and performing arts, new media, and philosophy, but also in response to social-political-cultural issues, such as feminism, racism, and the like. (Yearly)

PHIL 3230. Healthcare Ethics. (3) Major ethical dilemmas within medical science and biology are examined to assist students to identify, analyze, and decide ethical issues in such a way that they can defend their positions to themselves and others. Issues include reproductive and genetic technology, death and dying, patient rights, and justice in distribution of healthcare benefits and burdens. (Yearly)

PHIL 3310. IT Ethics. (3) Looks at ethical issues that emerge in the context of new technologies. We will combine a study of traditional moral theories with a look at how those theories might help us understand some of the many challenges presented by contemporary technologies. Topic areas may include privacy/surveillance, intellectual property (things like cell patents, peer-to-peer file sharing, etc.), and
genetically modified foods. (On demand)

PHIL 3320. Engineering Ethics. (3) This course will familiarize students with the ethical and social dimensions of professional engineering practice. The course is built around discussions of: (1) some of the classical philosophical theories (Utilitarianism, Respect for Persons, etc.), (2) concepts and techniques for breaking down complicated scenarios (factual, conceptual, etc.), (3) typical problem areas such as professional integrity and responsibility, risk analysis, and the conflict between engineers and managers, (4) case studies and special focus on classic cases (Columbia and Challenger disasters, etc.), and (5) various ethical codes of the engineering profession (electrical, mechanical, petroleum, etc.). Emphasis on the enhancement of skills in critical thinking and effective communication in professional engineering. (On demand)

PHIL 3330. Philosophy and Literature. (3) Discussion and analysis of the classic and contemporary philosophical themes in literature, the literary dimensions of philosophy (e.g., Plato, Montaigne, Kierkegaard, and Nietzsche) to the contemporary range from the classical (e.g., Plato, Montaigne, Kierkegaard, and Nietzsche) to the contemporary (e.g., Adorno, Derrida, Eco, and Nussbaum). Readings will range from the classical (e.g., Plato, Montaigne, Kierkegaard, and Nietzsche) to the contemporary (e.g., Adorno, Derrida, Eco, and Nussbaum). (On demand)

PHIL 3340. Business Ethics. (3) Ethical problems confronting business as a social institution and individuals in business. Application of ethical theory to business institutions and practices, internal exchanges of business (e.g., hiring, promotions, working conditions, employer/employee rights and duties) and external exchanges (e.g., product safety, environment, depletion, marketing, advertising.) Emphasis is on the role of critical thinking about and in business. (On demand)

PHIL 3380. Internship in Applied Ethics. (3) Prerequisite: Declared philosophy major or minor; at least Junior standing; selection by department. Field experience includes on-site visits to host companies, corporations, or agencies to investigate ethics codes, policies, culture, and practices. Background ethics research on ethics challenges facing the host organization today. Final reports evaluated by faculty advisor and shared with the host organization. (Fall, Spring, Summer with Permission)

PHIL 3390. Topics and Ethics/Aesthetics. (3) Specific topics in Ethics/Aesthetics. May be repeated for additional credit with the approval of the Department. (On demand)

PHIL 3410. Knowledge and Reality. (3) An examination of interrelated issues concerning belief, justification, knowledge, and existence and the implications of these for broader philosophical issues. "Nipper's" issues may include: What is the source of our beliefs? How do these sources affect our determinations of what fundamentally exists and what those things are like? How do our assumptions about what exists affect the objects and methods of knowing? When do beliefs become knowledge? Are there some things about the world that we cannot know about? Broader issues may include: What kind of thing is a mind or a self? How does such a thing fit into a natural world? What can non-human animals or computers tell us about intelligence? In what sense can collective entities engage in intentional behavior? (Yearly)

PHIL 3420. Philosophy of Language. (3) An inquiry into the nature of language and its use in actual practice. Discussion will focus on theories of meaning and their relations to the fields of logic and linguistics, and will address special topics such as linguistic creativity and linguistic violence. (Yearly)

PHIL 3430. Mind, Cognition, and Behavior. (3) An exploration of epistemological, metaphysical, and ethical questions concerning the mind. The main focus is on the possibility of integrating classic philosophical perspectives with contemporary research in cognitive science. Topics include: the descriptive/normative relation, the connection between philosophy and science, the plausibility of the mind and/or brain as a computational, symbol-manipulating system, including cases in which ethical consequences emerge from this orientation, and other topics such as consciousness, free will and determinism, logic and language, emotion and reasoning, and rationality. (Yearly)

PHIL 3510. Advanced Logic. (3) Advanced systems of logic, with emphasis upon symbolic logic and formal systematic characteristics such as axiomatics and proof techniques. (On demand)

PHIL 3520. Philosophy of Science. (3) Questions concerning scientific knowledge and methods and their relation to technology, metaphysics, history/sociology, and interdisciplinary connections. "Science" is construed broadly to imply a connection with all systematic inquiry, either past or present, into natural or social questions. Particular topics may include the nature of theories, models, observations, predictions, and the conditions of progress. (On demand)

PHIL 3530. Philosophy of Religion. (3) Cross-listed as RELS 3242. Philosophical implications of religious experience including the definitions, development, and diverse forms of the problems of belief and reason in modern thought. (On demand)

PHIL 3590. Topics and Knowledge/Language. (3) Specific topics in the Knowledge/Language. May be repeated for additional credit with the approval of the department. (On demand)

PHIL 3600. Practicum in Philosophy. (1-3) Prerequisite: permission of the department. Directed individual study involving the student and instructor in rethinking and reworking some major problems in the teaching of undergraduate philosophy, including interaction with a particular course, usually PHIL 1105, 2101/2102, or 2105, in the preparation,
PHIL 3605. Research Methods and Publication. (3) Permission of the instructor required. Individual instruction in current methods of research in philosophy through participation in major research project. No more than six hours may apply towards the major in Philosophy. (Fall, Spring with Permission)

PHIL 3610. Independent Study. (1-3) Prerequisite: permission of the department. Directed individual study of a philosophical issue of special interest to the student. May be repeated for additional credit as the topics vary and with departmental approval. No more than six hours may apply toward the major in Philosophy. (Fall, Spring with Permission)

PHIL 3620. Senior Seminar. (3) (O, W) This capstone course provides an opportunity to develop or secure a philosophical literacy for those who will end their studies of philosophy with a B.A. and for those who are interested in pursuing a graduate degree in philosophy or a related field. The course will thus help advanced students integrate their studies in philosophy, pursue their individual philosophical interests in more depth, and study philosophical texts or issues that they have not yet had a chance to cover but that are important to a well-rounded education in philosophy. The focus in the seminar will be on contemporary philosophy, though a research project may involve more historical figures or issues. (Yearly)

PHIL 3791. Honors Thesis. (3) Prerequisite: permission of the department. Individual or group inquiry into selected philosophic problems. Exposition and discussion of the results. (Fall, Spring with Permission)

PHIL 3810. Social and Political Philosophy. (3) Examination of basic concepts involved in understanding the nature and structure of political and social formations. Issues may include topics such as justice, human rights, the nature of political power, and the relations between individuals and political/social institutions. Readings from historical and/or contemporary sources, and may include figures such as Plato, Hobbes, Marx, Rawls, Arendt, Foucault and Butler. (Yearly)

PHIL 3820. Feminist Philosophy. (3) Cross-listed as WMST 3247. Overview of feminist critiques of the philosophical canon, contemporary feminist work on philosophical topics (e.g., feminist epistemology, feminist aesthetics, etc.), and philosophical work on topics such as gender, sexuality, and intersectionality. Critical race, postcolonial, and global feminisms will also be studied. (Yearly)

PHIL 3830. Philosophy and Race. (3) Cross-listed as AFRS 3820. This course both examines the role of the concept of race in the Western philosophical canon, and uses current philosophical texts and methods to examine Western discourses of race and racism. Issues such as whiteness, double consciousness, the black/white binary, Latino identity and race, ethnicity, mixed-race identity, and the intersection of race with gender and class will also be examined. (Alternate Years)

PHIL 3910. Philosophy of War and Peace. (3) Cross-listed as LBST 2101-H01. This course focuses on the conceptual and historical aspects of violence, terrorism, war, non-violence, justice, and the economic motivations and results, both intended and unintended, associated with these phenomena. (On demand)

PHIL 3920. Philosophy of Technology. (3) Examination of basic concepts and controversies in philosophical discussions of technology. Issues may include relations between technology and nature (and/or human nature), technological determinism, the prospects for intelligent and/or democratic control of particular technologies, and normative issues such as technological systems of social control. (On demand)

PHIL 3930. Philosophy of Body. (3) Opportunity to explore the implications of the Eastern and Western philosophical literature on what the body means to individuals and societies. Philosophical readings about the body’s relationship to the mind, politics, happiness, social interaction, and education will be explored through lecture, discussion, and writing. (On demand)

PHIL 3940. Philosophy of Education. (3) Exploration of classic Western approaches to education and the contemporary moral problems faced by America’s schools. Issues to be considered are the effect of race, class, and gender on school culture and teacher preparation. (On demand)

PHIL 3990. Topics and Identity/Society. (3) Specific topics in Identity/Society. May be repeated for additional credit with the approval of the department. (On demand)

PHIL 4050. Advanced Topics in Philosophy. (3) Specific topics in philosophy taught at an advanced level. May be repeated for additional credit with the approval of the department. (On demand)

PHYS 1000. New Student Seminar. (1) Prerequisite: Student must be a declared Physics major. An introduction to the different disciplines within physics, professional opportunities available to physics majors in industry and academia, research interests of the department, and opportunities for student research in the department. This course is required for all physics majors. Students will give a talk about physics to their peers and complete a plan of study for their undergraduate degree. (Fall)

PHYS 1101. Introductory Physics I. (3) First semester of a two semester algebra-based introductory sequence in physics. Introduction to the fundamental principles of natural phenomena. Topics include
cinematics and dynamics of particles, momentum, work, energy, conservation laws, and mechanics of rigid bodies. A knowledge of basic algebra and trigonometry is needed for this course. Three lecture hours each week. (Fall, Spring, Summer)

PHYS 1101L. Introductory Physics I Laboratory. (1)
Pre- or Corequisite: PHYS 1101. Laboratory investigations illustrating experimental techniques and fundamental principles of natural phenomena. Three laboratory hours each week. If a student has completed PHYS 2101L with a grade of C or above in a previous semester, the student is exempted from taking PHYS 1101L. (Fall, Spring, Summer)

PHYS 1102. Introductory Physics II. (3)
Prerequisite: PHYS 1101 with a grade of C or above. Second semester of the algebra-based introductory sequence in physics. An introduction to topics in electromagnetism, optics, and nuclear physics. A knowledge of basic algebra and trigonometry is needed for this course. Three lecture hours each week. (Fall, Spring, Summer)

PHYS 1102L. Introductory Physics II Laboratory. (1)
Prerequisite: PHYS 1101L (or 2101L). Pre- or corequisite: PHYS 1102. A continuation of PHYS 1101L. Three laboratory hours each week. If a student has completed PHYS 2102L with a grade of C or above in a previous semester, the student is exempted from taking PHYS 1102L. (Fall, Spring, Summer)

PHYS 1130. Introduction to Astronomy. (3)
Historical beginnings of astronomy. Motions of celestial bodies. Introduction to space science. The solar system. Optical and radio astronomy. Structure and evolution of stars. Galaxies, cosmology. Three lecture hours each week. (Fall, Spring, Summer)

PHYS 1130L. Introduction to Astronomy Laboratory. (1)
Prerequisite or corequisite: PHYS 1130. Experimental investigations relating to the acquisition of and interpretation of astronomical data. One three-hour laboratory each week. (Fall, Spring, Summer) (Evenings)

PHYS 1201. Sports and Physics. (3)
Fundamental physics concepts will be introduced and discussed using only sports-related applications, primarily golf, baseball/softball, and auto racing. Specific physics concepts include forces, Newton’s Laws, conservation of energy, conservation of linear momentum, conservation of angular momentum, Bernoulli’s principle for fluid flow, centripetal force, vibrations and sound, and heat transfer. In addition, an understanding of materials characteristics will be important to the discussions. (Fall, Spring)

PHYS 1201L. Sports and Physics Laboratory (1)
Corequisite: PHYS 1201. Experimental investigations illustrating the physical principals related to sports activities. Laboratories will include analysis of the physics involved in activities such as basketball, baseball, golf, tennis, soccer, hockey, and football. (Fall, Spring)

PHYS 1202. Introduction to Physics in Medicine. (3)
An introductory level course that covers the basics physics principles behind technologies currently used in medicine. The course will examine topics in surgical instrumentation and medical imaging (e.g., the use of lasers in medicine, MRI, ultrasound, CT scanning, and nuclear medicine.) Three lecture hours each week. (Fall)

PHYS 1203. Physics of Music. (3)
Fundamental physics concepts will be introduced related to the production and interpretation of sound in musical instruments and the human voice. Specific concepts include forces, kinematics, energy, pressure, simple harmonic motion, fluids, traveling and standing waves, and acoustics. Relationship of physical principles to notes, scales, melody, harmony, rhythm, loudness, pitch, timbre, musical instruments, room acoustics, and recording. (Spring)

PHYS 1203L. Physics of Music Laboratory. (1)
Corequisite: PHYS 1203. Laboratory component covering topics introduced in PHYS 1203. Laboratories will include the design and construction of wind and string instruments and percussion. (Spring)

PHYS 2101. Physics for Science and Engineering I. (3)
Prerequisite: MATH 1241 with a grade of C or above. First semester of a two-semester calculus-based introductory sequence in general physics. Topics include kinematics and dynamics of particles, momentum, work, energy, conservation laws, simple harmonic motion, and mechanics of rigid bodies. Three lecture hours each week. (Fall, Spring, Summer)

PHYS 2101L. Laboratory I. (1)
Pre- or corequisite: PHYS 2101. Experiments selected from motion on an inclined plane, circular motion, momentum and energy in collisions, torques, and conservation laws. Use of the computer for organizing, graphing and analyzing data. Two laboratory hours each week. If a student has completed PHYS 1101L with a grade of C or above in a previous semester, the student is exempted from taking PHYS 2101L. (Fall, Spring, Summer) (Evenings)

PHYS 2102. Physics for Science and Engineering II. (3)
Prerequisites: PHYS 2101 and MATH 1242, both with a grade of C or above. Second semester of the calculus-based introductory sequence in general physics. Topics include electric charge, electric fields, and magnetic fields. Three lecture hours each week. (Fall, Spring, Summer)

PHYS 2102L. Laboratory II. (1)
Pre- or corequisite: PHYS 2102. A continuation of PHYS 2101L. Experiments selected from series and parallel circuits, RC circuits, EMF and terminal potential difference, electromagnets, and magnetic induction. Two laboratory hours each week. If a student has completed PHYS 1102L with a grade of C or above in a previous semester, the student is exempted from taking PHYS 2102L. (Fall, Spring, Summer) (Evenings)
PHYS 3000. Topics in Physics. (1-4) Prerequisite: Permission of department. Special topics which are introductory in nature. May not be applied toward the degree requirements for "additional hours at the 3000/4000 level" without approval of the departmental Undergraduate Studies Committee. May be repeated. (On demand)

PHYS 3101. Topics and Methods of General Physics. (3) Prerequisites: PHYS 2102 and MATH 1242 both with a grade of C or above. Covers additional topics in physics at an introductory level. Subjects will include gravitation, angular momentum, wave motion, geometrical and physical optics, electromagnetic waves, fluid dynamics, and thermodynamics. An emphasis is placed on developing additional background and problem solving skills necessary for students to succeed in upper division physics courses. (Spring)

PHYS 3112. Classical Mechanics I. (3) Prerequisites: PHYS 3101 (or EGR 2112) and MATH 2171, both with a grade of C or above. Pre- or corequisite: MATH 2241. Topics include Newtonian mechanics, kinetic energy, work and potential energy, harmonic oscillators, projectiles and charged particles without and with viscous friction, linear and angular momentum, vector algebra and coordinate transformations, Taylor expansions, mathematical analysis using complex numbers, Fourier series analysis of vibrational motions. (Fall)

PHYS 3141. Introduction to Modern Physics. (3) Prerequisite: PHYS 2102 (or PHYS 1102) and MATH 1241, both with a grade of C or above. Pre- or corequisite: MATH 1242. Topics include: Special relativity, quantization of charge, light, and energy, the nuclear atom, wavelike properties of particles, introduction to nuclear reactions and applications, introduction to solid state physics, and introduction to particle physics. (Fall)

PHYS 3151. Thermal Physics. (3) Prerequisites: PHYS 3141 and PHYS 3101, both with a grade of C or above, CHEM 1251 and 1251L, MATH 2241. An introduction to heat, thermodynamics, kinetic theory, and statistical physics. Topics include classical thermodynamics, Maxwell-Boltzmann, Fermi-Dirac and Bose-Einstein distributions. Three lecture hours a week. (Spring)

PHYS 3160. Astrophysics I (Stellar Astrophysics). (3) Prerequisites: PHYS 3141 and MATH 2171 or permission of instructor. An introduction to stellar structure and evolution. Topics covered include observational techniques, the interaction of light and matter, spectral classification, stellar structure and energy transport, nuclear energy sources, evolution off the main sequence, variable stars, and stellar remnants. (Spring) (Odd years)

PHYS 3161. Astrophysics II (Interstellar Matter and Galaxies). (3) Prerequisites: PHYS 3141 and MATH 2171 or permission of instructor. An introduction to the structure and contents of galaxies. Topics covered include the interstellar medium, star formation, galactic kinematics, galactic structure and evolution, active galaxies, and cosmology. (Fall), (Odd years)

PHYS 3210. Introduction to Computational Physics. (3) Prerequisites: PHYS 2102 and MATH 2171, both with a grade of C or above. Building on elementary concepts in physics, an introduction to how computers are used to solve physics problems is given. Skills in programming will be developed in the context of applying computational methods to calculate a variety of physical properties found in mechanics and electrodynamics. Techniques for simulating and visualizing the behavior of systems ranging in complexity from a single particle, to a few, to many particles are introduced. Also covered are methods for data analysis, including fitting and plotting results graphically that best highlight physical relationships between variables. (Spring)

PHYS 3220. Mathematical Methods in Physics. (3) Prerequisites: PHYS 2102 and MATH 2241, both with a grade of C or above. Topics include distribution functions, solutions to ordinary and partial differential equations, boundary value problems. Fourier analysis, vectors and matrices, vector calculus, and complex variables. (Fall)

PHYS 3282. Advanced Laboratory in Modern Physics. (3) (O, W) Prerequisites: PHYS 3101 with a grade of C or above. Selected laboratory work in areas such as atomic spectra, radioactive decay, and the interaction of radiation with matter. Emphasis on development of sound laboratory techniques, methods of data analysis, oral communication of results, and the writing of formal laboratory reports. Three hours of laboratory each week. (Spring)

PHYS 3283. Advanced Laboratory in Classical Physics. (3) (W) Prerequisites: PHYS 2102 and 2102L, both with a grade of C or above. Selected laboratory work in areas such as mechanics, electricity and magnetism, acoustics and thermal physics. Topics are chosen for their relation to important principles and techniques, or for their historical significance. Emphasis on development of sound laboratory techniques, methods of data analysis, and the writing of formal laboratory reports. Three hours of laboratory each week. (Fall)

PHYS 3400. Internship in Community Education and Service. (3) Prerequisites: Junior standing, acceptance into the internship program and approval by the Physics department. A project oriented, service-learning internship with cooperating community organizations. Does not count as credit toward departmental requirements in physics. May be repeated once with permission of the department. Graded on a Pass/No Credit basis. (On demand)

PHYS 3590. Physics Cooperative Education and 49ership Experience. (O) Prerequisites: Completion of 30 credit hours at UNC Charlotte (transfer students must complete 12 credit hours), a minimum GPA of a 2.0 for 49ership/Service Learning 49ership or 2.5 for Co-op students, good standing with the University and
PHYS 3900. Undergraduate Research. (1-3)
Prerequisites: PHYS 3282 and 3283 and permission of the Department Undergraduate Studies Committee. Independent research experience under the supervision of faculty member. May be repeated once with permission of the department. Up to three credit hours of PHYS 3900 may be applied toward the physics degree requirement of "additional PHYS hours at the 3000/4000 level" with approval of the Departmental Undergraduate Studies Committee. (On demand)

PHYS 4000. Selected Topics in Physics. (1-4)
Prerequisite: Permission of department. Advanced special topics. May not be applied toward the degree requirements for "additional hours at the 3000/4000 level" without approval of the departmental Undergraduate Studies Committee. May be repeated. (On demand)

PHYS 4110. Introduction to Biomedical Optics. (3)
Prerequisites: PHYS 3141 and MATH 2171 both with a grade of C or above. Pre- or corequisite: PHYS 3121 or MEGR 2144. This course will cover the basic principles underlying tissue optics, laser-tissue interactions, and optical imaging, microscopy, and spectroscopy for medical applications. (Spring)

PHYS 4140. Nuclear Physics. (3)
Prerequisites: PHYS 3141 and MATH 2171, both with a grade of C or above. Pre- or corequisite: PHYS 3121 (or MEGR 2144). A study of the nucleus, radioactivity, nuclear reactions, fission, fusion, interactions of radiation with matter and measurement of radiation. (Spring)

PHYS 4181. Solid State and Semiconductor Physics Laboratory. (3) Prerequisite: PHYS 4241 or MEGR 3131 or permission of instructor. Laboratory in solid state physics and semiconductor device physics, including electrical and photoconductivity; fluorescence, photoluminescence and Raman Scattering; semiconductor device characteristics; superconductivity; and the Hall Effect. Six laboratory hours each week. (On demand)

PHYS 4222. Classical Mechanics II. (3)
Prerequisites: PHYS 3121 and MATH 2241. Continuation of PHYS 3121. Topics include Lagrangian mechanics, two-body central force problems, coupled oscillators and normal modes, Hamiltonian mechanics, non-inertial frames, rigid body motion. (Spring)

PHYS 4231. Electromagnetic Theory I. (3) Prerequisites: PHYS 3121 (or MEGR 2144), MATH 2171, and PHYS 3220 (or MATH 2242), all with a grade of C or above. The first course of a two-semester sequence. Topics covered include vector analysis, electrostatics and electric fields in matter. Three lecture hours each week. (Spring)

PHYS 4232. Electromagnetic Theory II. (3) Prerequisites: PHYS 4231 with a grade of C or above. A continuation of PHYS 4231. Topics covered include magnetostatics, electrodynamics, electromagnetic waves, potentials and fields. Three lecture hours each week. (Fall)

PHYS 4241. Quantum Mechanics I. (3) Prerequisites: PHYS 3141, PHYS 3121 (or MEGR 2144), PHYS 3220 (or MATH 2241) and MATH 2171, all with a grade of C or above. Topics include blackbody radiation, solutions of the time-independent Schrodinger equation, unbound and bound states, the infinite square well, the harmonic oscillator, the hydrogen atom, spin operators, and the Stern-Gerlach experiment. (Fall)

PHYS 4242. Quantum Mechanics II. (3) Prerequisite: PHYS 4241 with a grade of C or above. A continuation of PHYS 4241. Topics include: perturbation theory, atoms in external electric and magnetic fields, the Stark and Zeeman effects, the WKB approximation, selection rules for electromagnetic radiation, scattering theory, multielectron atoms, electrons in solids, Bose-Einstein and Fermi-Dirac distributions. (Spring)

PHYS 4271. Waves and Optics. (3) Prerequisite: MATH 2171 with a grade of C or above. Corequisite or pre-requisite: PHYS 3121 (or MEGR 2144). Topics include ray analysis of common optical elements, wave properties of light, the superposition of periodic and non-periodic waves, and selected topics from geometrical and physical optics. (Fall)

PHYS 4281. Advanced Laboratory in Modern Optics. (3)(W) Prerequisites: PHYS 3141 and PHYS 3121 (or MEGR 2144) both with a grade of C or above. Selected experiments on topics such as fiber optics, interferometry, spectroscopy, polarization, and holography. Emphasis on the development of sound laboratory techniques, methods of data analysis, and the writing of formal laboratory reports. Six hours of laboratory each week. (Spring, Even years)

PHYS 4800. Investigations. (1-2) Prerequisite: Junior standing. An independent investigation on a topic approved by the department Undergraduate Studies Committee. May be repeated for up to four hours credit. No more than two credit hours may be applied toward the degree requirements for "additional hours at the 3000/4000 level." (On demand)
POLITICAL SCIENCE (POLS)

Course offerings, including introductory courses, are divided into the following major subfields: American Politics and Public Administration, Comparative and International Politics, Political and Legal Philosophy, and Research and Practice of Political Science.

American Politics and Public Administration

POLS 1110. American Politics. (3) Introduction to the role of the President, Congress, Supreme Court, and national administrative agencies in the American political system. Relationship between the American people and their political institutions with emphasis on political culture, the electoral process, political parties, interest groups, and political communication. (Fall, Spring, Summer)

POLS 1173. Political Science Learning Community Freshman Seminar. (3) Prerequisite: Admission to the Political Science Learning Community and permission of instructor. The purpose of this course is to introduce the entering Political Science major to the concepts and tools necessary for studying politics in general and the discipline of political science in particular. The student will learn some critical thinking tools, on-line library skills, and other aspects of political science that will enable the student to more easily negotiate other political science courses. There will be a service component to this course and the possibility of internships. (Fall)

POLS 2120. Introduction to Public Policy. (3) Provides an overview of the policy process in the U.S. focusing on how public problems arise, how they get on the agenda of government, how and why the government responds or fails to respond, defining public policy, explaining how it is made, and who makes it. (Yearly)

POLS 3010. Topics in American Politics or Public Administration. (1-4) An intensive study of a topic in American politics or public administration. The particular topic investigated may vary from semester to semester, and a student may take more than one course under this number. (On demand)

POLS 3103. Public Opinion. (3) A study of attitude and opinion measurement with emphasis on the techniques of survey research and public opinion polling and conservative and liberal tendencies in American public opinion and society. (Yearly)

POLS 3104. Mass Media. (3) An examination of the relationship of mass media to politics and government. Government regulation of the media and how the mass media shape political information and behavior. (Yearly)

POLS 3105. Voting and Elections. (3) Psychological, sociological, and political variables that influence voting behavior and that affect electoral stability and change with emphasis on studies derived from survey research. (Yearly)

POLS 3108. Social Movements and Interest Groups. (3) Analysis of the nature of social movements and interest groups and their role in the American political system. Emphasis on membership recruitment and mobilization, campaigns, lobbying, and influence on parties, public opinion, and public policy. Evaluation of the extent to which these organizations enhance the voices of ordinary citizens versus those of corporations and citizens of high social status. (Yearly)

POLS 3109. Political Parties. (3) Analysis of the role of political parties in the American political system. Emphasis on party organizations, nominations, campaigns, interrelation with interest groups and social movements, and the role of parties in the executive, legislative, and judicial arenas. (Yearly)

POLS 3111. The Congress. (3) Analysis of the role of the Congress in the American political system and its relationships with the other branches of government. Recruitment and socialization of congressmen, the committee system, and roll call analysis. (Yearly)

POLS 3112. The Presidency. (3) Analysis of the role of the Presidency in the American political system and its relationships with the other branches of government. Strategies of presidential nomination and election, the sources and indicators of presidential power, and how those who have held the office have shaped it and been shaped by it. (Yearly)

POLS 3114. Constitutional Law and Policy. (3) Development of American constitutionalism (especially federalism and the separation of powers) with major emphasis on constitutional law as a form of public policy and the U.S. Supreme Court as a policy maker. (Yearly)

POLS 3115. Civil Rights and Liberties. (3) Utilizes public policy analysis to illuminate judicial decisions and opinions relating to contemporary civil rights and liberties. (Yearly)

POLS 3116. Judicial Process. (3) Introduction to the nature and functions of law; survey of Supreme Court decision making. (Yearly)

POLS 3119. State and Local Government. (3) An introduction to state and local governments, politics, and policies in the United States. Particular attention is paid to state and local government in North Carolina. (Yearly)

POLS 3121. Urban Politics and Policy. (3) Political analysis of a variety of public policy problems in urban areas and proposals to solve them. Attention will be paid to both the substance of the urban policy problem and ways to evaluate alternative solutions. (On demand)

POLS 3123. Urban Political Geography. (3) Cross-listed as GEOG 3110. Spatial organization of metropolitan America. How metropolitan residents organize space into territorial units and the human, social, and political ramifications of that organization. Spatial consequences of the most common modes of
political, administrative, and territorial organization. (On demand)

**POLS 3124. U.S. Domestic Policy. (3)** Examination of the processes of and influences on policy making, including goals and objectives of current U.S. domestic policy. Focus on major policy areas; may include such topics as fiscal and monetary policy, education, transportation, management of national economy, and agriculture, among others. (On demand)

**POLS 3125. Health Care Policy. (3)** An overview of the development and current functioning of U.S. health care system and public policies regarding the organization, delivery and financing of health care at the federal, state, and local levels. (On demand)

**POLS 3126. Administrative Behavior. (3)** The role of the administrator and public bureaucracy in modern democratic society, with emphasis on the interplay of forces created by executives, legislators, political parties, and interest groups. (Yearly)

**POLS 3128. Politics and Film. (3)** Examination of the influence and role of film in American politics. Movies provide important cues about cultures, values, and society, and affect how people perceive or view their environment. Explores and analyzes the images and messages conveyed about American politics, and develops understanding of the role of film in American politics. Requires viewing films in class, discussion, and writing about the films. (On demand)

**POLS 4110. North Carolina Student Legislature. (3)** (O, W) Prerequisite: permission of instructor. Practicum including workshops, seminars, and guest speakers on legislative process and research, parliamentary procedure, and resolution and bill drafting; participation in an interim council debate at one of the member campuses for one weekend each month during the semester and participation in the NCSL annual session in Raleigh. May be repeated for credit. (Spring)

**Comparative and International Politics**

**POLS 1130. Comparative Politics. (3)** Introduction to political comparison among nations. Diverse geographical emphases, including Latin America, Europe, Asia, and Africa. Not taught as a writing intensive course. (Fall, Spring, Summer)

**POLS 1150. International Politics. (3)** Introduction to the analysis of politics among nations: Material and psychological sources of national power; the role of law, force, and diplomacy in world politics; problems of peace and disarmament; and international organization. Not taught as a writing intensive course. (Fall, Spring, Summer)

**POLS 3030. Topics in Comparative or International Politics. (1-4)** An intensive study of a topic in comparative or international politics. The particular topic investigated may vary from semester to semester, and a student may take more than one course under this number. (On demand)

**POLS 3132. Comparative Public Policy. (3)** Examination of the policy process and policy outcomes in the United States and other countries. Analyzes policy areas in depth to determine the role that variations in policy culture and political institutions play in shaping policy choices. Examines the possibility and limitations of transferring policy innovation from one polity to another. (On demand)

**POLS 3133. Middle East Politics (3)** Political development of Middle Eastern states from the period of European colonization to today. Topics include Arab nationalism, Islamism, the Palestinian-Israeli conflict, democratization, oil and economic development and regional security. (Yearly)

**POLS 3135. Terrorism. (3)** Addresses four basic questions: (1) What is terrorism? (2) Why does it occur? (3) How does terrorism network? (4) What are the legal, political, and military coping strategies for terrorism? Emphasis on building an understanding of the nature and root causes of terrorism, and understanding the behavioral and psychological framework of terrorism and responses to it. (Yearly)

**POLS 3141. European Politics. (3)** Comparative analysis of selected European governments including Great Britain, France, Germany, and Italy. (On demand)

**POLS 3143. African Politics. (3)** A comparative perspective on politics in Sub-Saharan Africa and on the performance of post-independence political systems there in terms of national and international integration, economic challenges, and efforts to create stable and democratic civilian regimes. (Yearly)

**POLS 3144. Latin American Politics. (3)** Cross-listed as LTAM 3144. Comparative overview of political and socio-economic change in Latin America from the colonial period to the present. Primary emphasis on Latin American politics in the twentieth century, competing political ideologies, socio-economic issues, international political economy, and internal political change. (Yearly)

**POLS 3148. Chinese Politics. (3)** The origins, development, and maintenance of the Chinese political system. The organization and function of the Chinese Communist Party (CCP) and other political groups. The impact of tradition on contemporary Chinese politics. (Yearly)

**POLS 3151. International Political Economy. (3)** Cross-listed as INTL 3151. An analysis of the political dynamics of economic relationships among countries. Attention is focused on the political aspects of monetary, trade, and investment relationships, and the difficulties involved in coordinating policy and maintaining effective international management. (On demand)

**POLS 3152. International Organizations. (3)** An analysis of the development and functions of formal and informal organizations that govern international politics and markets, including the United Nations
system, economic and non-governmental organizations, and regional institutions. *(On demand)*

**POLS 3153. European Union. (3)** An analysis of the European Union (EU) from historical, political, and economic perspectives. Emphasis on the institution's actors (especially states and interest groups) and policies of the EU as well as the changing relationship between the EU and its major trading partners such as the U.S. *(On demand)*

**POLS 3154. Cyberspace and Politics. (3)** Examination of the advent of information technologies and digital communication in the global community and the impact of these changes on multi-level politics--international, regional, national, and sub-national. Four major themes are: exploration of the digital world, cyberspace governance and public policy, electronic government and virtual citizenship, and cyberspace expansion and global reach. Taught mainly as a web-based course. *(Yearly)*

**POLS 3155. Latin American Political Economy.** Cross-listed as LTAM 3154. Intersections of politics and economics in Latin America, focusing on the efforts to foster economic development in the region. Emphasis on post-World War II era. Includes issues such as debt management, dependency theory, impact of free market theories, and the power of labor movements. *(Yearly)*

**POLS 3157. American Foreign and Defense Policy. (3)** Examines constitutional provisions for foreign policy in the United States, analyzes the formulation and implementation of American foreign policy, and surveys key defense and security policy issues facing the United States. *(Yearly)*

**POLS 3159. Diplomacy in a Changing World. (3)** Cross-listed as INTL 3131. Diplomacy, a means to resolve disputes between sovereign states short of war, will be analyzed through case studies drawn from historical context and through a survey of contemporary crises. The American diplomatic process will also be reviewed with particular attention to how policy is shaped, how an embassy functions and how Americans train for the professional diplomatic service. *(Yearly)*

**POLS 3162. International Law. (3)** Historical and political analysis of the sources and development of international law. Particular attention is given to the role of modern international law in the relations of nation-states and its application to contemporary global problems. *(Yearly)*

**POLS 3163. Introduction to Model United Nations. (3) (O, W)** Prerequisite: permission of the instructor. Preparation for and participation in the Model United Nations (simulation of the United Nations) for students who have not participated in this simulation previously. Includes study of the background of countries to be represented; the history, structure and procedures of the United Nations; drafting of resolutions and position papers; public speaking and caucusing; participation in regional MUN events. *(Spring)*

**POLS 3164. U.S.-Latin American Relations. (3)** Cross-listed as LTAM 3164. Addresses the always-complicated and often-confictive relationship between Latin American and the United States. Particular attention to critical contemporary issues such as the drug trade, immigration, international trade, humanitarian aid and U.S. policy toward Cuba. *(Yearly)*

**POLS 3165. East Asia in World Affairs. (3)** Examines the political factors governing diplomatic relations, national order, economic trade, and national security in East Asia. Emphasis on China, Taiwan, Hong Kong, Japan, the Korean peninsula, and the Philippines. *(Yearly)*

**POLS 3166. Politics of the Islamic World. (3)** Political development of and current political trends within countries of North and East Africa, the Middle East, Central Asia, and South and Southeast Asia that make up the Islamic World. Topics include the diverse body of Islamic political thought, manifestation of Islamic political thought in contemporary countries and movements, a discussion of how Islamic societies handle diversity and the issue of democratic rule, and the political development of the growing Muslim minority community in the West. *(Yearly)*

**POLS 3167. U.S.-Latin American Relations. (3)** Cross-listed as AFRS 4105. This course examines Africa’s relations with external powers (including Europe, the United States, and China), cooperation among African countries, the role of non-state actors in African conflicts, and U.S. policy toward the continent. *(Yearly)*

**POLS 3250. Political Sociology. (3)** Cross-listed as SOCY 3250. Prerequisite: SOCY 1101. Sociological analysis of the relationship between social, economic and political systems. Focuses on power relations in society and its effects on the distribution of scarce resources. Topics covered may include: theories of power and the nation state, political participation and voting, religion and politics, the comparative welfare state, media and ideology, the global economy, war and genocide, revolutions, and social movements. Not open to students who have credit for SOCY 3251 or POLS 3251. *(Yearly)*

**POLS 3251. Political Sociology. (3) (O)** Cross-listed as SOCY 3251. Prerequisite: SOCY 1101. Sociological analysis of the relationship between social, economic and political systems. Focuses on power relations in society and its effects on the distribution of scarce resources. Topics covered may include: theories of power and the nation state, political participation and voting, religion and politics, the comparative welfare state, media and ideology, the global economy, war and genocide, revolutions, and social movements. Not open to students who have credit for SOCY 3250 or POLS 3250. *(Yearly)*

**POLS 4163. Advanced Model United Nations. (3) (O, W)** Prerequisite: POLS 3163, or the equivalent and permission of the instructor. Preparation for and
participation in the Model United Nations (simulation of the United Nations) for students who have completed POLS 3163 or the equivalent. Includes study of the background of countries to be represented; the history, structure and procedures of the United Nations; drafting of resolutions and position papers; public speaking and caucusing; participation in international MUN events. May be repeated for credit. (Spring)

**Political and Legal Philosophy**

**POLS 1170. Introduction to Political Philosophy. (3)** Survey course that includes an introduction to recognized major political thinkers such as Plato, Aristotle, Hobbes, Locke, Rousseau, and Marx. Included are other politically influential writers such as Confucius, Mary Wollstonecraft, and Martin Luther King. (Fall, Spring)

**POLS 3070. Topics in Political or Legal Philosophy. (3)** Analysis of a selected problem in contemporary political philosophy, legal philosophy, or in the history of political philosophy. Includes moral and ethical evaluation of political and social practices and institutions. Readings from classic texts or contemporary works. Topic for consideration changes from semester to semester. Course may be repeated with permission of instructor. (On demand)

**POLS 3171. History of Classical Political Philosophy. (3)** Major concepts and systems of political philosophy of Ancient Greece and Rome. (Fall)

**POLS 3172. African-American Political Philosophy. (3)** Cross-listed as AFRS 3179. Prerequisite: 3000 level course on Africa from AFRS, HIST, or POLS. Major competing ideologies in African-American political philosophy. (On demand)

**POLS 3173. History of Modern Political Philosophy. (3)** Major concepts and systems of western political philosophy from the 16th-19th century. (Spring)

**POLS 3175. Philosophy of Law. (3)** Philosophy underlying the legal system and the Anglo-American practice of law. Will usually include topics such as what is “law,” obligation to obey the law, liberty, privacy and tolerance, and criminal responsibility and punishment. (Yearly)

**POLS 3176. Fascism and Communism. (3)** The purpose of this course is to consider the philosophies of fascism and communism and those political theorists who contributed to these two twentieth-century movements. This course will also focus on the implementation of these theories in nations such as Italy, Germany, the Soviet Union, and China. (Fall)

**POLS 3177. Social and Political Philosophy. (3)** Cross-listed as PHIL 3810. Philosophical concepts involved in understanding and evaluating the basic structure of societies (e.g., economic, educational, legal, motivational, and political) including equality, fraternity, freedom, and rights. Relevance to contemporary social and political issues stressed.

Readings from classical and contemporary sources. (On demand)

**Research and Practice of Political Science**

**POLS 2220. Political Science Methods. (4) (W)** Prerequisites: Political Science major; at least one introductory POLS course and MATH 1100 or equivalent. This course builds the knowledge skills ability (KSA) of students, in other words increases their information literacy. Emphasis on how to do literature searches, write professional papers as political scientists, understand and calculate statistics, and manipulate data with computer statistical packages. Recommended to be taken before majors begin to take upper level courses. Three hours of lecture and one hour of computer laboratory per week. (Fall, Spring)

**POLS 3400. Internship in Political Science. (3-6)** Prerequisite: Permission of the department. Practical experience in politics by working for a party, campaign organization, political office holder, news medium, government agency, or other political organization. Minimum of 150 working hours for three hours credit; minimum of 300 working hours for six hours credit. No more than six credits may be received through this course. Graded on a Pass/No Credit basis. (Fall, Spring, Summer)

**POLS 3800. Independent Study. (1-3)** Prerequisite: Permission of the instructor. Supervised investigation of a political problem that is (1) of special interest to the student; (2) within the area of the instructor's special competence; and (3) normally an extension of previous coursework with the instructor. A student may take more than one course under this number but not more than three hours a semester. (Fall, Spring, Summer)

**POLS 4600. Senior Seminar. (3) (O, W)** Prerequisite: POLS 1110, POLS 1130, POLS 1150, and POLS 2220. Capstone course for majors only. Seminar style exploration of a selected topic in the discipline. Includes writing a research paper and presenting the results to the class. (Fall, Spring)

**POLS 4990. Senior Thesis. (3) (O, W)** Prerequisite: POLS 1110, POLS 1130, POLS 1150, and POLS 2220. The student completes an article-length research paper under the supervision of a member of the faculty. The paper must involve quantitative or other methods of modern political analysis. Restricted to majors. (Fall, Spring, Summer)

**PORTUGUESE (PORT)**

**PORT 1201. Elementary Portuguese I. (3)** Fundamentals of the Portuguese language, including speaking, listening comprehension, reading, and writing. (Fall)

**PORT 1202. Elementary Portuguese II. (3)** Prerequisite: PORT 1201 or permission of the department. Fundamentals of the Portuguese language, including speaking, listening
comprehension, reading, and writing. (Spring)  

PORT 2201. Intermediate Portuguese I. (3)  
Prerequisite: PORT 1202 or permission of the department. Review of grammar, with conversation and composition. (Fall)  

PORT 2202. Intermediate Portuguese II. (3)  
Prerequisite: PORT 2201 or permission of the department. Continued review of grammar, conversation, and composition. (Spring)  

PORT 3050. Topics in Portuguese. (1-3) (W) Course may be repeated with change of topic. (On demand)  

PORT 3201. Portuguese Grammar and Conversation. (3) Prerequisite: PORT 2202 or permission of the department. Review of Portuguese grammar and guided conversation on prepared topics. Emphasis on spoken Portuguese. (Fall)  

PORT 3202. Portuguese Grammar and Conversation. (3) Prerequisite: PORT 3201 or permission of the department. Review of Portuguese grammar and guided compositions on prepared topics. Emphasis on vocabulary, idiomatic expressions, and stylistics. (Spring)  

PSYCHOLOGY (PSYC)  

PSYC 1101. General Psychology. (3) A survey of the field including such topics as learning, emotions, motivation, personality, psychological testing, and abnormal behavior. Emphasis on psychology as a behavioral science. May be taken with or without the lab. All psychology majors and those who wish to apply this course as partial fulfillment of the University science and technology requirement must take PSYC 1101L during the same semester in which they take PSYC 1101. (Fall, Spring, Summer) (Evenings)  

PSYC 1101L. General Psychology Laboratory. (1) An introduction to laboratory equipment and procedures. Meets two hours per week. (May not be taken apart from the lecture portion of PSYC 1101 except by psychology majors and minors with permission of the department.) (Fall, Spring, Summer) (Evenings)  

PSYC 2101. Research Methodology I. (3)  
Prerequisites: Psychology major; and PSYC 1101 and STAT 1222 with grades of C or above. Pre- or corequisite: PSYC 1101L with a grade of C or above. Experimental, observational, and correlational methods of psychological research. Basic concepts of philosophy of science will also be discussed. (Fall, Spring, Summer) (Evenings)  

PSYC 2103. Research Methodology II. (3) (W)  
Prerequisites: Psychology major; and PSYC 2101 with a grade of C or above. Hands-on experience with experimental, observational, and correlational methods of psychological research. Communicating research results using APA Style is a major component of the course. Emphasis on methodology rather than content and applicability of methods to current topics in psychology. (Fall, Spring) (Evenings)  

PSYC 2112. Introduction to Behavior Modification. (4) Prerequisite: PSYC 1101. Methods and constructs of behavior modification, including the application of the methods to laboratory research. Three lecture hours and one two-hour laboratory period a week. (On demand)  

PSYC 2120. Child Psychology. (3) Prerequisite: PSYC 1101. Psychological development in infancy and childhood, including such topics as biological change, learning, thought, language, social relations, intelligence, and morality. (Fall, Spring, Summer)  

PSYC 2121. Adolescent Psychology. (3) Prerequisite: PSYC 1101. Developmental and psychological characteristics of adolescents, with emphasis on the developmental transitions, social contexts, and problems of adolescence. (Fall, Spring, Summer)  

PSYC 2124. Psychology of Adult Development and Aging. (3) Cross-listed as GRNT 2124. Psychological development through adulthood and old age. Emphasis on processes underlying continuity and change in adulthood, including personality and socialization, cognitive development, and the psychophysiology of aging. (Yearly)  

PSYC 2150. Psychology of Adjustment. (3) Prerequisite: PSYC 1101. The study of the process of adjustment and factors that may influence adaptation. Consideration is given to psychological reactions to critical problems encountered in modern life. Introduction to different approaches to intervention and treatment. (Fall, Spring)  

PSYC 2155. Psychological Approaches to Diversity. (3) This course examines processes and consequences of stereotyping of different cultures and demographic subgroups (e.g., disabled and racial/ethnic groups) and their social implications. (Spring)  

PSYC 2160. Introduction to Health Psychology. (3) Prerequisite: PSYC 1101. An introduction to the contributions of the discipline of psychology to the promotion and maintenance of health, the prevention and treatment of illness, and the improvement of the health care system. Topics include the role of stress and physiological factors in illness, chronic pain disorders and pain management, lifestyle and psychosocial influences on health, and the influence of illness of interpersonal relationships. (Fall, Spring, Summer)  

PSYC 2171. Introduction to Industrial/Organizational Psychology. (3) The study of people at work; what motivates people to work and what leads to satisfaction, alienation, or performance; how to lead others; the structure of an organization and processes of communication, decision making, and conflict; socialization through selection and training; measurement of individual contributions; the design of work itself; ways to change; and develop entire organizations. (Fall, Spring, Summer)
PSYC 3001. Topics in Psychology. (3) Prerequisite: Permission of the instructor. Examination of special psychological topics. May be repeated for credit as topics vary. (Fall, Spring, Summer)

PSYC 3002. Topics in Psychological Research. (3) (W) Prerequisite: Permission of the instructor. Examination of special psychological topics. Preparation of one or more APA-style research papers required. May be repeated for credit as topics vary.

PSYC 3110. Comparative Psychology. (3) Prerequisite: PSYC 1101. Animal and human behavior from a comparative point of view. Includes the study of methodology, and classification of behavior patterns, as well as the origin of these patterns. (Yearly)

PSYC 3111. Psychology of Learning. (3) Prerequisite: PSYC 1101. (Completion of PSYC 2103 is strongly recommended.) Major theories and empirical findings in the area of learning. (Yearly)

PSYC 3113. Physiological Psychology. (3) Prerequisite: PSYC 1101. The relationship of physiological systems to integrated behavior and an introduction to brain-behavior relationships. Emphasis on neural regulation of behavior. (Fall, Spring, Summer)

PSYC 3114. Motivation. (3) Prerequisite: PSYC 1101. Current theories and research in the area of motivation. Consideration is given to the role of emotion in human motives. (On demand)

PSYC 3115. Sensation and Perception. (3) Prerequisite: PSYC 1101. An introduction to the sensory and perceptual processes that provide the means to experience and make sense of the physical world in which we live. Topics include discussions of how sensory data are acquired, processed, and interpreted. (Yearly)

PSYC 3116. Human Cognitive Processes. (3) Prerequisite: PSYC 1101. Processes involved in such complex human behaviors as language (acquisition and usage), memory, and problem solving, with emphasis upon experimental findings and current theories. (Fall, Spring, Summer)

PSYC 3117. Hereditary Behavior. (3) Prerequisite: PSYC 1101. Genetic and environmental contributions to behavior and psychological processes. History of the nature-nurture issue in psychology; animal and human research methods; statistical analysis of behavior-genetic data; and the heritability of learning ability, intelligence, personality, and psychopathology. (Yearly)

PSYC 3118. Research Methods in Physiological Psychology. (4) Prerequisites: PSYC 1101 and permission of the instructor. Current laboratory techniques in physiological psychology, including basic surgeries, lesioning, stimulation, recording, and histology. Three lecture hours and one two-hour laboratory period a week. (On demand)

PSYC 3122. Cognitive and Language Development. (3) Prerequisites: PSYC 1101 and 2120. Theory and research on the development of thought and language in children, including such topics as theories of cognitive development, the development of perception, representation of knowledge, memory, language, and problem solving. (Alternate years)

PSYC 3123. Social and Personality Development. (3) Prerequisites: PSYC 1101 and 2120. Social and personality development of children, including such topics as infant social behavior, socialization practices, independence and achievement, aggression, sex-role development, and moral development. (Alternate years)

PSYC 3125. Older Worker and Retirement. (3) (W) Prerequisite: Permission of the instructor. Physical characteristics, personal attitudes, and structural factors affecting the employment of persons over 40. Topics include biological aging, myths and stereotypes about older workers, public policies, human resources practices, economics of retirement, and theories about career and life stages. (On demand)

PSYC 3126. Psychology of Women. (3) Cross-listed as WGST 3226. Prerequisite: PSYC 1101. Application of research in developmental, experimental, and clinical psychology to issues regarding women and gender. Includes such topics as gender-role development, gender differences in cognitive abilities and performance, psychological perspectives on women’s physical and mental health, and violence toward women. (Spring, Summer)

PSYC 3130. Social Psychology. (3) Prerequisite: PSYC 1101. The social behavior of individuals. Topics include interpersonal attraction and relationship development; attitude change; social conflict; social interaction; social perception; and social influence processes; general theories of social behavior; and research approaches. (Fall, Spring, Summer)

PSYC 3131. Forensic Psychology. (3) Prerequisite: PSYC 1101. This course provides an overview of the field of forensic psychology, including the history of the discipline, and legal and ethical issues such as criminal profiling, definition of “insanity,” eyewitness identification, and jury selection. (Fall, Summer)

PSYC 3135. Psychology of Personality. (3) Prerequisite: PSYC 1101. Current personality theories. Consideration given to psychoanalytic, physiological, trait and factor, the perceptual viewpoints in the light of contemporary research. (Fall, Spring, Summer)

PSYC 3136. Sexual Behavior. (3) Prerequisite: PSYC 1101. Explores the psychology of sexual behavior, including providing an overview of the major psychological theories, providing an understanding of the psychological factors that affect human sexual behavior, and examining current issues and controversies related to sexuality such as sexual dysfunction and sexual offenses. (Fall, Summer)
PSYC 3177. Positive Psychology. (3) Prerequisite: PSYC 1101. This course will examine the principal concepts, applications, and research paradigms of positive psychology in reference to various contexts such as everyday people, cross-cultural perspectives, adjustment to chronic illness, surviving natural disasters, terrorist attacks, and civil war. (Spring)

PSYC 3140. Basic Processes in Psychological Assessment. (3) Prerequisites: PSYC 1101, PSYC 1101L, and STAT 1222. (PSYC 2103 recommended.) Psychological testing, including scaling procedures, reliability and validity, correlational techniques used in test construction, a review of various kinds of psychological tests, and basic approaches to test interpretation. (Yearly)

PSYC 3151. Abnormal Psychology. (3) Prerequisite: PSYC 1101. A history of psychopathology. Case studies, differential diagnosis, psychological dynamics of abnormal behavior, including theoretical, clinical, and experimental contributions in the field. (Fall, Spring, Summer)


PSYC 3152. Introduction to Clinical Psychology. (3) Prerequisites: PSYC 1101 and PSYC 3151. This course provides an overview of the field of clinical psychology, including the theory and practice of discipline. (Spring)

PSYC 3155. Community Psychology. (3) Social forces, particularly within the context of organizations and/or communities, that affect the development of psychopathology and/or personal competency, with emphasis on preventing psychopathology and increasing competency. Topics include the concept of prevention; assessment of organizations, communities, and other environments; methods of instituting organizational and community change; evaluating the effects of community interventions; social policy analysis; and ethical issues involved in community work. (Yearly)

PSYC 3172. Psychology of Personnel: Employee Selection and Classification. (3) Prerequisite: PSYC 2171 or permission of instructor. Methods, techniques, and procedures used to select and classify employees. (Fall)

PSYC 3173. Psychological Bases of Training Programs. (3) Prerequisites: PSYC 1101 and 2171, or permission of instructor. Application of alternative theories about adult learning to the development and conduct of training programs in industry. Topics include how to develop training needs, a description of methods available to trainers such as programmed instruction and sensitivity training, and how to evaluate the effects of various training techniques. (On demand)

PSYC 3174. Organizational Psychology. (3) Prerequisite: PSYC 2171. Application of psychological principles to group and organizational levels of analysis, with emphasis on work teams and business organizations. Topics include group dynamics, teams and empowerment, organizational culture and diversity, and organization development and change. (Spring and Some Summers)

PSYC 3216. Introduction to Cognitive Science (3) Cross-listed as ITCS 3216. Prerequisite: Permission of the department. Interdisciplinary introduction to the science of the mind. Broad coverage of such topics as philosophy of mind; human memory processes; reasoning and problem solving; artificial intelligence; language processing (human and machine); neural structures and processes; and vision. (Spring, Alternate years)

PSYC 3313. Neuropsychology. (3) Prerequisite: PSYC 3113 or equivalent. Brain function and behavior, especially in individuals believed to be brain damaged (e.g., by stroke, Alzheimer's, or head injury); general principles of brain function and of human neuropsychology, including higher functions (e.g., memory and language); and neuropsychological assessment. (Yearly)

PSYC 3316. Cognitive Neuroscience. (3) Prerequisite: PSYC 3113 or 3116 or equivalent. Biological basis of consciousness and the neurobiology of mental processes by which we perceive, act, learn, and remember; representation of mental processes from electrophysiological and brain imaging techniques, clinical neurology, and computational science. (Yearly)

PSYC 3505. Practicum in Applied Psychology. (1-4) Prerequisites: Junior standing, permission of the instructor, and the Psychology department. Work in practical settings related to psychology under the supervision of a faculty member. May be repeated for credit with departmental permission. The student must have obtained approval in the semester preceding the semester in which the practicum is to be taken. Graded on a Pass/No Credit basis. (Fall, Spring)

PSYC 3806. Undergraduate Research Assistantship. (1-4) Prerequisites: Permission of instructor, Psychology major, and a GPA above 2.0. Assist faculty with current research projects. Exact duties will depend of hours enrolled and the needs of the instructor. May be repeated for credit. The student must obtain approval from the instructor listed in the schedule of classes in the semester preceding the semester in which the course is to be taken. (Fall, Spring, Summer)

PSYC 3807. Peer Advising. (2) Prerequisites: Psychology major, at least Junior standing, GPA greater than 2.75, participation is through competitive selection process, requires commitment for both the Fall and Spring terms. Students selected as Peer Advisors will earn 2 hours of PSYC 3807 credit each term in which they serve. The course activities involve weekly group training sessions; four
**PSYC 4606. Advanced Topics in Psychology. (3)**
Prerequisites: PSYC 1101, PSYC 2103, Senior standing, and permission of department. Examination of special psychological topics. May be used in fulfillment of the capstone requirement for the degree. (Most Fall, Spring, Occasional Summer)

**PSYC 4612. Seminar in Behavior Modification. (3)**
Prerequisites: PSYC 2103, 2112, and 3112. Current issues in behavior modification, including an integration of principles, techniques and practical experiences. Emphasizes development of written and oral communication skills. (On demand)

**PSYC 4613. Seminar in Physiological Psychology. (3)**
(0, W) Prerequisites: PSYC 2103 with a grade of C or above and permission of the department. (PSYC 3113 or equivalent also recommended.) Intensive study of selected topics in physiological psychology, such as psychopharmacology, biofeedback and self-regulation, and sleeping and waking. Emphasizes development of written and oral communication skills. (Yearly)

**PSYC 4619. Seminar in Experimental Psychology. (3)**
(0, W) Prerequisites: PSYC 2103 with a grade of C or above and permission of the department. In-depth examination of an area of current concern in the psychological laboratory. Each semester will have a different focus such as discrimination, learning, memory, experimental analysis of behavior and attention. Emphasizes development of written and oral communication skills. (Yearly)

**PSYC 4625. Seminar in Developmental Psychology. (3) (O, W)**
Prerequisites: PSYC 2120, 2121, or 2124. Concentrated examination of selected current issues and research in a field of developmental psychology. Emphasizes development of written and oral communication skills. (Yearly)

**PSYC 4630. Seminar in Social Psychology. (3) (O, W)**
Prerequisites: PSYC 2103 with a grade of C or above, PSYC 3130, and permission of the department. Intensive study at the advanced level of topics of current research and theoretical interest in social psychology. Emphasizes development of written and oral communication skills. (Yearly)

**PSYC 4650. Seminar in Human Adaptation and Behavior. (3) (O, W)**
Prerequisites: PSYC 2103 with a grade of C or above, PSYC 3150, and permission of the department. Intensive reading and discussion in selected areas of psychology, such as stress, personality, emotions and psychopathology. Emphasizes development of written and oral communication skills. (Yearly)

**PSYC 4655. Seminar in Community Psychology. (3) (O, W)**
Prerequisites: PSYC 2103 with a grade of C or above, PSYC 2150, PSYC 3151, and permission of the department. Application of psychological research findings to specific problems in the community with emphasis on problems hypothesized directly to affect psychological well-being. Emphasizes development of written and oral communication skills. (Yearly)

**PSYC 4660. Seminar in Health Psychology. (3) (O, W)**
Prerequisite: PSYC 2103 with a grade of C or above and permission of the department. Detailed examination of issues relevant to health and behavior. Readings and discussion of health-related concepts and controversies current in the professional literature. Emphasizes development of written and oral communication skills. (Yearly)

**PSYC 4670. Seminar in Industrial Psychology. (3) (O, W)**
Prerequisites: PSYC 2103 with a grade of C or above, PSYC 2171, and permission of department. Topics of current concern in industrial/organizational
psychology and related disciplines including issues that affect individuals at work and organizations in society. Emphasizes development of written and oral communication skills. (Yearly)

PSYC 4690. Honors Thesis I. (3) Prerequisite: Permission of instructor. Initiation of independent Honors research, including the preparation and defense of a formal Honors thesis. (Fall, Spring, Summer)

PSYC 4691. Honors Thesis II. (3) (O, W) Prerequisite: PSYC 3790. Completion of independent Honors research, including the preparation and defense of a formal Honors thesis. May be used in fulfillment of the capstone requirement for the degree. (Fall, Spring, Summer)

READING EDUCATION (READ)

READ 3224. Teaching Reading to Primary Level Learners. (3) (W) Prerequisite: Admission to Teacher Education. Research, theory, and instructional practice related to the reading process and reading instruction in the elementary school with a focus on assessment of emergent reading behaviors; language development and reading; phonics and phonemic awareness; balanced literacy; and meeting the needs of diverse learners. Includes an extensive field-based component. (Fall, Spring)

READ 3226. Teaching Reading to Intermediate Grade Learners. (3) (W) Prerequisite: Admission to Teacher Education. Research, theory, and instructional practice related to integrating the communication processes with all subject areas, vocabulary, comprehension, study skills, authentic, assessment-based instruction, addressing the needs of diverse and struggling readers. Includes an extensive, field-based component. (Fall, Spring)

READ 3255. Integrating Reading and Writing Across Content Area. (3) (W) Prerequisite: Admission to Teacher Education. Theories, research, and instructional methods, associated with reading and writing in the content areas of the middle and secondary school curriculum. Includes an extensive field-based component. (Fall, Spring)

RELIGIOUS STUDIES (RELS)

Note: Depending on how respective sections of RELS courses are taught, a course could fulfill the requirement for historical, textual or cultural analysis for the B.A. in Religious Studies. Students must consult the course descriptions circulated each semester to determine which designations have been assigned to a particular course.

RELS 1101. Introduction to Religious Studies. (3) (W) An introduction to the study of the religious dimensions of human existence. (On demand)

RELS 1120. The Bible and Its Interpreters. (3) An introduction to the history of biblical interpretation from the pre-canonical era to the present. (On demand)

RELS 2000. Topics in Religious Studies. (1-3) Credit hours vary with topics. May be repeated for credit as topics vary. (On demand)

RELS 2101. Introduction to Western Religions. (3) An introduction to Judaism, Christianity, Islam and other selected religions. Emphasis on the myths, stories, symbols, rituals, ideas, and ethical practices of these religions in their classical formulations and in their contemporary practices. (On demand)

RELS 2102. Introduction to Asian Religions. (3) An introduction to Hinduism, Buddhism, and other selected religions such as Confucianism, Daoism, and Islam. Emphasis on the myths, stories, symbols, rituals, ideas, and ethical practices of these religions in their classical formulations and in their contemporary practices. (On demand)


RELS 2107. Native American Religions. (3) An introduction to various dimensions of the religious experience of North American First Peoples, including other-than human and human persons; myth and orality, sacred space, time and objects; lifeways and ceremonies; tradition and change. Special emphasis is placed on past and present imaginings of Native American religions. (On demand)

RELS 2108. Religion in American Culture. (3) The role of religion in the shaping of American culture. (On demand)

RELS 2110. Judaism. (3) The development of Jewish religious thought from antiquity to the present. (On demand)

RELS 2120. Christianity. (3) The world-wide development of the thought and practices of diverse Christian traditions from antiquity to the present. (On demand)

RELS 2131. Islam. (3) The development of the traditions in Islam with emphasis on Islamic culture, literature, and mysticism. (On demand)


RELS 2157. South Asian Buddhism. (3) The historical development of Buddhism during its first 2,500 years with particular emphasis on its diverse manifestations in South Asia. (Alternate years)
RELS 2166. Daoism. (3) A thematic and historical exploration of a major indigenous religious tradition of China, with particular attention devoted to early, medieval, and modern practices and worldviews. (On demand)

RELS 2169. Mahāyāna Buddhism in East Asia. (3) An exploration of the various ways the religious ideal of the bodhisattva has been imagined and employed in devotional practice in Mahāyāna Buddhist traditions in China, Korea, Japan, Vietnam, and the United States. (On demand)

RELS 2216. The Modern Middle East. (3) Cross-listed as HIST 2216. An introduction to the history of this important and dynamic region. The course focuses on the issues that have defined the Middle East in the recent past and provides students with the historical context needed to understand the region, its peoples, and its conflicts in greater depth. Depending on how respective sections are taught, a course could fulfill the requirement for historical, textual or cultural analysis. (On demand)

RELS 2600. Orientation to the Study of Religion. (3) (W) Prerequisite: Religious Studies major. Required of all majors as early in their program as possible. Examines basic concepts, theories, and approaches that are involved in the critical, academic study of religion. Attention given to basic research materials and to standard writing practices in the discipline. (Fall, Spring)

RELS 3000. Advanced Topics in Religious Studies. (3) Treatment of a special topic in religious studies. May be repeated for credit as topics vary. Same as RELS 3001, but does not fulfill the General Education writing goal. (On demand)

RELS 3001. Advanced Topics in Religious Studies—Writing Intensive. (3) (W) Treatment of a special topic in religious studies. May be repeated for credit as topics vary. Same as RELS 3001, but fulfills the General Education writing goal. (On demand)

RELS 3090. Readings in Primary Texts. (3) Introductory and/or intermediate level readings of ancient and medieval primary source texts in languages such as Greek, Latin, Hebrew, Aramaic, Arabic, Sanskrit, or Chinese. This course fulfills the requirement for a course in textual analysis. May be repeated for credit as topics vary. (On demand)

RELS 3101. Greek Myths and Religions. (3) The gods and goddesses, heroes and heroines in ancient Greek myths and religions; Greek myth and later Western religions; polytheism and monotheism; functions of myth; and contemporary interpretations of Greek myth. (On demand)

RELS 3104. Prophecy and Prophetic Literature in Ancient Israel. (3) Prerequisite: RELS 2104 or permission of the instructor. An examination of the phenomenon of prophecy in the religion of ancient Israel, with particular attention devoted to the writings about and writings attributed to named prophets in the Hebrew Bible. (On demand)

RELS 3107. The Psalms and Wisdom Literature of Israel. (3) Prerequisite: RELS 2104 or permission of the instructor. The origin and content of the Psalms and the place of wisdom literature in the development of Hebrew thought. (On demand)

RELS 3111. Women in Judaism. (3) Cross-listed as WGST 3111. A survey of the roles and activities of Jewish women throughout Jewish history, as they are portrayed in a diverse sampling of Jewish religious literature and practice. (On demand)

RELS 3113. Jesus. (3) Recommended: RELS 2105. Jesus and the religion he taught from the point of view of the synoptic gospels. (On demand)

RELS 3115. Early Christianity. (3) The history of Christianity in the 2nd-7th centuries C.E. Topics may include martyrdom and persecution, heresy and orthodoxy, constructions of gender and sexuality in early Christianity, church-state relations, asceticism and monasticism, Constantine and the Christianization of the Roman Empire. (On demand)

RELS 3116. Paul. (3) A close study of the writings of the apostle Paul in their historical contexts with consideration of the ways in which they played a role in the development of the emerging Christian movement. (On demand)

RELS 3122. Esoteric Traditions. (3) The study of one or more particular expressions of religious esotericism (e.g., Jewish Kabbalah; Hindu Tantra; etc.). (On demand)

RELS 3129. Christian Controversies. (3) An exploration of Christian responses to ethical, cultural, political, and theological conflicts. The issues are selected to represent a range of time periods in the history of various Christian traditions. (On demand)

RELS 3135. Religion in Nineteenth Century America. (3) Examination of religious thought, practices, and movements in 19th century America. (On demand)

RELS 3137. Religion in the African American Experience. (3) An introduction to the evolution of black religious thought and culture in America during the 20th century. Emphasizes the rise of the Black Church and its expanding role within black urban communities in America. Also addresses the emergence of other religious belief systems in contemporary Black culture such as Voodoo, Santeria, Spiritist churches, the Nation of Islam and even Black Judaism. Issues of race, class, gender, identity, and violence will be points of discussion in light of black religious life. (On demand)

RELS 3150. African American Church and Civil Rights. (3) Cross-listed as AFRS 3150. Role of the African-American church in the struggle for human equality. Topics such as radical, moderate, and accommodationist leadership styles; historical development of the Black Church in the South; and the Black Church’s emergence as a foundation for...
modern civil rights movement. (On demand)

RELS 3163. The Religious Art and Architecture of India. (3) The visual art of Hindus, Buddhists, Jainas, and Muslims in the architecture, paintings, and sculptures of India. (On demand)

RELS 3209. Religion and Literature. (3) An examination of religious themes and questions as presented in contemporary and traditional literature. Focus may be on an artist, genre (novel, poetry, drama), or topic. Although the focus of this course may vary, it may only be taken once for credit. (On demand)

RELS 3210. Religion and Popular Culture. (3) An examination of the interactions and intertwinnings of religion and popular culture. Topics may include, but are not limited to, popular literature, domestic rituals, material and visual cultures, space and place, fan cultures, media, and folklore. Emphasis on how religion and popular culture shape and are shaped by issues of identity, community, nostalgia, memory, commercialism, capitalism, power, and meaning. (On demand)

RELS 3212. Religion and Film. (3) (W) An examination of religious identity, alienation, search, discovery, sexuality and death as reflected in recent American movies and foreign films. Film laboratory required. Although the focus of this course may vary, it may only be taken once for credit. (On demand)

RELS 3215. Religion and Sexuality. (3) Cross-listed as WGST 3215. An examination of the role of religious discourses and practices in shaping, understanding and evaluating sexual practices, desires and identities. Although the focus of this course may vary, it may only be taken once for credit. (On demand)

RELS 3220. Religion and Masculinity. (3) Cross-listed as WGST 3216. An examination of the role of religious discourses and practices in shaping, regulating and evaluating masculine identities and practices. Although the focus of this course may vary, it may only be taken once for credit. (On demand)

RELS 3232. Islam in the African American Experience. (3) An examination of the historical practices of Islam and its varied forms within African American culture. A key component of the course centers around the narratives of Nobel Drew Ali, Elijah Muhammad, Malcolm X, Wraith Dean Muhammad, and Louis Farrakhan. This course also has a gendered component looking at the leadership of black women within Islam, the Nation of Islam, and Moorish Science. (On demand)

RELS 3242. Philosophy of Religion. (3) Cross-listed as PHIL 3530. Philosophical implications of religious experience, including the definitions, development, and diverse forms of the problems of belief and reason in modern thought. (On demand)

RELS 3250. The Power of Mourning. (3) A theoretical examination of mourning and the ethical/political implications of mourning for our understanding of power, agency, and hope. (On demand)

RELS 3300. The Performance of Healing. (3) An examination of practices of healing and their concomitant discourses of illness, health, body, society, and cosmos across selected religious and secular traditions. (On demand)

RELS 3400. Applied Research/Field Work. (3) Prerequisite: Religious Studies major or minor, 9 earned credit hours in religious studies, and permission of the instructor. Research and in-service training in business or community-based organizations. Specific content based on contract between student, supervising professor and cooperating organization. Depending on how this research and training is focused, this course could fulfill the requirement for historical, textual or cultural analysis. The course designation will be determined by the instructor. Approximately 120 contact hours for the semester. (On demand)

RELS 3450. Study Abroad for Religious Studies Majors. (3-6) Prerequisite: Permission of the department. The examination of an approved topic in the context of study abroad. Depending on how this research is focused, this course could fulfill the requirement for historical, textual or cultural analysis. The course designation will be determined by the instructor. (On demand)

RELS 4000. Seminar in Religious Studies. (3) Prerequisite: Permission of the instructor. May be repeated for credit. (On demand)

RELS 4010. Major Figure in Religious Studies. (3) (W) A focused examination of the life and works of a major figure, or small set of related figures, and their significance for the study of religion. May be repeated for credit for different figures. (On demand)

RELS 4020. Major Text in Religious Studies. (3) A focused examination of an important primary text, or small range of primary texts, in the study of religion. The text may be a sacred text from a religious tradition or a theoretical text important in the study of religion. This course fulfills the requirement for a course in textual analysis. May be repeated for credit for different texts. (On demand)

RELS 4030. Major Period in Religious History. (3) A focused examination of a discreet and important period in religious history. The course will examine social, political, cultural, artistic and economic dimensions of a given period with respect to how they shaped, and were shaped by, religion. This course fulfills the requirement for the B.A. in Religious
Studies for a course in historical analysis. May be repeated for credit for different periods. (On demand)

RELS 4040. Major Approach to the Study of Religion. (3) A focused examination of an influential classic or contemporary approach to the study of religion, or small set of related approaches. The course will focus on close reading of primary texts and developing students’ critical engagement with the texts, through writing and discussion. May be repeated for credit for different approaches. (On demand)

RELS 4107. Early Judaism. (3) Prerequisite: RELS 2104 or 2105 or 3110 or permission of the instructor. Comparative historical and literary study of the varieties of Judaism evidenced during late antiquity (circa 70-640 C.E.), with special attention devoted to the information and development of rabbinic Judaism. (On demand)

RELS 4108. Medieval Judaism. (3) Prerequisite: RELS 2104 or 3110 or permission of the instructor. Comparative historical and literary study of the varieties of Judaism evidenced in Western Europe, the Byzantine Empire, and Islamicate realms from approximately 640 C.E. to approximately 1492 C.E. (On demand)

RELS 4109. Modern Judaism. (3) Prerequisites: RELS 3110, RELS 4107, RELS 4108, or permission of the instructor. Historical and conceptual study of Judaism and Jewish experience in Europe, America, and Israel, from the 16th century to the present, with special attention paid to the development of denominations, Zionism, and the Holocaust. (On demand)

RELS 4110. Contemporary Jewish Thought. (3) An examination of philosophy, religion, morality, politics, sociality, culture, family, and self-identity, in the light of modern and recent Jewish thought. (On demand)

RELS 4121. Medieval and Reformation Christianity. (3) An examination of Christian thought and practice from the early Middle Ages (c. 500 CE) through the reformations of the sixteenth century. (On demand)

RELS 4125. Witches, Saints, and Heretics. (3) An examination of the categories “normal” and “deviant” as formulated in select cultural traditions. Focus will be on examining constructions of individual identity and cultural boundaries through close reading of primary texts alongside recent films, works of fiction, and scholarly interpretations. (On demand)

RELS 4127. Material Christianity. (3) An examination of the ways individuals and groups throughout the Christian tradition have invested material objects with sanctity and power. Much of the course will be devoted to exploring theoretical models and theological warrants for practices related to objects. (On demand)

RELS 4150. Religion in the Contemporary United States. (3) An examination of selected topics and issues concerning contemporary American religion and culture. Topics may include, but are not limited to, religion and politics, the numerical decline of some religious groups and the explosive growth of others, the increased visibility of combinative religious practices and beliefs, new religious movements, and the intertwining of religions, popular culture, and consumer capitalism. (On demand)

RELS 4201. Religion, Morality and Justice. (3) An exploration of the ethical and social dimensions of selected religious traditions in their cultural contexts. (On demand)

RELS 4300. Religion and the Body. (3) An examination of the relationship between religious discourses and practices and the perceptions and experiences of an embodied subject. (On demand)

RELS 4340. Theories of Sacrifice. (3) An examination of classical and contemporary understandings of the history, meaning and cultural significance of sacrifice. (On demand)

RELS 4400. Method and Theory in the Study of Religion. (3) A close examination of primary texts representing influential classical and contemporary approaches to the study of religion. Attention given to student writing and oral presentation skills. Required of all honors students. (On demand)

RELS 4600. Senior Seminar. (3) (O,W) Required of majors in final year of studies. (Fall, Spring)

RELS 4700. Honors Thesis. (3) Prerequisite: Permission of instructor. Required of all honors students. May be repeated once for credit. (On demand)

RELS 4800. Independent Studies. (1-3) Prerequisite: permission of the instructor. May be repeated for credit. (On demand)

RESP 3101. Professional Roles & Dimensions of Respiratory Therapy. (3) Prerequisite: Admittance into RT program. This course encompasses an introduction to the history, trends, issues, and evolution of the respiratory therapy profession. The course includes an overview of selected respiratory theories and an analysis of the professional environment for the current and future practice of respiratory care. Topics and emphasis may vary. (Fall)

RESP 3102. Outpatient Services in Respiratory Therapy. (3) Prerequisite: Admittance into RT program. Corequisite: RESP 3101. This course encompasses an introduction to the history, trends, issues, and evolution of the outpatient services and reimbursement and the respiratory therapy profession. The course includes selected respiratory care theories and practices in alternate-care sites including pulmonary diagnostics, pulmonary rehabilitation, home care, sub-acute care. Topics and emphasis may vary. (Fall)
RESP 3103. Advanced Pharmacology in Respiratory Therapy. (3) Prerequisite: Admittance into RT program. Corequisite: RESP 3101. This course builds upon a basic understanding of the concepts and principles of pharmacology as applied in the respiratory therapy in the management of patient with cardiopulmonary disease and critical care. (*Fall*)

RESP 3104. Advanced Critical Care Pathophysiology. (3) Prerequisite: Admittance into RT program. Corequisite: RESP 3101. A survey of the disease processes which affect the tissues, organs or body as a whole. Special emphasis is placed on infectious diseases, their causes, prevention and treatment in the critical care setting. (*Fall*)

RESP 3105. Advanced Critical Care Monitoring. (3) Prerequisite: Admittance into RT program. Corequisite: RESP 3101. This course is a study of advanced cardiopulmonary monitoring used with critical care patients. Topics include but not limited to hemodynamic monitoring, mechanical ventilator waveform graphic analysis, and capnography. (*Fall*)

RESP 4101. Program Design, Implementation, and Outcomes Evaluation. (3) Prerequisite: Completion of all 3000-level courses. Evidence-based methods and techniques to design, implement, and evaluate healthcare quality control/improvement initiatives, and patient and population education programs. Topics and emphases may vary. (*Fall*)

RESP 4102. Program Administration. (3) (O) Prerequisite: Completion of all 3000 level courses. Administration, financial, human resource, legal, and policy concepts and issues in outpatient, inpatient, public, and private sector settings. Topics and emphases may vary. (*Fall*)

RESP 4103. Evidence Based Practice in Respiratory Care. (3) Prerequisite: Admittance into RT program. Corequisite: Completion of all 3000 level courses. This course will provide the student with an introduction to the concept of evidence-based practice and an opportunity to acquire the skills necessary to be able to incorporate evidence and best practices into professional work. These include an understanding of research methods and the approach to critical appraisal of research literature. (*Fall, On demand*)

RESP 4104. Advanced Cardiopulmonary Physiology. (3) Prerequisite: Admittance into RT program. Corequisite: Completion of all 3000 level courses. Advanced physiology of the cardiovascular and pulmonary systems. This course includes study of respiratory physiology, cardiac and circulatory function with relevant clinical application of concepts in ECG interpretation, blood pressure regulation, gas exchange and transport, breathing regulation, respiratory insufficiency and congenital abnormalities. (*Spring, On demand*)

RESP 4111. Practicum. (9) (W) Prerequisites: RESP 4101, RESP 4102. This course includes experiences in a chosen focus area (clinical, administrative, or population-based). This experience will culminate in a capstone project in the form of research, or other scholarly activity that articulates the design, organization, statistics and data analysis used and includes an oral and written presentation of the project. (*Spring*)

RUSS 1201. Elementary Russian I. (4) Fundamentals of the Russian language, including speaking, listening comprehension, reading, and writing. (*Fall*)

RUSS 1202. Elementary Russian II. (4) Prerequisite: RUSS 1201. Fundamentals of the Russian language, including speaking, listening comprehension, reading, and writing. (*Spring*)

RUSS 2201. Intermediate Russian I. (4) Prerequisite: RUSS 1202 or permission of the department. Review of grammar, with conversation and composition based upon readings in Russian culture and civilization. (*Fall*)

RUSS 2202. Intermediate Russian II. (4) Prerequisite: RUSS 2201 or permission of the department. Continuation of grammar, conversation, and composition skills, based on readings in Russian literature. (*Spring*)

RUSS 3050. Masterpieces of Russian Literature. (3) (W) Prerequisite: sophomore standing. Conducted in English. No knowledge of Russian required. May be repeated as topic changes. (*On demand*)

RUSS 3201. Advanced Russian Grammar, Composition, and Conversation I. (3) Prerequisite: RUSS 2202 or permission of the department. Intensive review of Russian grammar, plus mastery of new grammatical structures, while performing written and oral task-oriented activities. Acquisition of new vocabulary in a cultural context. (*Fall*)

RUSS 3202. Advanced Russian Grammar, Composition and Conversation II. (3) Prerequisite: RUSS 3201 or permission of the department. Intensive practice of Russian grammar, speaking, and writing. Additional Russian civilization and culture as students improve their language skills. (*Spring*)

RUSS 3203. Russian Civilization and Culture. (3) (W) Conducted in English. No knowledge of Russian required. Geographical, historical, and artistic features of Russian culture, as well as aspects of life, thought, behavior, attitudes, and customs of the Russian-speaking people. Lectures, discussions, and viewing of films. (*On demand*)

RUSS 3800. Directed Individual Study. (1-4) Prerequisite: RUSS 3202 or permission of the department. To be arranged with the instructor. May be repeated for credit. (*On demand*)
SECONDARY EDUCATION (SECD)

SECD 3140. The Adolescent Learner. (3) Characteristics of the adolescent learner, including the impact on the classroom of physical, social, cognitive, moral, vocational, and affective developmental factors and multicultural issues. Field-based activities include observation and tutoring in school and non-school settings; 15 hours of field experiences.

SECD 3141. Secondary Schools. (3) Prerequisite: admission to Teacher Education. Overview of secondary education with emphasis on the foundational components and instructional programs appropriate for contemporary adolescents in American society. Includes 15 hours of field experiences.

SECD 3142. Issues in Secondary Education. (2) Prerequisite: admission to Teacher Education. Corequisites: EDUC 4291 and a content methods course. Integration of preservice education and academic concentration coursework in a pre-student-teaching field experience. Students choose from sections of the course that focus on a contextual issue of particular interest while working in a setting where the issue exists. Students may take as many different issues sections as their schedules permit. Includes 30 hours of field experiences. (On demand)

SECD 3800. Individual Study in Secondary Education. (1-6) Prerequisite: permission of the student’s advisor. Independent study under the supervision of an appropriate faculty member. May be repeated for credit. (Fall, Spring, Summer)

SECD 4140. Adolescence and Secondary Schools. (3) Prerequisites: MDSK 2100 and admission to teacher education. Corequisite: MDSK 3151. Overview of secondary education, including the foundational components and instructional programs appropriate for contemporary adolescents in a diverse U.S. society. (Fall, Spring)

SECD 4451. Student Teaching/Seminar: 9-12 Secondary English. (12) (O) Prerequisite: Departmental permission for admission to student teaching. Corequisite: MDSK 4150. A planned sequence of experiences in the student’s area of specialization conducted in an approved school setting under the supervision and coordination of a university supervisor and a cooperating teacher. During student teaching the student must demonstrate the competencies identified for his/her specific teaching field in an appropriate grade level setting. Approximately 35-40 hours per week in an assigned school setting. (Fall, Spring)

SECD 4452. Student Teaching/Seminar: 9-12 Secondary Math. (12) (O) Prerequisite: Departmental permission for admission to student teaching. Corequisite: MDSK 4150. A planned sequence of experiences in the student’s area of specialization conducted in an approved school setting under the supervision and coordination of a university supervisor and a cooperating teacher. During student teaching the student must demonstrate the competencies identified for his/her specific teaching field in an appropriate grade level setting. Approximately 35-40 hours per week in an assigned school setting. Six-to-eight on-campus seminars scheduled throughout the semester. (Fall, Spring)

SECD 4453. Student Teaching/Seminar: 9-12 Secondary Science. (12) (O) Prerequisite: Departmental permission for admission to student teaching. Corequisite: MDSK 4150. A planned sequence of experiences in the student’s area of specialization conducted in an approved school setting under the supervision and coordination of a university supervisor and a cooperating teacher. During student teaching the student must demonstrate the competencies identified for his/her specific teaching field in an appropriate grade level setting. Approximately 35-40 hours per week in an assigned school setting. Six-to-eight on-campus seminars scheduled throughout the semester. (Fall, Spring)

SECD 4454. Student Teaching/Seminar: 9-12 Secondary Social Studies. (12) (O) Prerequisite: Departmental permission for admission to student teaching. Corequisite: MDSK 4150. A planned sequence of experiences in the student’s area of specialization conducted in an approved school setting under the supervision and coordination of a university supervisor and a cooperating teacher. During student teaching the student must demonstrate the competencies identified for his/her specific teaching field in an appropriate grade level setting. Approximately 35-40 hours per week in an assigned school setting. Six-to-eight on-campus seminars scheduled throughout the semester. (Fall, Spring)

SECD 4472. Secondary Education Clinical Experience. (3) Program of learning activities in the student’s area of academic concentration in an approved school setting. (On demand)

SYSTEMS ENGINEERING (SEGR)

Courses must be completed to progress within three attempts including withdrawing from the course with a grade of W. Failure to progress in three attempts will result in suspension from the program.

SEGR 2101. Systems Engineering Concepts. (3) Prerequisite: ENGR 1202 with a grade of C or above. This course provides the foundation for systems engineering processes and practices. The contents cover the discussion of current systems issues, basic systems engineering processes, and the roles of systems engineering professionals in a global business environment. It also will cover the principles of mechanical drawing and computer aided design (CAD) for systems engineering applications. (Fall)
SEGR 2105. Computational Methods for Systems Engineering I. (3) Prerequisite: SEGR 2101 with a grade of C or above. This course will introduce programming languages and computational tools that are often used by Systems Engineers. Programming in C and Matlab will be emphasized. Spreadsheet-based modeling will be introduced. (Spring)

SEGR 2106. Engineering Economic Analysis. (3) Prerequisite: Sophomore standing or SEGR 2105 with a grade of C or above or permission of the department. Covers economic analysis of engineering alternatives, including time value of money, cash flow analysis, cost estimation, project evaluation, accounting and budgeting tools. (Fall)

SEGR 2111. Introduction to Engineering Management. (3) Prerequisite: ENGR 1202 with a grade of C or above. Focuses on the fundamentals in engineering management. It provides students the understanding of engineering management principles and practices and the roles of engineering management professionals in a global business environment. (Spring)

SEGR 2121. Introduction to Logistics Systems and Supply Chains. (3) Prerequisite: ENGR 1202 with a grade of C or above. Focuses on the fundamentals in logistics systems and supply chain operations. It provides students the understanding of the operations in logistics systems and global supply chains and the roles of logistics/supply chain professionals in global business environment. (Fall)

SEGR 3101. System Design and Deployment. (3) Prerequisite: SEGR 2105 with a grade of C or above or permission of the department. Focuses on the basics of systems design, analysis, and implementation. It covers system design elements, system interface issues, system decomposition, and system integration. The emphasis is on the effective design and integration of system operations and successful deployment of systems design results. (Fall)

SEGR 3102. System Simulation, Modeling & Analysis. (3) Prerequisite: STAT 3128 with a grade of C or above. Focuses on the study of discrete-event simulation and its use in the analysis and design of systems. The emphasis is on using simulation software for simulation modeling and analysis with practical applications to design, analysis, and improvement of diverse systems. (Spring)

SEGR 3103. Human System Interface. (3) Prerequisite: SEGR 2105 with a grade of C or above or permission of the department. Focuses on the interfacing issues between human, organization, and systems operations. The emphasis is on the influence of human and cultural factors related to the effectiveness of system operations in a global business environment. (Fall)

SEGR 3105. Computational Methods for Systems Engineering II. (3) Prerequisite: SEGR 2105 with a grade of C or above. This course covers numerical techniques for systems engineers such as Polynomial interpolation, Numerical differentiation and integration, Newton and simple gradient methods for nonlinear equations. (Fall)

SEGR 3107. Decision and Risk Analysis. (3) Prerequisite: SEGR 2105 with a grade of C or above or permission of the department. This course aims to provide some useful tools for analyzing difficult decisions and making the right choice. After introducing components and challenges of decision making, the course will proceed with the discussion of structuring decisions using decision trees and influence diagrams. Decisions under conflicting objectives and multiple criteria will be covered as well as sensitivity and risk analysis. (Fall)

SEGR 3111. Project Management. (3) (O, W) Prerequisite: STAT 3128 with a grade of C or above. Focuses on the study of various aspects of project management techniques and issues, and the use of conceptual, analytical, and systems approaches in managing engineering projects and activities. It includes the development and writing of project plans and reports for engineering and business operations. (Fall)

SEGR 3112. Value Engineering Management. (3) Prerequisite: SEGR 2106 with a grade of C or above or permission of the department. Analyzes the requirements of a project to achieve the highest performance for essential functions at the lowest costs over the life of the project. The "best value" is achieved by a multidisciplinary team effort through the study of alternative design concepts, materials, and methods. (Spring)

SEGR 3114. Production Control Systems. (3) Prerequisite: statistics with a grade of C or above. Principles, analysis and design of production and inventory planning and control systems. Demand forecasting, production scheduling and control systems and introduction to CPM. (Fall)

SEGR 3122. Implementation of Logistics Systems and Supply Chains. (3) Prerequisite: SEGR 3121 with a grade of C or above. This course reviews and analyzes real-life logistics and supply chain implementation cases. Different industry supply chains are compared and benchmarking is emphasized through review of industry best practices. (Spring)

SEGR 3131. Computer Aided Design & Manufacturing. (3) Prerequisite: SEGR 2101 with a grade of C or above. Focuses on the basics of hardware and software implementation in the design and manufacturing processes. The emphasis is in making the design and manufacturing processes effective and efficient for global business competition. (Fall)

SEGR 3132. Facilities Planning & Material Handling Systems. (3) Prerequisite: SEGR 2101 with a grade of C or above or permission of the department. Focuses on the basics in facility planning, plant layout design, material handling systems design and integration, and warehousing. The emphasis is on the
effective design and integration of plant layout, material handling systems, and warehousing for supply chain operations. (Fall)

SEGR 3290. Systems Design Project I. (1) (O, W) Prerequisite: SE Senior standing; corequisite: SEGR 3111. First of a two-semester sequence leading to a major integrative system design experience in applying the principles of systems design and analysis and project management to the design of a system. Teamwork and communication skills are emphasized. It focuses on the development of the project plan and proposal for the capstone systems design project. Each student develops a complete systems design project plan and proposal and makes an oral presentation of the proposal to the faculty. It runs in conjunction with the project management course. (Fall)

SEGR 3291. Systems Design Project II. (3) (O, W) Prerequisite: SEGR 3290 with a grade of C or above. A continuation of SEGR 3290 for the execution of the proposed systems design project. This course includes a mid-term written progress report with an oral presentation and a final oral presentation to demonstrate project results. (Spring)

SEGR 4090. Special Topics. (1-6) Directed study of current topics of special interest.

SEGR 4101. Network Modeling & Analysis. (3) Prerequisite: OPRS 3111 with a grade of C or above or SEGR 3106 with a grade of C or above. This course covers formulation and solution of optimization problems using network flow algorithms. Topics include minimum flow problems shortest path, maximum flow, transportation, assignment, minimum spanning trees. Efficient solution algorithms are investigated. (Spring)

SEGR 4131. Product and Process Design. (3) Prerequisite: SEGR 2101 with a grade of C or above or permission of the department. Focuses on how to achieve a high-quality, customer-oriented product development process, from technology and product innovation, to design and development, leading up to production. Design for Six Sigma (DFSS) is the main technology discussed plus other product design approaches, such as design for cost, design for safety, and design for environment. (Spring)

SEGR 4132. Automation & Systems Design. (3) Prerequisite: SEGR 3132 with a grade of C or above. Focuses on the concepts of systems design, manufacturing systems design, manufacturing process control, shop floor control, and automation. The emphasis is on automation for economic and flexible manufacturing operations that can handle frequently changing global manufacturing requirements. (Spring)

SEGR 4133. Lean Manufacturing Systems. (3) Prerequisite: SEGR 3132 with a grade of C or above. Focuses on the fundamentals of how manufacturing operations work, and talks about the latest techniques to make your manufacturing organization successful. This course discusses how lean methodology can eliminate waste and increase the speed in manufacturing while reducing cycle times. (Spring)

SEGR 4141. Engineering Experimental Design. (3) Prerequisite: STAT 3128 with a grade of C or above. Focuses on how to achieve high-quality/low-cost systems based on Taguchi methods, design of experiments methods, and statistical analysis of data. Also includes introduction to response surface methods. (Spring)

SEGR 4142. Reliability Management. (3) Prerequisite: STAT 3128 with a grade of C or above. Focuses on measuring, evaluating, improving and managing reliability. Topics include basic reliability models, hazard rate functions, system reliability, and fault tree analysis. (Spring)

SEGR 4952. Engineering System Optimization. (3) Prerequisite: Senior standing and OPRS 3111 with a grade of C or above. A systems engineering approach will be followed to analyze practical applications from different engineering disciplines to optimize complex systems. Model formulation, sensitivity analysis, special cases, solutions using commercially available software applications and practical implementation considerations will be emphasized. (Fall)

SOYOLOGY (SOCY)

SOCY 1101. Introduction to Sociology. (3) The sociological perspective and process; fundamental concepts, principles, and procedures. (Fall, Spring, Summer) (Evenings)

SOCY 2090. Topics in Sociology. (1-3) Examination of specialized topics. May be repeated for credit as topics vary.

SOCY 2091. Topics in Sociology – Writing Intensive. (1-3) (W) Examination of specialized topics. May be repeated for credit as topics vary.

SOCY 2100. Aging and the Lifecourse. (3) Cross-listed as GRNT 2100. An interdisciplinary course that examines the phenomenon of aging and its consequences for society from a variety of perspectives. Students participate in lectures, discussions and service learning projects designed to give them a broad overview of the field of gerontology. Emphasis on the wide variation in the aging process and approaches to meeting the needs of the aging population. (Yearly)

SOCY 2107. Global Hip Hop. (3) Cross-listed as AFRS 2107. The development and growth of Hip Hop from a US inner city Black expressive culture to a global subaltern social movement. Examines cultural production in Hip Hop in relation to the contemporary global issues that focus on the youth, subalterns, and post-colonial experiences. (On demand)

SOCY 2112. Popular Culture. (3) Analysis of popular forms of everyday life in America: fashions, fads,
entertainment trends, advertising, television programming, music, myths, stereotypes, and icons of mass-mediated culture. (Fall, Spring)

SOCY 2115. Introduction to Organizations. (3) Prerequisite: SOCY 1101 or permission of the instructor. The ubiquity of formal organizations is a distinctively modern phenomenon. Today, organizations not only dictate activities at the workplace, but also exert profound impacts on nearly all aspects of modern life. As one of the most vibrant and fast growing branches of the discipline, organizational sociology provides the conceptual tools to understand a variety of organizational processes. In this course, you will be introduced to some of the basic concepts and topics in organizational sociology. Special emphases will be placed on the social impacts of organizations.

SOCY 2126. World Population Problems. (3) (W) Cross-listed as ANTH 2126. An examination of various world population “problems,” such as growth, migration, fertility, and population aging, in order to learn how cultural, political, economic, and environmental factors influence and are influenced by the population structure of a given society. (Alternate years)

SOCY 2132. Sociology of Marriage and the Family. (3) Cross-cultural examination of family; socialization and sex roles; love, dating, and mate selection; communication; sexuality; power and decision making; parenthood; childlessness; conflict and violence; divorce, remarriage, and stepfamilies; alternate lifestyles; and future family. (Fall, Spring, Summer)

SOCY 2133. Sociology of Marriage and Family – Writing Intensive. (3) (W) Cross-Cultural examination of family; socialization and sex roles; love, dating, and mate selection; communication; sexuality; power and decision making; parenthood; childlessness; conflict and violence; divorce, remarriage, and stepfamilies; alternate lifestyles; and future family. (Fall, Spring, Summer)

SOCY 2161. Sociological Social Psychology. (3) Prerequisite: SOCY 1101 or permission of instructor. How the actual, imagined or implied presence of other people influences a person’s thoughts, feelings and behavior. Socialization, self and identity, attitudes, social perception, language, and group processes.

SOCY 2163. Sociology of Gender. (3) (W) Changing patterns of gender inequality; socialization and social structure as basis of gendered behavior, ideologies, and relationships. Alternative gender models and social movements as vehicles to diminishing gender inequality. (Fall, Spring)

SOCY 2171. Social Problems. (3) Contemporary social problems and consequences for American society. (Fall, Spring, Summer) (Evenings)

SOCY 3090. Topics in Sociology. (1-3) Prerequisite: SOCY 1101. Examination of specialized sociological topics. May be repeated for credit as topics vary.

SOCY 3091. Topics in Sociology - Writing Intensive. (1-3) (W) Prerequisite: SOCY 1101. Examination of specialized sociological topics. May be repeated for credit as topics vary.

SOCY 3110. American Minority Groups. (3) Prerequisite: SOCY 1101. Relations between dominant and minority groups; the establishment, maintenance, and decline of dominance involving racial, ethnic, and religious minorities. (Fall, Spring)

SOCY 3132. Sociology of Sport. (3) Prerequisite: SOCY 1101 or permission of instructor. Dynamics and emergence of sport; reciprocal influence between sport and society; values, norms, and roles in sports. (On demand)

SOCY 3143. Social Movements. (3) Prerequisite: SOCY 1101. Analysis of collective behavior, ideology, development, and organizations of movements seeking or resisting change. (Yearly)

SOCY 3153. Evolution of Sociological Theory. (3) Prerequisite: SOCY 1101. Origins and evolution of fundamental sociological concepts and theories. (Fall, Spring)


SOCY 3161. Socialization and Society. (3) Prerequisite: SOCY 1101. Analysis and process of socialization, social interaction, and sociocultural dimension of personality. (Yearly)


SOCY 3175. Crowds, Riots, and Disasters. (3) Prerequisite: SOCY 1101. Collective behavior in everyday life; crowds, rumors, fads, fashion; collective behavior that disrupts social order; riots and responses to disaster; response of individuals, organizations and communities to natural disasters, e.g., floods, hurricanes, tornadoes, and earthquakes. (Yearly)

SOCY 3210. Black Families in the Diaspora. (3) Cross-listed as AFRS 3210 and LTAM 3110. This course is designed to acquaint students with historical and contemporary experiences of peoples of African descent in the Caribbean and Latin American countries with specific emphasis on family structure and family relationships. Includes discussion of theories, history, impact of globalization on family structure, roles of women and identity, socioeconomic status and mobility, slavery, colonialism, and capitalism. The course is designed to provide students with a better understanding of the comparative relationships and links between family structures and common life experiences among peoples of African descent in different parts of the world, with specific
emphasize on the Caribbean and Latin American regions. (On demand)

**SOCY 3250. Political Sociology.** (3) Cross-listed as POLS 3250. Prerequisite: SOCY 1101. Sociological analysis of the relationship between social, economic and political systems. Focuses on power relations in society and its effects on the distribution of scarce resources. Topics covered may include: theories of power and the nation state, political participation and voting, religion and politics, the comparative welfare state, media and ideology, the global economy, war and genocide, revolutions, and social movements. Not open to students who have credit for SOCY 3251 or POLS 3251. (On demand)

**SOCY 3251. Political Sociology.** (3) (O) Cross-listed as POLS 3251. Prerequisite: SOCY 1101. Sociological analysis of the relationship between social, economic and political systems. Focuses on power relations in society and its effects on the distribution of scarce resources. Topics covered may include: theories of power and the nation state, political participation and voting, religion and politics, the comparative welfare state, media and ideology, the global economy, war and genocide, revolutions, and social movements. Not open to students who have credit for SOCY 3251 or POLS 3251. (On demand)

**SOCY 3261. Human Sexuality.** (3) Prerequisite: SOCY 1101 or permission of instructor. Human sexuality research; teenage pregnancy; birth control; sex education; sexual fantasy; pornography; homosexuality and bisexuality; sexual communication; and heterosexual alternatives. (Fall, Spring, Summer)

**SOCY 3267. Sociology of Dying, Death, and Bereavement.** (3) Cross-listed as GRNT 3267. Social definitions of death, process of dying, facing death across the life course, grief, bereavement, bioethical issues impacting individuals and society. (Yearly)

**SOCY 3895. Directed Individual Study.** (1-4) Prerequisite: Permission of the instructor. Supervised investigation of a sociological topic. May be repeated for credit; up to six hours may be applied to the major. (Fall, Spring, Summer)

**SOCY 4090. Topics in Sociology.** (1-3) Prerequisite: SOCY 1101. Examination of specialized sociological topics. Examples: Sociology of religion, Modern Japan. May be repeated for credit. (On demand)

**SOCY 4091. Topics in Sociology – Writing Intensive.** (1-3) (W) Prerequisite: SOCY 1101. Examination of specialized sociological topics. Examples: Sociology of religion, Modern Japan. May be repeated for credit. (On demand)

**SOCY 4110. Sociology of Aging.** (3) Cross-listed as GRNT 4110. Prerequisite: SOCY 1101 or permission of the instructor. Study of the changing characteristics, aspirations, and needs of older adults and their impact upon such institutions as the family, work, the economy, politics, education, and health care; emphasis on sociological theories of aging, contemporary research, and the analysis of specific aging policies and programs. (Fall)

**SOCY 4111. Social Inequality.** (3) Prerequisite: SOCY 1101. Distribution of power, privilege, and prestige; correlates and consequences of inequality; national and international comparisons. (Yearly)

**SOCY 4115. Organizational Sociology.** (3) Prerequisite: SOCY 1101 or permission of instructor. The sociological analysis of formal organizations. Organizational structures, practices, internal processes, and their relationships with the external environment. Organizations as rational instruments designed to achieve predetermined goals, as human groups where spontaneous social interactions take place, and as organisms situated in broader social, cultural, and economic contexts.

**SOCY 4122. Sociology of the Community.** (3) Prerequisite: SOCY 1101. Concepts and methods of community analysis of planned and unplanned community change. (On demand)

**SOCY 4125. Urban Sociology.** (3) Prerequisite: SOCY 1101 or permission of instructor. Cross cultural analysis of urban development, social structure, ecology, demographic composition, and social problems. (Yearly)

**SOCY 4130. Sociology of Health and Illness.** (3) Prerequisite: SOCY 1101 or permission of instructor. The cultural and structural influences on the definition of health and illness; models of illness behaviors; health demography and epidemiology; social influences on the delivery of health care; ethical issues surrounding health and illness; and the development of relevant social policy. (Yearly)

**SOCY 4131. Family Policy.** (3) Prerequisite: SOCY 1101 or permission of instructor. Critical analysis of four aspects of family policy: the historical and cultural factors that have resulted in specific policies affecting the family; the specification of contemporary family policy at both the national and state level; the intended and actual application of existing family policy; and the implications and impact of policies as they are interpreted and implemented. (On demand)

**SOCY 4134. Families and Aging.** (3) Cross-listed as GRNT 4134. Prerequisite: SOCY 1101 or permission of instructor. Theories explaining the formation and functioning of American families with emphasis on the impact of the aging of society. Examination of the current demographic trends and expectations of multigenerational families, as well as the future demands and modifications. (On demand)

**SOCY 4135. Sociology of Education.** (3) Prerequisite: SOCY 1101 or permission of the instructor.
Educational institution; the school class as a social system; the school as a social environment and a complex organization. (Yearly)

**SOCY 4150. Older Individual and Society.** (3) Cross-listed as GRNT 4150. Study of the social and cultural context on the lives of aging individuals in American society. Will include a focus on expectations, social interactions, and psychological well-being in the context of retirement, caregiving, and health. (Yearly)

**SOCY 4154. Contemporary Social Theory.** (3) Prerequisite: SOCY 3153 or permission of instructor. Elements and process of theory construction; contemporary social theories, such as theories of social order and causation, power, class structure, and inequality; group process theories; post-modern theories. (On demand)

**SOCY 4155. Sociological Research Methods.** (4) (W) Prerequisite: SOCY 1101. Formulation of research problems; research designs; social measurement; sampling; collection, analysis, and interpretation of data. Three hours of lecture/discussion and completion of weekly laboratory units. (Fall, Spring)

**SOCY 4155L. Sociological Research Methods Laboratory.** (0) Corequisite: SOCY 4155. Required weekly laboratory session for Sociological Research Methods.

**SOCY 4156. Quantitative Analysis.** (4) Prerequisite: SOCY 1101. Concepts and procedures of sociological analysis; data processing; measurement theory; and quantitative models of analysis. Three hours of lecture/discussion and completion of weekly laboratory units. (Fall, Spring)

**SOCY 4156L. Quantitative Analysis Laboratory.** (0) Corequisite: SOCY 4156. Required weekly laboratory session for Quantitative Analysis.

**SOCY 4165. Sociology of Women.** (3) (W) Cross-listed as WGST 4165. Prerequisite: SOCY 1101 or WGST 1101 and Junior standing or permission of the instructor. Examines how the social world of women is influenced by their race, ethnicity, and class. Attention is given to changing roles of women in public and private spheres and to the role conflict that arises as women attempt to meet obligation in families, communities, and the workplace. (Yearly)

**SOCY 4168. Sociology of Mental Health and Illness.** (3) (W) Prerequisite: SOCY 1101 or permission of instructor. Mental health and illness in its social context; relationship between social structures and mental health/illness. How social factors affect the definition and treatment of mental disorders; the effects of demographic variables on mental health and illness; the role of social support and stress; the organization, delivery and evaluation of mental health care services; and considerations of mental health care policy. (On demand)

**SOCY 4172. Sociology of Deviant Behavior.** (3) Prerequisite: SOCY 1101 or permission of instructor.

**SOCY 4173. Sociology of Deviant Behavior – Writing Intensive.** (3) (W) Prerequisite: SOCY 1101 or permission of instructor. Systematic analysis and application of theoretical and empirical research pertaining to small groups. (Yearly)

**SOCY 4175. Sociology of Law.** (3) (W) Prerequisite: SOCY 1101 or permission of instructor. The social structure and process of deviant behavior—why and how society and social relations work, especially when violations of major rules take place. How societal definitions create and perpetuate deviance.

**SOCY 4480. Internship in Sociology.** (3-6) Prerequisite: Permission of the department. Research and/or in-service training for selected students in cooperating community organizations. Specified content based upon a contract between student, department, and community organization. May be repeated for credit up to six semester hours. Graded on a Pass/No Credit basis. (Fall, Spring, Summer)

### SOCIAL WORK (SOWK)

**SOWK 1101. The Field of Social Work.** (3) Historical development and philosophy of social work as a profession: personal and societal needs; methods and organizational arrangements; and roles and tasks of social workers. (Fall, Spring, Summer)

**SOWK 2182. Human Behavior in the Social Environment I.** (3) Prerequisite: BIOL 1110, SOCY 1101, and PSYC 1101. Prerequisite or corequisite: SOWK 1101. Human behavior and the social environment in relation to developmental theory and transitions across the life span. (Fall, Summer)

**SOWK 2183. Human Behavior in the Social Environment II.** (3) Prerequisite: SOWK 2182. Human behavior in the social environment in relation to interactions among individuals, families, communities, and larger social systems. (Spring, Summer)

**SOWK 3090. Topics in Social Work.** (1-3) Specialized topics in social work. May be repeated for credit as topics vary. (A list of specific courses offered each term is available through campus course listings.) (Fall, Spring, Summer)

**SOWK 3100. Social Work Research.** (3) Prerequisite: Upper Division standing. Introduction to research
methods and skills used in social work.  (Fall)

SOWK 3120. Diversity and Populations-at-Risk. (3) Prerequisite: Upper Division standing. Issues of race, ethnicity, gender, sexual orientation, social class, age, and ability in social work practice. (Fall)

SOWK 3181. Practice Methods I. (3) Prerequisite: Upper Division standing. Corequisite: SOWK 3482, SOWK 3683. Generalist social work practice methods with an emphasis on working with individuals. (Fall)

SOWK 3182. Practice Methods II. (3) Prerequisite: Upper Division standing, SOWK 3181. Corequisite: SOWK 3483, SOWK 3685. Generalist social work practice methods with an emphasis on working with families and groups. (Spring)

SOWK 3184. Practice Methods III. (3) Prerequisite: Upper Division standing, SOWK 3181. Corequisite: SOWK 3484, SOWK 3685. Generalist social work practice methods with an emphasis on working with communities and large systems. (Spring)

SOWK 3201. Foundations of Social Welfare. (3) (W) Prerequisite: Upper Division standing. History of and current trends in social welfare; values and conflicts that influence social welfare programming. (Fall)

SOWK 3202. Social Welfare Policy. (3) Prerequisite: Upper Division standing and SOWK 3201. Nature and development of social welfare policy; implications of policy for program design and service delivery. (Spring)

SOWK 3482. Field Placement I. (6) Prerequisite: Upper Division standing. Corequisite: SOWK 3181. Directed field experience two days per week under supervision in selected community agencies. (Fall)

SOWK 3484. Field Placement II. (9) Prerequisite: Upper Division standing, SOWK 3181, SOWK 3482, SOWK 3683. A continuation of SOWK 3482, directed field experience three days per week under supervision in selected community agencies. (Spring)

SOWK 3683. Field Seminar I. (1) (O) Prerequisite: Upper Division standing. Corequisite: SOWK3181. Classroom analysis and discussion of the student field placement experience. (Fall)

SOWK 3685. Field Seminar II. (1) (O) Prerequisite: Upper Division standing, SOWK 3181, SOWK 3482, SOWK 3683. Corequisite: SOWK 3182, SOWK 3184. A Continuation of SOWK 3683, classroom analysis and discussion of the student field placement experience. (Spring)

SOWK 3895. Directed Individual Study. (1-4) Prerequisite: Permission of the department. Supervised investigation of a special problem or area of practice. May be repeated for credit. (Fall, Spring, Summer)

SOWK 4100. Ethnicity and Aging. (3) Prerequisite: permission of the instructor. Examines the changing characteristics, goals, and needs of older African-Americans, Asian-Americans, Native Americans, and Hispanics. Provides a diversity of perspectives from which to view the relationship of ethnicity to aging including the impact of the family, work, education, economy, illness, behavior, and health care. (On demand)

SOWK 4101. Social Work Practice with Older Adults. Prerequisite: Permission of the department. Social work practice with older adults with an emphasis on assessment, intervention planning, and implementation. (On demand)

SPAN (SPAN)

SPAN 1201. Elementary Spanish I. (4) For students with limited or no previous experience in Spanish. First course in a two-course sequence to develop competence in culture, speaking and writing, listening and reading comprehension in Spanish. 50% online instruction. (Fall, Spring, Summer) (Evenings)

SPAN 1202. Elementary Spanish II. (4) Prerequisite: SPAN 1201 or equivalent. Second course in a two-course sequence to develop competence in culture, speaking and writing, listening and reading comprehension in Spanish. 50% online instruction. (Fall, Spring, Summer) (Evenings)

Note: All 2000-level courses except for SPAN 2009 fulfill the language requirement of most non-majors. Students should check with an advisor in their own major to determine which third semester course is preferred by their major. SPAN 2050 counts if it is offered in Spanish for 3 credits.

SPAN 2050. Topics in Spanish. (1-3) Prerequisite: SPAN 1202 or permission of the department. Study of a particular facet of the Spanish language, culture or literature. May be repeated for credit as topics vary. (On demand)

SPAN 2105. Spanish Communication Skills Development I. (3) (O) Prerequisite: SPAN 1202, recommended SPAN 2201 be taken concurrently. Fulfills the 2000-level language requirement for non-Spanish majors. Continued practice in all four skills: speaking, listening, reading, writing. (Fall, Spring)

SPAN 2106. Spanish Communication Skills Development II. (3) (O) Prerequisite: SPAN 2201 or permission of the department; recommended SPAN 2202 be taken concurrently. Continued practice in all four skills: speaking, listening, reading, writing. (Fall, Spring)

SPAN 2200. Spanish for Reading Knowledge. (3) Prerequisite: SPAN 1202 or equivalent. Review of
Spanish grammar with emphasis on developing reading skills. Taught primarily in English. Does not count for major or minor credit. (Fall, Spring, Summer)

**SPAN 2201. Intermediate Spanish I. (3)**
Prerequisite: SPAN 1202 or permission of the department; recommended SPAN 2105 be taken concurrently. Continued training in grammar. Intensive practice in reading, writing, and speaking. (Fall, Spring)

**SPAN 2202. Intermediate Spanish II. (3)**
Prerequisite: SPAN 2201 (2201L also recommended) or permission of the department; also recommended SPAN 2106 be taken concurrently. Builds on skills acquired in the first semester intermediate level. Introduces advanced grammatical concepts. (Fall, Spring)

**SPAN 2210. Introduction to Spanish for Commerce. (3)**
Prerequisite: SPAN 1202 or permission of the department. Fundamentals of commercial Spanish, study of the language, protocol, and cultural environment of the Spanish-speaking business world. Basic business vocabulary, cultural concepts, and grammatical review through situational practice. Fulfills the 2000-level language requirement for non-Spanish majors. (On demand)

**SPAN 2211. Spanish for Criminal Justice Professionals. (3)**
Prerequisite: SPAN 1202 or permission of the department. Fulfills the 2000-level language requirement for non-Spanish majors. (Fall, Spring)

**SPAN 2212. Spanish for Health Care Professionals. (3)**
Prerequisite: SPAN 1202 or permission of the department. Fulfills the 2000-level language requirement for non-Spanish majors. (Spring)

**SPAN 3009. Masterpieces of Hispanic Literature in English. (3) (W)**
Prerequisites: sophomore standing and ENGL 1102, or permission of instructor. Advanced studies of Spanish or Spanish-American literature in English translation. Knowledge of Spanish not required. Not applicable toward a Spanish major or minor. May be repeated for credit as topics vary. Course conducted in English. (On demand)

**SPAN 3019. Hispanic Women Writers in English. (3) (W)**
Cross-listed as LTAM 3319 and WGST 3019. Prerequisite: ENGL 1102 and sophomore standing, or permission of instructor. Examination of prose and poetry by women writers from Spain and the Americas to understand women’s voices and other cultures. Conducted in English. Knowledge of Spanish not required. Not applicable toward Spanish major or minor. (On demand)

**SPAN 3029. Cultural Dimension of Doing Business with Spanish-Speaking Countries. (3)**
Prerequisite: ENGL 1102 or 1103. Development of cultural awareness for conducting business with Spanish-speaking countries and U.S. Hispanic communities. Conducted in English. Not applicable toward Spanish major or minor. (Alternate years)

**SPAN 3030. Business and Culture in the Hispanic Caribbean Region. (3)**
Prerequisite: ENGL 1102 or 1103. Development of intercultural understanding and communication skills for conducting business in the greater Hispanic Caribbean region. Conducted in English. Not applicable toward Spanish major or minor. (Alternate years)

**SPAN 3050. Topics in Spanish. (1-3)**
Prerequisite: SPAN 2202 or equivalent. Study of a particular facet of the Spanish language, culture, or literature at the 3000 level not covered by other SPAN courses. May be repeated for credit as topics vary. (On demand)

**SPAN 3160. Studies in Hispanic Film. (3)**
The study of Spanish Peninsular, Spanish American, or Hispanic/Latino films. Not applicable toward Spanish major or minor. Course conducted in English. May be repeated for credit as topics vary. (Yearly)

**SPAN 3201. Advanced Grammar and Composition. (3)**
Prerequisite: SPAN 2202 or permission of the department. Advanced studies in Spanish grammar, composition, syntax, and rhetoric. Not applicable toward Spanish major or minor. Course conducted in English. May be repeated for credit as topics vary. (Fall, Spring)

**SPAN 3202. Advanced Conversation and Composition. (3)**
Prerequisite or corequisite: SPAN 3201, 3202, or permission of the department. Study and practice of formal, academic presentations and reports both written and oral. Introduction to concepts in elocution and phonetics. Native and heritage speakers of Spanish may take SPAN 3203 in lieu of SPAN 3201 and SPAN 3202, but they must also take one additional 3000- or 4000-level Spanish course. (Fall, Spring)

**SPAN 3203. Advanced Writing and Rhetoric for Native Speakers. (3)**
Prerequisites: SPAN 2202 or permission of the department; and student must be a native speaker of Spanish, as determined by the student’s advisor. Continued studies in Spanish grammar, composition, syntax, and rhetoric for academic purposes. This course may be taken in lieu of SPAN 3201 and SPAN 3202, plus one additional 3000- or 4000-level Spanish course. (Fall, Spring)

**SPAN 3208. Introduction to Literary Analysis. (3)**
Prerequisite or corequisite: SPAN 3201, 3202, or 3203 or permission of the department. Continued work with vocabulary building and reading skills. Introduction to the theory and practice of reading literary texts in Spanish. (Fall, Spring)

**SPAN 3209. Spanish Civilization and Culture. (3)**
Prerequisite or corequisite: SPAN 3201, 3202, 3203 or permission of the department. Introduction to the cultural heritage of peninsular Spain. (Alternate semesters)

**SPAN 3210. Spanish American Civilization and
culture. (3) Prerequisite or corequisite: SPAN 3201, 3202, 3203 or permission of department. Introduction to the cultural heritage of Spanish America. (Alternate semesters)

SPAN 3211. Introduction to Spanish Peninsular Literature. (3) Prerequisites: SPAN 3201, 3202, or 3203, or permission of the department. Prerequisite or corequisite: SPAN 3208. Introduction to the literary heritage of Spain. Reading and analysis of representative works. (Fall, Spring)

SPAN 3212. Introduction to Spanish American Literature. (3) Prerequisites: SPAN 3201, 3202, or 3203, or permission of the department. Prerequisite or corequisite: SPAN 3208. Introduction to the literary heritage of Spanish America. Reading and analysis of representative works. (Fall, Spring)

SPAN 3220. Spanish for Business and International Trade. (3) Prerequisites: SPAN 3201, 3202, or 3203, or permission of the department. Introduction to spoken and written language of the Spanish-speaking business world. Acquisition of and practice with general commercial terminology used in Spanish for such functional business areas as economics, management, marketing, finance, and import-export. (Fall, Spring)

SPAN 3800. Directed Individual Study. (1-3) Prerequisite: permission of the department; normally open only to Spanish majors and minors. Individual work on a selected area of study. To be arranged with the instructor during the preceding semester. By special permission only. May be repeated for credit. (On demand)

SPAN 4050. Selected Topics in Spanish. (1-3) Prerequisites: two 3000-level courses or permission of the department. Consideration of a predetermined topic not covered by other Spanish courses. May be repeated for credit as topics vary. (On demand)

SPAN 4120. Advanced Business Spanish I. (3) Prerequisites: SPAN 3201, 3202, or 3203 and SPAN 3220 or permission of the department. Advanced studies in Business Spanish, intensive intercultural communication practice in speaking, listening comprehension, reading, writing, and translation/interpretation in functional business areas such as economics, management, banking, accounting, real estate, office systems, and human resources. (Fall)

SPAN 4121. Advanced Business Spanish II. (3) Prerequisites: SPAN 3201, 3202, or 3203 and SPAN 3220 or permission of the department. Advanced studies in Business Spanish, intensive intercultural communication practice in speaking, listening comprehension, reading, writing, and translation/interpretation in functional business areas such as goods and services, marketing, finance, and import-export. (Spring)

SPAN 4122. Studies in Advanced Business Spanish. (3) Cross-listed as LTAM 4322. Prerequisites: SPAN 3201, 3202, 3203 and SPAN 3220 or permission of the department. Advanced studies in special topics in Business Spanish (e.g., Tourism in Spain and Latin America, Free Trade in the Americas [NAFTA/TLCAN, Mercosur, The Andean Pact, CAFTA-DR], Socioeconomic Issues in the Greater Caribbean, Business and Technology in Latin America and Spain). May be repeated for credit as topics vary. (On demand)

SPAN 4201. Nineteenth-Century Spanish Literature. (3) Prerequisite: SPAN 3211 or 3212, or permission of the department. Survey of peninsular literature from Costumbrismo through the Generation of 1898. (Alternate years)

SPAN 4202. Twentieth-Century Spanish Literature. (3) Prerequisite: SPAN 3211 or 3212, or permission of the department. Treatment of major literary developments from the Generation of 1898 to present day. (Alternate years)

SPAN 4205. Novel of the Golden Age. (3) Prerequisite: SPAN 3211 or 3212, or permission of the department. Lazarillo through El Criticón. (Alternate years)

SPAN 4206. Theater of the Golden Age. (3) Prerequisite: SPAN 3211 or 3212, or permission of the department. Study of works of the leading dramatists of the period. (Alternate years)

SPAN 4210. Studies in Spanish American Poetry. (3) Prerequisite: SPAN 3211 or 3212, or permission of the department. Studies of colonial, post-independence, 20th-century, and contemporary Spanish American poetry. May be repeated for credit if topic varies. (Alternate years)

SPAN 4211. Studies in Spanish American Prose Fiction. (3) Prerequisite: SPAN 3211 or 3212, or permission of the department. Studies of colonial, post-independence, 20th-century, and contemporary Spanish American prose fiction. May be repeated for credit if topic varies. (Alternate years)

SPAN 4212. Studies in Spanish American Theater. (3) Prerequisite: SPAN 3211 or 3212, or permission of the department. Studies of colonial, post-independence, 20th-century, and contemporary Spanish American theater. May be repeated for credit if topic varies. (On demand)

SPAN 4213. Cervantes. (3) Prerequisite: SPAN 3211 or 3212, or permission of the department. Study of Cervantes’ masterpiece, Don Quijote, and/or other representative works. (Alternate years)

SPAN 4214. Studies in Hispanic Children’s Literature. (3) Cross-listed as LTAM 4314. Prerequisite: SPAN 3211 or 3212, or permission of the department. Literary works in Spanish written for children. May be repeated for credit if topic varies. (On demand)

SPAN 4215. Studies in Regional Literature of the Americas. (3) Cross-listed as LTAM 4315. Prerequisite: SPAN 3211 or 3212, or permission of the department. Studies of Mexican, Central
American, Caribbean, Andean, Amazonian, or Southern Cone literature. Readings from representative works. Works from non Spanish speaking areas read in Spanish translation. May be repeated for credit as topics vary. (On demand)

SPAN 4216. Social, Political, Cultural, Economic Issues in Hispanic Literature. (3) Cross-listed as LTAM 4316. Prerequisite: SPAN 3211 or 3212, or permission of the department. Contextual issues surrounding Hispanic literature. (On demand)

SPAN 4217. Topics in Hispanic Culture and Civilization. (3) Cross-listed as LTAM 4217. Prerequisite: SPAN 3211 or 3212, or permission of the department. Various topics involving the fine arts: music, dance, art, film. May be repeated for credit if topic varies. Applicable toward Spanish major or minor only when taught in Spanish. (On demand)

SPAN 4231. Spanish Phonetics. (3) Prerequisite: Two courses at the 3000-level or permission of the department. Detailed analysis, description, and production of Spanish sounds. Practical exercises with phonetic transcription and recordings. (On demand)

SPAN 4232. Spanish Linguistics. (3) Prerequisites: two courses at the 3000-level. Introduction to different fields of Spanish linguistics studies: sociolinguistics, synchronic and diachronic perspectives of phonetics, morphology, syntax, and semantics. (On demand)

SPAN 4233. History of the Spanish Language. (3) Prerequisites: two courses at the 3000-level. Strongly recommended to have completed SPAN 4232. The evolution of Spanish from Latin and the effects of this evolution on Spanish phonetics, morphology, syntax, and semantics. (On demand)

SPAN 4400. Honor's Thesis. (3) Prerequisite: at least 21 hours of Spanish at the 3000-level and above completed with a 3.5 GPA. Directed research and writing of an Honor's thesis. (On demand)

SPAN 4409. Service Learning in the Hispanic Community. (3) Prerequisite: Permission of the instructor. Service is assigned Hispanic Community Service agency for 90 hours, as well as academic projects such as: journals, reports, research papers, and final oral presentations. (Fall, Spring)

SPAN 4410. Professional Internship in Spanish. (1-6) Prerequisite: Honors status or permission of the department. Faculty-supervised field and/or research experience in a cooperating profession (e.g., business) or community organization within the Hispanic Community. Contents of internship based upon a contractual agreement among the student, department, and business or community organization. Graded on a Pass/No Credit basis. (Fall, Spring, Summer)

SPAN 4800. Directed Individual Study. (1-3) Prerequisite: permission of the department; normally open only to Spanish majors and minors. Individual work on a selected area of study. To be arranged with the instructor, generally during the preceding semester. By special permission only. May be repeated for credit. (On demand)
SPED 3800. Individual Study in Special Education. (1-6) Prerequisite: Admission to Teacher Education; admission to Special Education Program; and permission of the student’s advisor. Independent study under the supervision of an appropriate faculty member. May be repeated for credit. (Fall, Spring, Summer)

SPED 4000. Topics in Special Education. (1-6) Prerequisites: Admission to Teacher Education and Special Education Program. May include classroom and/or clinical experiences in the content area. With department approval, may be repeated for different topics. (Fall, Spring, Summer)

SPED 4111. Issues in Early Intervention for Young Children with Disabilities. (3) Prerequisite: Completion of CHFD 2000 level courses with the exception of students who articulate with an AA or AAS degree and are required to take CHFD 2111; open to CHFD majors and minors with GPA of at least 2.5 overall and 2.75 in the major. Explores issues and evidence-based practices for young children with disabilities and their families in home, school, and community settings. (Fall, Summer)

SPED 4112. Authentic Approaches to the Assessment of Young Children with Disabilities: Birth-Kindergarten. (3) Prerequisites: Admission to Teacher Education; GPA of at least 2.5 overall, 2.75 in the major; and SPED 4111. Develops competence in evaluation, design, implementation, and interpretation of culturally appropriate, interdisciplinary assessment approaches within the context of the young child’s natural environments and in partnership with families that lead to appropriate intervention plans for children with disabilities. A field-based clinical assignment of approximately 20 hours is required. (Spring)

SPED 4170. Special Education: Consultation and Collaboration. (W) (3) Prerequisites: Admission to Teacher Education; admission to Special Education Program; SPED 3100; SPED 3173; and SPED 3175. The course is designed to provide students an opportunity to develop their knowledge base and expertise in consultation and collaboration with parents, General Education teachers, paraprofessionals, related service personnel, and/or human service personnel. This knowledge base includes the development of effective communication skills, understanding the influence of cultural diversity when working with families, professional development goal setting, and effective supervision of paraeducators. Literature case required. (Fall)

SPED 4210. Developmental Interventions for Young Children with Disabilities: Birth through Kindergarten. (3) Prerequisites: Admission to Teacher Education, GPA of at least 2.5 overall and 2.75 in the major, SPED 4111, and SPED 4112. A field-based clinical assignment of approximately 20 hours is required. (Fall)

SPED 4270. Classroom Management. (3) Prerequisite: Admission to Teacher Education; admission to Special Education Program; SPED 3100; SPED 3173; and SPED 3175. This course equips students with the knowledge and skills of applied behavior analysis (ABA) as an approach for programming effective interventions for children and youths with disabilities. It focuses specifically on “positive behavior support” (PBS), a research-validated approach to interventions designed to prevent problem behavior, encourage environmental management, and promote students’ positive and appropriate behavior. This course will also prepare students to conduct a functional behavioral assessment (FBA) in order to more efficiently and effectively identify the interventions to address the students’ behavioral needs. The desired outcomes of this course are for students to have a basic understanding of ABA, FBA, and PBS as well as to apply these principles in a classroom setting for students with disabilities. Clinical field experience hours required. (Spring)

SPED 4271. Systematic Instruction in the Adapted Curriculum. (3) Prerequisite: Admission to Teacher Education; admission to Special Education Program; SPED 3100; SPED 3173; and SPED 3175. This course will provide students with effective teaching strategies and materials in math for learners with special needs for teacher licensure in Special Education: General Curriculum (NCDPI). A 12-hour field-based clinical experience is a required component of the course. Assessment and application of instructional techniques are included in the course. (Fall)

SPED 4272. Teaching Mathematics to Learners with Special Needs. (3) Prerequisites: Admission to Teacher Education; admission to Special Education Program; SPED 3100, SPED 3173, and SPED 3175. This course focuses on strategies for developing curricular priorities for students who need adaptations to the general curriculum including ways to link to state standards in reading, math, writing, science, and other content areas. This is a clinical intensive course requiring 12 hours classroom experience. (Spring)

SPED 4274. General Curriculum Access and Adaptations. (3) Prerequisite: Admission to Teacher Education; admission to Special Education Program; SPED 3100; SPED 3173; and SPED 3175. This course focuses on strategies for developing curricular priorities for students who need adaptations to the general curriculum including ways to link to state standards in reading, math, writing, science, and other content areas. This is a clinical intensive course requiring 12 hours classroom experience. (Spring)

SPED 4275. Teaching Reading to Elementary Learners with Special Needs. (3) Prerequisites: Admission to Teacher Education; admission to Special Education Program; SPED 3100; SPED 3173; and SPED 3175. This course will provide effective prevention and intervention strategies for addressing the needs of elementary students with disabilities and diverse learning needs. Assessment and application of instructional strategies are included in the course. A semester-long 10-hour field experience is a required component. (Spring)

SPED 4276. Teaching Reading to Middle and Secondary Learners with Special Needs. (3)
Prerequisites: Admission to Teacher Education; admission to Special Education Program; SPED 3100; SPED 3173; SPED 3175; SPED 4170; and SPED 4275. This course will provide effective remedial and intervention strategies for addressing the needs of middle and secondary students with disabilities and diverse learning needs. Assessment and application of instructional strategies are included in the course. A 6-hour field experience is a required component. (Fall)

SPED 4277. Teaching Written Expression to Learners with Special Needs. (3) Prerequisites: Admission to Teacher Education; admission to Special Education Program; SPED 3100; SPED 3173; and SPED 3175. This course will provide students with effective teaching strategies and materials in teaching written expression to learners with special needs. Assessment and application of instructional strategies are included in the course. A semester-long 12-hour field experience is a required component. (Spring)

SPED 4279. Content-Area Instruction for Students with Special Needs. (3) Prerequisites: Admission to Teacher Education and Special Education Program; SPED 3100; and SPED 4275. This course will provide strategies for collaborative instruction, instructionally relevant use of computer-based technology, and strategic instruction to improve access of students with disabilities in the general curriculum with an emphasis on content-area instruction at the middle and secondary levels: English, science, social studies, and mathematics. Application of instructional strategies are included in the course. A semester-long 10-hour field experience is a required component. (Fall)

SPED 4280. Multiple Disabilities. (3) Prerequisites: Admission to Teacher Education and Special Education Program; SPED 3100; SPED 3173; SPED 3175; and SPED 4270. This course will describe various secondary disabling conditions that sometimes occur in conjunction with intellectual disability such as physical disabilities, sensory disabilities, and other health impairments. Assessment, instructional methods and procedures, and collaborative service delivery with related services personnel are studied. A field-based clinical assignment of approximately 12 hours is required. (Fall)

SPED 4316. Transition Planning and Service Delivery. (3) Prerequisites: Admission to Teacher Education and Special Education Program; SPED 3100; SPED 3173; and SPED 3175. Methods and procedures used in preparing students with disabilities for the world of work and independence are studied. A field-based clinical assignment of approximately 15 hours is required. (Fall)

SPED 4475. Student Teaching/Seminar: Special Education K-12: General Curriculum. (O) (15) Prerequisites: Admission to Teacher Education; admission to Special Education Program; application to Student Teaching; completion of electronic portfolio Evidence 2 and Evidence 3. Student teaching is a planned sequence of experiences in the student's area of specialization conducted in an approved school setting under the supervision and coordination of a university supervisor and a cooperating teacher. During student teaching the student must demonstrate the competencies identified for his/her specific teaching field in an appropriate grade level setting. The student is assigned 15 weeks in a school setting. In addition, the student participates in 8-10 on-campus seminars scheduled throughout the semester. (Fall, Spring)

SPED 4476. Student Teaching/Seminar: Special Education K-12 Adapted Curriculum. (O) (15) Prerequisites: Admission to Teacher Education; admission to Special Education Program; application to Student Teaching; completion of electronic portfolio Evidence 2 and Evidence 3. Student teaching is a planned sequence of experiences in the student's area of specialization conducted in an approved school setting under the supervision and coordination of a university supervisor and a cooperating teacher. During student teaching the student must demonstrate the competencies identified for his/her specific teaching field in an appropriate grade level setting. The student is assigned 15 weeks in a school setting. In addition, the student participates in 8-10 on-campus seminars scheduled throughout the semester. (Fall, Spring)

SPED 4000. Topics in Special Education: Dual Seminar. (1) Prerequisite: candidates must be applying to Teacher Education and considering admission to the BA in Elementary and Special Education (K-6) Dual Major Program. This seminar will be used to inform candidates of the licensure requirements, plan of study sequence, field experience requirements and importance of progression through the dual program as outlined in the planning sheet. Candidates will also be introduced to the philosophical foundations of a dual teacher preparation program. (Fall)

SPEL 4171. Special Education: Consultation and Collaboration in Elementary Schools. (3) (W) Prerequisite: Admission to Teacher Education. The course is designed to provide students an opportunity to develop their knowledge base and expertise in consultation and collaboration with parents, General Education teachers, paraprofessionals, related service personnel, and/or human service personnel. This knowledge base includes the development of effective communication skills, understanding the influence of cultural diversity when working with families, professional development goal setting, and effective supervision of paraeducators. (Fall)

SPEL 4477. Student Teaching/Seminar: Special Education General Curriculum and Elementary Education K-6 (Dual Program). (15) (O) A planned sequence of experiences in the student's area of specialization conducted in an approved school setting under the supervision and coordination of a
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<th>STATISTICS (STAT)</th>
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<tr>
<td><strong>STAT 1220. Elements of Statistics I (BUSN). (3)</strong> Prerequisite: MATH 1100 or placement by the department. Non-calculus based introduction to data summarization, discrete and continuous random variables (e.g., binomial, normal), sampling, central limit theorem, estimation, testing hypotheses, and linear regression. Applications of theory will be drawn from areas related to business. May not be taken for credit if credit has been received for STAT 1221 or 1222. <em>(Fall, Spring, Summer) (Evenings)</em></td>
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<tr>
<td><strong>STAT 1222. Introduction to Statistics. (3)</strong> Prerequisite: MATH 1100 or placement by the department. Same topics as STAT 1220 with special emphasis on applications to the life sciences. May not be taken for credit if credit has been received for STAT 1220 or 1222. <em>(Fall, Spring)</em></td>
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<tr>
<td><strong>STAT 2122. Introduction to Probability and Statistics. (3)</strong> Prerequisite: MATH 1242 or permission of the department. A study of probability models, discrete and continuous random variables, inference about Bernoulli probability, inference about population mean, inference about population variance, the maximum likelihood principle, the minimax principle, Bayes procedures, and linear models. <em>(Fall, Spring, Summer) (Evenings)</em></td>
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<td><strong>STAT 2223. Elements of Statistics II. (3)</strong> Prerequisite: Either STAT 1220, STAT 1221, STAT 2122, STAT 2122 or permission of the department. Topics include contingency analysis, design of experiments, more on simple linear regression, and multiple regression. Computers will be used to solve some of the problems. <em>(Fall)</em></td>
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<tr>
<td><strong>STAT 3110. Applied Regression. (3) (W)</strong> Prerequisite: STAT 2122 or permission of the department. Ordinary regression models, logistic regression models, Poisson regression models. <em>(Spring)</em></td>
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<td><strong>STAT 3122. Probability and Statistics I. (3)</strong> Cross-listed as MATH 3122. <em>(Fall) (Evenings)</em></td>
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<td><strong>STAT 3123. Probability and Statistics II. (3)</strong> Cross-listed as MATH 3123. <em>(Spring) (Evenings)</em></td>
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<tr>
<td><strong>STAT 3126. Applied Statistical Methods. (3)</strong> Prerequisites: MATH 3123 or permission of the department. Regression analysis, time series analysis, and forecasting. Survival models and their estimation. <em>(On demand)</em></td>
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<tr>
<td><strong>STAT 3128. Probability and Statistics for Engineers. (3)</strong> Prerequisite: MATH 2241. An introduction to probability theory; discrete and continuous random variables and their probability distributions; joint probability distributions; functions of random variables and their probability distributions; descriptive statistics; point and interval estimation; one and two sample hypothesis testing; quality control; one and two factor ANOVA; and regression. Credit will not be given for both STAT 3128 and any of these courses: STAT 2122, MATH/STAT 3120/3123.</td>
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<td><strong>STAT 3140. Design of Experiments. (3)</strong> Prerequisite: STAT 2122 or permission of the department. Randomization and blocking with paired comparisons, Significance tests and confidence intervals, experiments to compare k treatment means, randomized blocks and two-way factorial designs, designs with more than one blocking variable, empirical modeling, factorial designs at two levels. <em>(Fall) (Alternate years)</em></td>
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<td><strong>STAT 3150. Time Series Analysis. (3)</strong> Prerequisites: STAT 2223 or permission of the department. Stationary time series models, ARMA processes, modeling and forecasting with ARMA processes, ARIMA models for nonstationary time series models, spectral densities. <em>(Spring) (Alternate years)</em></td>
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<tr>
<td><strong>STAT 3160. Applied Multivariate Analysis. (3)</strong> Prerequisite: STAT 2223 or permission of the department. Introduction to the fundamental ideas in multivariate analysis using case studies. Descriptive, exploratory, and graphical techniques; introduction to cluster analysis, principal components, factor analysis, discriminant analysis, Hotelling T² and other methods. <em>(Fall)</em></td>
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<td><strong>STAT 4116. Statistical Computing. (3)</strong> Prerequisites: STAT 3123 or permission of the department. Introduction to a variety of computational techniques using various statistics software packages (S-Plus/R or SAS) and symbolic manipulation software packages. Topics include random number generation, density estimation, and re-sampling techniques (bootstrap, jackknife) and Gibbs sample. <em>(Spring)</em></td>
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<td><strong>STAT 4123. Applied Statistics I. (3)</strong> Prerequisites: MATH 2164 with a grade of C or above and Junior standing, or permission of the department. Review of stochastic variables and probability distributions, methods of estimating a parameter, hypothesis testing, confidence intervals, contingency tables. Linear and multiple regression, time series analysis. <em>(Fall) (Evenings) (Alternate years)</em></td>
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TEACHING ENGLISH AS A SECOND LANGUAGE (TESL)

TESL 4103. Methods in Teaching English as a Second Language. (3) Prerequisite: Completion of MDSK 3151 and TESL 4204. For future teachers of English as a Second Language who wish to master a variety of approaches, methods and techniques of teaching ESL and other competencies prescribed by the state of North Carolina. Clinical hours required. (Spring)

TESL 4104. Authentic Assessment. (3) An exploration of the variety of assessments and evaluations used specifically for English Language Learners (ELLs) in the K-12 public schools. For current and future teachers to develop multiple criteria assessment models and to master other competencies related to the assessment of ELLs within the mainstream and ESL classroom, as prescribed by the State of North Carolina. Clinical hours required. (Fall)

TESL 4204. Inclusive Classrooms for Immigrant Students. (3) An introduction to the general issues related multicultural education and to the teaching of English Language Learners (ELLs) in diverse classroom and school contexts. Topics include current demographics and immigration trends, legal issues, second language and identity development of immigrant students, the development of academic English, modifying course content to meet the needs of ELLs. Clinical hours required. (Fall or Spring)

TESL 4300. Second Language Development in K-12 Classrooms. (3) An introduction to the English language as a system, with a particular focus on teaching English as a second language in K-12 public school settings. Topics include: first and second language acquisition processes; English phonology, morphology, and syntax; implications for teaching English language learners the four language skills – listening, speaking, reading, and writing; and implications for teaching in the content areas. (Fall or Spring)

TESL 4469. Advanced Seminar/Practicum in Teaching English as a Second Language. (3) Prerequisite: Permission from the department for admission to student teaching; must be taken prior to or in conjunction with student teaching in the major. A planned sequence of experiences within a high-needs ESL school setting under the supervision of a TESL faculty member. Concepts, methods, and practices used by effective teachers of English Language Learners (ELLs) in their daily classroom routines, including systematic observation skills, interpretation of observation data, and application of research-based findings. Extensive observations and implementation of modified lesson plans for ELLs required. Seminar topics vary. (On demand)

TESL 4600. Literacy Development for Second Language Learners. (3) An introduction to the challenges associated with first language literacy, second language literacy, and second language development. Examinations of the interaction between language, literacy, and culture and their implications for additive models of literacy instruction in a non-native and/or heritage language in diverse K-12 settings. Clinical hours required. (Fall or Spring)

THEATRE (THEA)

THEA 1100. Exploration of Voice and Movement. (3) (O) Creative and effective communication of ideas through the use of the body and voice. Will include physical and vocal technique, improvisation and group problem solving. Four contact hours. (Fall, Spring)

THEA 1140. The Theatre Experience. (3) This course explores the theatre experience through basic concepts of playmaking, from the script’s meanings to director’s, designer’s, and actors’ choices. It also considers how certain plays, performed in specific ways, might affect various people in the audience today. Plays from different historical periods will be read, discussed, and seen onstage in the Department of Theatre season. (Fall)

THEA 1160. Creative Drama for the Classroom Teacher. (3) Drama and theatre as tools for exploring the processes of synthesis, creativity, divergent thinking, and experiential and authentic learning. (Fall)

THEA 1201. Theatre Collaboration. (3) Prerequisite: THEA 1140. This course applies the theoretical knowledge of the first required course for majors, Theatre Experience, with a practical application. Students participate in the collaborative creation, adaptation, or re-presentation of a play, production, or performance process from three perspectives: dramaturgy, performance, and design/production. The process results in a final class project performance or presentation. Four contact hours. (Spring)

THEA 1202. Introduction to Technical Theatre. (3) Students will be introduced to production in theatre through individual/group activities. Study and practice of scenery construction, electrical theory, and costume construction as well as theatre lab safety and operation. Three contact hours. (Fall, Spring)

THEA 1600. Majors and Minors Seminar. (0) Course consists of regular monthly meetings to disseminate and discuss department information and issues. Second monthly meeting consists of workshops on various aspects of the profession. May be repeated. Graded on a Pass/No Credit basis. (Fall, Spring)

THEA 1860. Preliminary Experience in Student
Teaching. (1) Prerequisite: THEA 1160. Observation of licensed theatre arts teachers at the secondary school level. Some participation in class activities required. Graded on a Pass/No Credit basis. (Fall, Spring)

THEA 2140. Play Analysis. (3) Tools for developing the interpretation of the play script, including exploration of the ways scripts are used by directors, actors, designers, and dramaturges in preparing plays for the stage. Theatre major/minor or permission of instructor required. (Spring)

THEA 2141. Dramaturgy I. (3) (W) Prerequisites: THEA 1140 and THEA 2140. This course will explore two plays in the Theatre Department's current production season, through dramaturgical research and essay writing. The writing of performance reviews and program notes will also be practiced. Students will do historical research on the plays, playwrights, and prior productions. Students will also learn to apply current theories and cultural concerns to specific points in each play, developing new meaning for staging the plays today. (Spring)

THEA 2200. Introduction to Design for the Stage. (3) Introduction to the fundamental elements and principles used in creating design, and their application in theatrical design and directing. Students practice creating visual compositions and learn the vocabulary necessary for communicating about design. The course focuses on analyzing how the elements and principles of design are used in scenic, costume, lighting, and sound design, as well as directing. Three contact hours. (Fall, Spring)

THEA 2201. Acting I. (3) (O) The goal of this course is to provide the student with an overview of the inner technique of an actor and an understanding of actor script analysis. With references to the work of Richard Bolaslavski and Konstantin Stanislavski and a variety of exercises and scene work, students will learn to key their performances through the use of objectives and strategies. Four contact hours. (Fall, Spring)

THEA 2215. Stage Makeup. (3) Prerequisite: THEA 1202 or permission of instructor. Theories and techniques of applying and designing stage makeup. (Spring)

THEA 2220. Costume Techniques. (2) Prerequisite: THEA 1202 or permission of instructor. Corequisite: THEA 2220L. Introduction to costume shop equipment, sewing techniques, and construction of costume accessories. (Fall)

THEA 2220L. Costume Techniques Laboratory. (1) Corequisite: THEA 2220. Exploration of costume shop materials and construction procedures. Three laboratory hours per week. (Fall)

THEA 2401. Production Practicum. (1) Practical application of production work in the areas of scenery, lighting, sound, costuming, properties, publicity, box office, house management, and stage management. May be repeated for credit. (Fall, Spring)

THEA 2402. Performance Practicum: Theatre. (1) Prerequisite: Audition. Practical application of performance techniques within a production setting, including auditions, rehearsals, and performances. May be repeated for credit. (Fall, Spring)

THEA 2460. Practicum in Creative Drama: K-8. (3) Prerequisite: THEA 1160 or permission of instructor. Study and application of advanced theories, concepts, competencies, and processes unique to primary and middle school settings, with particular attention to the various subject areas. Centered on in-school teaching experience and clinical practice. (Spring)

THEA 2640. Playwriting/Screenwriting. (3) Writing plays for stage or screen and performing dramatic readings of fellow writers' scenes. (On demand)

THEA 2670. Stage Management. (3) An introduction to Stage Management through theory and practice as it relates to live performance and the arts. (Fall, Spring)

THEA 3130. Ancient, Medieval, and Asian Theatre. (3) Prerequisite: Junior standing or above. The history and drama of ancient Greek, ancient Roman, medieval European, and traditional Asian forms of theatre. (Alternate years)

THEA 3131. Renaissance European Theatre. (3) Prerequisite: Junior standing or above. The history and drama of Renaissance European theatre, including Shakespeare. (Alternate years)

THEA 3132. 17th to Early 20th Century Theatre. (3) Prerequisite: Junior standing or above. The history and drama of European and American theatre, from the Restoration period to early twentieth-century realism and various antirealist movements. (Alternate years)

THEA 3133. Contemporary Theatre. (3) Prerequisite: Junior standing or above. The history and drama of twentieth and twenty-first century theatre in America, Europe, Africa, and elsewhere. (Alternate years)

THEA 3134. Costume History. (3) Introduction to historical origins and evolution of clothing including social and economic factors that influenced development. (Alternate Springs)

THEA 3201. Acting II. (3) Prerequisite: A grade of B or above in THEA 2201 (majors only) or by audition. The goal of this course is to increase the intermediate acting student's awareness of the principles of an organic based acting technique and to aid them in establishing through exercises and scene work their own working methodologies within the art form. References will include works written by Konstantin Stanislavski and Robert Lewis. Areas of focus will include objectives, obstacles, strategies, play script scoring, rehearsal protocol, and applied research. Four contact hours. (Fall)

THEA 3202. Audition Techniques. (3) Prerequisite: THEA 1202 or permission of instructor. The goal of
this course is to give the intermediate to advanced student actor an understanding of the business of acting and the skills needed for one to be considered for employment. Students will be taken through a variety of mock auditions including ones for theatre, film, and commercial work. Areas of focus include the preparation of headshots, resumes, websites, portfolios, and cover letters. Four contact hours. (On demand)

THEA 3203. Acting for the Camera. (3) Prerequisite: A grade of B or above in THEA 2201. The goal of this course is to give the intermediate to advanced student actor an overview of a successful acting technique for the creation of performances in television, motion pictures, and commercials. Through exercises and on camera scene work, students will learn how to mold organic acting technique elements to the subtle technologically based demands of the various media. Four contact hours. (On demand)

THEA 3205. Voice for the Actor. (3) Prerequisite: A grade of B or above in THEA 2201. The goal of this course is to help the student develop clear and efficient use of their vocal instrument, and to develop range and flexibility to create a multitude of roles. Students will be taken through exercises developed by leading voice practitioners such as Catherine Fitzmaurice, Kristin Linklater, and Patsy Rodenburg. Areas of focus include pitch, volume, resonance, rhythm, projection and articulation. Four contact hours. (On demand)

THEA 3206. Movement for the Actor. (3) Prerequisite: A grade of B or above in THEA 2201. The goal of this course is to help the student develop clear and efficient use of their physical instrument, and to develop range and flexibility to create a multitude of roles. Students will be taken through exercises developed by leading physical theatre practitioners including work on Viewpoints, Alexander Technique and Commedia Dell’Arte mask work. Areas of focus will include balance, articulation, rhythm, center and relationship to space. Four contact hours. (On demand)

THEA 3220. Advanced Costume Techniques. (3) Prerequisite: THEA 2220 or permission of instructor. In-depth exploration of pattern development, draping, fabric modification, and construction of accessories. (Alternate Springs)

THEA 3221. Directing I. (3) Prerequisite: THEA 2201 or permission of instructor. Principles and techniques of play directing including analyzing texts, staging, and communication with actors. (Fall)

THEA 3230. Scenic Design I. (3) Prerequisite: THEA 2200. An introduction to scenic design theory and techniques for theatre, dance, and opera. (Fall)

THEA 3250. Lighting Design I. (3) Cross-listed as DANC 2251. Prerequisite: THEA 2200. An introduction to lighting design theory and techniques for theatre, dance, and opera. (Fall, Spring)

THEA 3260. Advanced Lighting Technology. (3) Prerequisite: THEA 1202 or permission of instructor. In-depth exploration of dimming, control, paperwork, modern instrumentation. (On demand)

THEA 3265. Introduction to Computer Aided Drafting 2D. (3) Prerequisite: THEA 1202 or permission of instructor. An introduction to precision drafting and rendering using the computer. (On demand)

THEA 3270. Costume Design I. (3) Prerequisite: THEA 2200. An introduction to costume design theory and techniques for theatre, dance, and opera. (Spring)

THEA 4140. Performance Theory. (3) (W) Prerequisite: Junior standing or above and Theatre major/minor or permission of instructor required. Application of different perspectives to drama on the page, stage, and screen using various performance theories and approaches: semiotics, deconstruction, psychoanalysis, feminism, post-colonialism, and performance studies. (Fall on demand)

THEA 4160. Theatre for Youth. (3) An examination of the important works in the genre of Theatre for Youth with an emphasis on playwrights and analysis of content as it relates to social issues. (Alternate Fall)

THEA 4165. Methods of Facilitating Learning in Theatre Arts. (3) (W) Prerequisites: THEA 1860, THEA 2460, and EDUC 2100; Junior standing or permission of instructor. Exploration of pedagogical methodologies in theatre arts and the application of theory to the classroom setting. Includes instructional planning and competencies for theatre arts courses. Includes clinical experience. (Alternate Fall)

THEA 4201. Acting III: Realism and Naturalism. (3) Prerequisite: A grade of A in THEA 3201. The goal of this course is to instruct the advanced acting student on the use of an organic based acting technique in the creation of roles in realistic and naturalistic plays. Focusing on Chekhov, Williams, O’Neill and Mamet scene work, the student will be instructed on research, script analysis, and performance techniques. Four contact hours. (On demand)

THEA 4202. Acting III: Elizabethan and Jacobean. (3) Prerequisite: A grade of A in THEA 3201. The goal of this course is to instruct the advanced acting student on the use of an organic based acting technique in the creation of roles in Elizabethan and Jacobean plays. Focusing upon Shakespeare,
Marlowe, and Jonson scene work, the student will be instructed on research, script analysis, and performance techniques. Four contact hours.  

(On demand)

THEA 4203. Acting III: Period Styles. (3) Prerequisite: A grade of A in THEA 3201. The goal of this course is to instruct the advanced acting student on the use of an organic based acting technique in the creation of roles in the plays of Moliere and various Restoration comedies, as well as some Ancient Greek texts. Focusing upon Moliere, Wycherley, and Congreve scene work, the student will be instructed on research, script analysis, and performance techniques. Four contact hours.  

(On demand)

THEA 4204. Acting III: Experiential and Alternative. (3) Prerequisite: A grade of A in THEA 3201. The goal of this course is to instruct the advanced acting student on the use of an organic based acting technique in the creation of roles in modern experimental and alternative plays. Focusing upon Brecht, Artaud, and other contemporary devising stylists, the student will be instructed on research, script analysis, and performance techniques. Four contact hours.  

(On demand)

THEA 4205. Stage Dialects. (3) Prerequisite: A grade of B or above in THEA 3201 or THEA 3205. The objective of this course is to provide the student with a process in dialect acquisition. Upon completion of the course the student will have a basic understanding of the International Phonetic Alphabet (IPA), demonstrate knowledge of specific vowel and consonant changes for dialects covered, and be able to demonstrate specific dialects through performance. Four contact hours.  

(On demand)

THEA 4221. Directing II. (3) Prerequisite: THEA 3221. Continuation of THEA 3221, with emphasis on advanced analysis, coaching, communication with designers, and complex staging problems.  

(Spring on demand)

THEA 4230. Scenic Design II. (3) Prerequisite: THEA 3230 or permission of instructor. Advanced scenic design theory and projects.  

(Alternate Spring)

THEA 4231. Drawing for the Theatre. (3) Prerequisite: THEA 2200. Semester-long course in foundational drawing concepts developed for students of the theatre. Discrete exercises will explore a variety of entry points into drawing what the eye sees free from old habits, as well as strengthening clear graphic communication in theatrical sketching and rendering. Three contact hours.  

(Alternate Fall)

THEA 4233. Scenic Painting. (3) Prerequisite: THEA 1202 or permission of instructor. An introduction to basic scenic painting techniques, paint media, and materials.  

(Spring on demand)

THEA 4234. Stage Properties. (3) Prerequisite: THEA 3230. This course is an introduction to the work of a theatre props department. Focuses on the functions and role of the Properties Manager in the production process. The course will also address several common properties fabrication techniques through hands-on projects. Three contact hours.  

(On demand)

THEA 4235. Welding and Metal Working. (3) Prerequisite: THEA 1202. This course covers the equipment, materials, and techniques used in the welding and cutting processes most often employed in the manufacturing of scenery. These include: oxyfuel gas welding and cutting, shielded metal arc welding, gas metal arc welding, and tungsten gas arc welding.  

(On demand)

THEA 4236. Audio Engineering. (3) Prerequisite: THEA 1202. This course covers the basic techniques of controlling, editing and distributing of sound and audio for the theatre. Emphasis on system design, equipment use, and sound systems integration. Three contact hours.  

(On demand)

THEA 4250. Lighting Design II. (3) Prerequisite: THEA 3250 or permission of instructor. Advanced lighting design theory and projects.  

(Alternate Fall)

THEA 4270. Costume Design II. (3) Prerequisite: THEA 3270 or permission of instructor. Advanced costume design theory and projects.  

(On demand)

THEA 4400. Internship in Theatre. (3-6) Cross-listed as THEA 5400 (see Graduate Catalog). Prerequisite: GPA of a least 2.5, junior status, and permission of department chair. Research and/or in-service training for theatre majors and minors in cooperating organizations. Specific content is based upon a contract between the students, department, and professional organization. Graded on a Pass/No Credit basis. (Fall, Spring, Summer)

THEA 4460. Practicum in Secondary School Play Production: 9-12. (3) Cross-listed as THEA 5460 (see Graduate Catalog). Prerequisites: THEA 2201 and THEA 3221 or permission of instructor. Study and application of advanced theories, concepts, competencies, and processes in theatre arts for teaching the specialized areas of production and performance in a secondary school setting (9-12).  

(Alternate Spring)

THEA 4467. Student Teaching/Seminar: K-12 Fine and Performing Arts: Theatre. (15) (0) Prerequisite: approved application for student teaching; senior status; completion of professional education requirements; grades of C or above in all courses required for licensure. Corequisite: enrollment only in student teaching. A planned sequence of experiences in the student's area of specialization conducted in an approved school setting under the supervision and coordination of a University supervisor and a cooperating teacher in which the student demonstrates the competencies identified for his/her specific teaching field in an appropriate grade level setting.  

(Fall, Spring)

THEA 4600. Senior Project. (1) Prerequisite: Senior standing. Synthesis, integration, and application of
theoretical and experiential study in theatre through individual/group project. Students, working with a mentor, will prepare a paper, performance project or portfolio presentation in their area of emphasis. One contact hour. (Fall, Spring)

THEA 4601. Individual Project. (1-6) Prerequisite: Permission of department chair. May be repeated for credit. (Fall, Spring, Summer)

THEA 4610: Advanced Design, Technology, & Management. (2-3) Prerequisite: Permission of instructor. Large-scale applications of design and production topics on realized productions. May be repeated for credit. (On demand)

THEA 4670. Theatrical Production Management Techniques. (3) Prerequisite: THEA 2670. A study of management techniques needed by all of those who perform a management role in the performing arts. Topics include communication skills, team building, assertiveness, goal setting, time management, stress management and an overview of production organizations. This will be accomplished with thorough discussion of texts and actual production experiences. Three contact hours. (On demand)

THEA 4800. Directed Independent Study. (1-3) Prerequisite: Permission of the instructor and the department, major in Theatre or Theatre Education with Junior or Senior standing, and a GPA of at least 2.5. This course is designed to allow students to pursue faculty-directed independent study topics (1) of special interest to the student, (2) within the area of the instructor’s special competence, (3) not provided by other Department offerings. May be repeated for credit. (On demand)

**TRANSLATING (TRAN)**

TRAN 3401. Introduction to Translation Studies. (3) Prerequisites: Native or near native fluency in English and completion of FREN, GERM, or SPAN 2202, or the equivalent, with a grade of C or above. History, theory, pragmatics, and procedures of the field of translation. Introduction to text typology, terminology, and issues such as register, audience, editing, and computer-assisted translating. Conducted in English. (Fall)

TRAN 4402-F. Practicum in Translating I – French. (3) Pre or co-requisites: TRAN 3401 and a FREN 3000-level course or equivalent, with a grade of C or above, or permission of the department. Comparative stylistics, restructuring texts, editing, troubleshooting, and techniques of the translator in working with a variety of text types. Conducted in English and French. (Spring, Alternate years)

TRAN 4402-J. Practicum in Translating I – Japanese. (3) Pre- or corequisites: TRAN 3401 and JAPN 3202 or equivalent, with a grade of B or above, or permission of the department. Comparative stylistics, restructuring texts, editing, troubleshooting, and techniques of the translator in working with a variety of text types. Conducted in English and Japanese. (Fall, Alternate years)

TRAN 4402-R. Practicum in Translating I – Russian. (3) Pre- or corequisites: TRAN 3401 and a RUSS 3000-level course or equivalent, with a grade of B or above, or permission of the department. Comparative stylistics, restructuring texts, editing, troubleshooting, and techniques of the translator in working with a variety of text types (documents, essays, fiction, poetry). Conducted in English and Russian. (Spring, Alternate years)

TRAN 4402-S. Practicum in Translating I – Spanish. (3) Pre- or corequisites: TRAN 3401 and a SPAN 3000-level course or equivalent, with a grade of C or above, or permission of the department. May count as coursework for the Spanish major. Understanding audience, text typologies, register, and regionalism. Continues with theory of translation. Conducted in English and Spanish. (Fall, Alternate years)

TRAN 4403-F. Practicum in Translating II – French. (3) Prerequisites: TRAN 4402-F, with a grade of C or above, or permission of the department. Critical analysis of different kinds of texts; translating for specific audiences; problems of terminology; development of working dictionaries in fields(s) of specialization. Conducted in English and French. (Fall, Alternate years)

TRAN 4403-G. Practicum in Translating II – German. (3) Prerequisites: TRAN 4402-G, with a grade of C or above, or permission of the department. Critical analysis of different kinds of texts; translating for specific audiences; problems of terminology; development of working dictionaries in fields(s) of specialization. Conducted in English and German. (Fall, Alternate years)

TRAN 4403-R. Practicum in Translating II – Russian. (3) Prerequisites: TRAN 4402-R with a grade of B or above, or permission of the department. Further work in restructuring texts, editing, troubleshooting. Pragmatic/cultural issues of translation in dealing with a variety of text types (documents, essays, fiction, poetry) as well as the specifics of film translating. Conducted in English and Russian. (Fall, Alternate years)

TRAN 4403-S. Practicum in Translating II – Spanish. (3) Prerequisites: TRAN 4402-S and a SPAN 3000-level course or equivalent, each with a grade of C or above, or permission of the department. Emphasizes commercial, financial, legal, political, medical, and scientific translation. Continues with history and theory of translation.
Conducted in English and Spanish. May be taken concurrently with TRAN 4404-S and may also count as coursework for the Spanish major. (Spring)

TRAN 4404-F. Practicum in Translating III – French. (3) (W) Pre- or corequisite: TRAN 4403-F, with a grade of C or above, or permission of the department. Study of professional journals, technologies, protocol, and resources in the field (e.g., ATA, ALTA). Advanced issues of translation. Translation of a semester-long project in individual consultation. Conducted in English and French. (Spring, Alternate years)

TRAN 4404-G. Practicum in Translating III – German. (3) (W) Pre- or corequisite: TRAN 4403-G, with a grade of C or above, or permission of the department. Study of professional journals, technologies, protocol, and resources in the field (e.g., ATA, ALTA). Advanced issues of translation. Translation of a semester-long project in individual consultation. Conducted in English and German. (Spring, Alternate years)

TRAN 4404-R. Practicum in Translating III – Russian. (3) (W) Prerequisite: TRAN 4403-R, with a grade of B or above, or permission of the department. Study of professional journals, technologies, protocol, and resources in the field (e.g., ATA, ALTA). Advanced issues of translation. Translation of a semester-long project in individual consultation with instructor. Conducted in English and Russian. (Spring, Alternate years)

TRAN 4404-S. Practicum in Translating III – Spanish. (3) (W) Prerequisites: TRAN 3401 or TRAN 4402-S, and a SPAN 3000-level course or equivalent, each with a grade of C or above, or permission of the department. Emphasizes literary, cultural, and consumer-level translation. Conducted in English and Spanish. May be taken concurrently with TRAN 4403-S and may also count as coursework for the Spanish major. (Spring)

UCOL 1000. College Transition for First-Year Students. (1-3) Prerequisite: Freshman standing. Designed to assist with the intellectual and social transition from high school to college by increasing the involvement of students in the intellectual life of the campus; providing an orientation to resources available to students; and promoting problem solving and writing skills. Students who have previously taken any UCOL 1000-level course may not receive credit for this course. Graded on a Pass/No Credit basis. (Fall, Spring)

UCOL 1010. College Transition for Transfers. (3) (W) Designed to assist with the intellectual and social transition to UNC Charlotte for transfer students by increasing the involvement of students in the intellectual life of the campus; providing an orientation to resources available to students; and promoting problem solving and writing skills. Students who have previously taken any UCOL 1000-level course may not receive credit for this course. May not be repeated for grade replacement. (Fall, Spring)

UCOL 1011. College Transition for Transfers. (1-3) (O) Designed to assist with the intellectual and social transition to UNC Charlotte for transfer students by increasing the involvement of students in the intellectual life of the campus; providing an orientation to resources available to students; and promoting problem solving and writing skills. Students who have previously taken any UCOL 1000-level course may not receive credit for this course. May not be repeated for grade replacement. (Fall, Spring)

UCOL 1200. First Year Seminar. (3) A seminar-style learning experience focused around a particular theme that is designed to assist with the intellectual and social transition from high school to college by increasing the involvement of students in the intellectual life of the campus; providing an orientation to resources available to students; and promoting problem solving and writing skills. Students who have previously taken any UCOL 1000-level course may not receive credit for this course. May not be repeated for grade replacement. (Fall, Spring)

UCOL 1205. Enrichment Seminar. (1-3) A seminar-style learning experience designed to enrich the education experience of one or more courses taken concurrently. The enrichment seminar is focused around a particular theme defined by the companion course(s) and provides opportunities to explore the topics of the course(s) in more detail and with additional materials, experiences, and assignments. The enrichment seminar will also address the college transition experience by enhancing students’ involvement with and knowledge of the campus and its resources and promoting problem solving and oral and written communication skills. Open to new first-year students only; requires co-registration in designated companion section(s) as indicated. May be repeated once for credit as topics vary. (Fall, Spring)

UCOL 1206. Enrichment Seminar. (1-3) A seminar-style learning experience designed to enrich the education experience of one or more courses taken concurrently. The enrichment seminar is focused around a particular theme defined by the companion course(s) and provides opportunities to explore the topics of the course(s) in more detail and with additional materials, experiences, and assignments. The enrichment seminar will also address the college transition experience by enhancing students’
involvement with and knowledge of the campus and its resources and promoting problem solving and oral and written communication skills. Open to new first-year students only; requires co-registration in designated companion section(s) as indicated. Graded on a Pass/No Credit basis. May be repeated once for credit as topics vary. (Fall, Spring)

UCOL 1210. Transfer Seminar. (3) (W) A seminar-style learning experience focused around a particular theme that is designed to assist with the intellectual and social transition to UNC Charlotte for transfer students by increasing the involvement of students in the intellectual life of the campus; providing an orientation to resources available to students; and promoting problem solving and writing skills. Students who have previously taken any UCOL 1000-level course may not receive credit for this course. May not be repeated for grade replacement. (Fall, Spring)

UCOL 1211. Transfer Seminar. (3) (O) A seminar-style learning experience focused around a particular theme that is designed to assist with the intellectual and social transition to UNC Charlotte for transfer students by increasing the involvement of students in the intellectual life of the campus; providing an orientation to resources available to students; and promoting problem solving and oral communication skills. Students who have previously taken any UCOL 1000-level course may not receive credit for this course. May not be repeated for grade replacement. (Fall, Spring)

UCOL 1300. Academic Success Seminar. (2) Prerequisite: Permission of the department. This course is designed to assist continuing university students with the development of study and problem solving skills. The course emphasizes using academic support resources, engaging in campus life, and enhancing academic performance. Students who have previously received credit for UCOL 1000, 1010, 1011, 1200, 1210, or 1211 may not receive credit for this course. May not be repeated for grade replacement. (Fall, Spring)

UCOL 1305. Peak Performance Success Seminar. (1) Prerequisite: Permission of the department. This course is designed to assist continuing students with the development of study and problem solving skills. The course emphasizes using academic support resources and campus resources to enhance academic performance. There is one required initial meeting with the instructor; all assignments are submitted online. May not be repeated for grade replacement. (Fall, Spring)

UCOL 2000. Topics in General Education. (3) Prerequisites: sophomore standing and permission of the sponsoring department. Topics chosen from the fields covered by General Education in order to demonstrate relationships and interdisciplinary influences. May be repeated for credit as topics vary with permission of the student’s major department. Can be used toward general degree requirements as indicated each time the course is offered. (On demand)

UCOL 2200. University Learning Seminar. (1-3) Prerequisite: permission of University College. Provides instruction in digital literacy, critical thinking, problem solving, and written and oral communication skills. Each section will be developed around a content theme selected from instructor’s discipline. Designed to reinforce and augment students’ intellectual and social transition to the University learning environment. Students who have previously taken a UCOL 1000-level course may receive credit for this course if registering with permission. (Fall, Spring)

UCOL 3050. Teaching Internship. (1-3) Prerequisite: Junior standing and permission of the sponsoring unit and supervising instructor. Students enrolled in the internship will have a structured opportunity to develop teaching-related skills by providing assistance to faculty in the classroom and/or working in a structured mentoring role in support units such as the University Center for Academic Excellence. Duties will vary depending upon the assignment but may include: conducting review sessions, facilitating study skills sessions, lecturing, assisting faculty member with exams. May be repeated for credit up to six hours. Graded on a Pass/No Credit basis. (Honors) (Fall, Spring)

UCOL 3800. Independent Study. (3) Prerequisite: Permission of instructor and Dean of University College. Individual research, research, or file-based experience in a topic under the supervision of a faculty member. May be repeated for credit with permission. (On demand)

URBS 2200. Introduction to Urban Studies. (3) Cross-listed with GEOG 2200. A survey course exploring the diverse perspectives and experience of North American Cities. Lectures and discussions will focus on the development, organization, function, and meaning of urban areas, as well as the multiple and complex relationships that exist between cities and the people who live and work within them. (Fall, Spring)

URBS 3050. Topics in Urban Studies. (3) Timely and important areas of scholarship and application relevant to urban studies. May be repeated for credit as topics vary with prior permission from Director of the Urban Studies Minor. (On demand)

URBS 3801. Independent Study. (1-3) Prerequisites: URBS 2200, declared Urban Studies Minor with Junior or Senior standing, a GPA of at least 2.0, permission of supervising instructor and Director of Urban Studies Minor. Area of study beyond the scope of current offerings to be devised by student and faculty member. May be repeated. Three hours of URBS 3801 may be used toward the URBS minor with prior approval of the Director of Urban Studies Minor. (Fall, Spring, Summer)

URBS 4401. Internship in Urban Studies. (3)
Prerequisites: URBS 2200, declared Urban Studies minor with Junior or Senior standing, a GPA of at least 2.0 and permission of Director of Urban Studies Minor. Students work 8-10 hours per week (total 120 hours per semester) for 3 credit hours in an approved research or in-service placement relevant to urban studies. Specific content of internship based on a contract between the student, supervising professor, and community/corporate organization. May not be repeated for credit. Graded on a Pass/No Credit basis. (Fall, Spring, Summer)

WOMEN’S AND GENDER STUDIES (WGST)

WGST 1101. Introduction to Women's Studies. (3) Introduction to values associated with gender and basic issues confronting women in society, from a variety of cultural and feminist perspectives. (Fall, Spring)

WGST 2050. Topics in Women's Studies. (1-3) Credit hours vary with topics. Special topics in Women's Studies. May be repeated for credit as topics vary. (On demand)

WGST 2051. Topics in Women's Studies. (3) (W) Special topics in Women's Studies. May be repeated for credit as topics vary. (On demand)

WGST 2110. Women and the Media. (3) Cross-listed as COMM 2110. Examination of messages about women as conveyed in contemporary media (magazines, newspapers, videos, the Internet, video games, television, and movies.) The role of gender in the power structures of the media producers is also analyzed. (Fall)

WGST 2120. African American Women. (3) Cross-listed as AFRS 4120. This course explores how cultural, political, historical and economic factors shape African American women’s positions and opportunities in society today. (On demand)

WGST 2123. Women in Cross-Cultural Perspective. (3) Cross-listed as ANTH 2123. A cross-cultural survey of the lives of women and the dynamics of gender throughout the world. Uses anthropological research to examine how gender influences evolution, social stratification, work, kinship, and perceptions of the body. (Alternate years)

WGST 2130. Masculinity and Manhood. (3) This course examines the construction of masculinity in sports, family, work and other social relationships, showing how it shapes and is shaped by people, institutions and society. (On demand)

WGST 2140. Gender and Sport. (3) Explores the gendered nature of sports and the impact of feminist theory on the study of sport. Areas of focus include historical developments, media and representation, race and ethnicity, masculinity, sexuality, and physicality and power. (On demand)

WGST 2150. U. S. Women's History to 1877. (3) Cross-listed as HIST 2150. A survey of women’s experience in the U. S. from colonization through the civil war and reconstruction. Special emphasis on the evolution of women’s public roles and the impact of class, race, and region in shaping women’s lives. (Alternate years)

WGST 2160. Introduction to Lesbian and Gay Studies. (3) Provides an overview of historical, sociopolitical, and psychological influences on the development of current day lesbian and gay social movements and cultures. (On demand)

WGST 2170. Gender and Globalization. (3) Examines how globalization interacts with and influences gender roles around the world. Specific topics include the effect of globalization on the gendered divisions of power, violence, labor, and resources. (On demand)

WGST 2251. U.S. Women's History since 1877. (3) Cross-listed as HIST 2151. A survey of women's experience in the U.S. from reconstruction to the present. Special emphasis on work, family, and feminism, and the impact of class, race, and region in shaping women’s lives. (Alternate years)

WGST 2252. European Women's History. (3) Cross-listed as HIST 2152. An exploration of women’s experiences in western Europe and Russia, covering topics of religion, work, family, and politics. (Alternate years)

WGST 2310. Gender, Activism, and Leadership. (3) (W) Students select and complete a community activism project focusing on a gender issue. Key issues and controversies of past and present feminist/social movements, and what activists are doing today. While exploring the components of ethical leadership, students learn how to apply classroom theory to the real world around them. (On demand)

WGST 3019. Hispanic Women Writers in English. (3) (W) Cross-listed as LTAM 3319 and SPAN 3019. Prerequisite: ENGL 1102 and sophomore standing, or permission of instructor. Examination of prose and poetry by women writers from Spain and the Americas or permission of instructor. Examination of prose and poetry by women writers from Spain and the Americas to understand women’s voices and other cultures. Conducted in English. Knowledge of Spanish not required. Not applicable toward Spanish major or minor. (On demand)

WGST 3050. Topics in Women's Studies. (3) Special topics in Women's Studies. May be repeated for credit as topics vary. (On demand)

WGST 3051. Topics in Women's Studies. (3) (W) Special topics in Women's Studies. May be repeated for credit as topics vary. (On demand)

WGST 3102. Changing Realities of Women's Lives. (3) (W) Students select and complete a community activism project focusing on a gender issue. Key issues and controversies of past and present feminist/social movements, and what activists are doing today. While exploring the components of ethical leadership, students learn how to apply classroom theory to the real world around them. (On demand)

WGST 3110. Gender and Communication. (3) Cross-listed as COMM 3110. Examination of the
relationship between language and gender. Topics covered include how language shapes perceptions of men/women; gender differences in verbal and nonverbal communication; and gendered communication in relationships, friendships, and the workplace. (Spring)

WGST 3111. Women in Judaism. (3) Cross-listed as RELS 3111. A survey of the roles and activities of Jewish women throughout Jewish history, as it is portrayed in a diverse sampling of Jewish religious literature and practice. (Alternate years)

WGST 3112. Women's Diaries and Women's Experience. (3) (W) This course examines why women keep diaries, how diaries provide an understanding of women’s experiences, and how diaries may be read as literature. (Fall, Spring)

WGST 3130. Perspectives on Motherhood. (3) Examination of the social, political, and economic conditions surrounding motherhood in the U.S.; explores the history and representations of motherhood, contraceptive-abortion issues, pregnancy and birthing practices, gender-neutral, same-sex, and bi-racial parenting. (Spring)

WGST 3131. History of Sexuality. (3) Cross-listed as HIST 3131. An exploration of the roots of our modern attitudes toward sexuality beginning with ancient Greece and Rome, Judaism, and Christianity. Examination of changing attitudes and practices from the Enlightenment to the Victorians. Discussion of marriage, fertility control, abortion, prostitution, and homosexuality. (On demand)

WGST 3140. Domestic Violence. (3) A survey of domestic violence in the US focusing on female experience as both victim and survivor of partner abuse. We will evaluate theories of partner violence, examine types of abuse across diverse female lifespans, and discuss multicultural and gender expectations, treatment, modalities, and social policy implications. (On demand)

WGST 3150. Body Image. (3) This course will discuss body image through varying perspectives: size discrimination, advertising and consumerism, eating disorders, cosmetic surgery, self-image/male gaze, health vs. beauty, etc. All perspectives will be examined as they are projected across the intersection of sexism, racism, classism, ageism and sexuality. (Yearly)

WGST 3160. Gender and Education. (3) This course explores the relationship between gender and education, primarily in the context of formalized schooling. Topics include the history of women's education; gender identity and socialization; gender discrimination and biases in curriculum and classroom teaching; gender gaps in academic performance; and the relationship between educational choices and gender. (Alternate years)

WGST 3170. Female Adolescence in Film. (3) Study of mainstream and independent films that focus on adolescent girls (or the lack thereof) and the sometimes symbiotic relationship between these films and society. (On demand)

WGST 3180. Gender in Hip Hop Culture. (3) Examines the roles of gender during the Black Power Movement to the ascendency of Hip hop culture in the twenty-first century. Designed to introduce students to the patterns of converging and cross cutting racism, nationalism, and feminism that are vitally important to the hip hop generation. (On demand)

WGST 3212. Women and Peacebuilding. (3) Exploration of the contributions women can make and have made to peacebuilding and conflict-resolution. (On demand)

WGST 3215. Religion and Masculinity. (3) Cross-listed as RELS 3215. An examination of the role of religious discourses and practices in shaping, regulating and evaluating masculine identities and practices. Although the focus of this course may vary, it may only be taken once for credit. (On demand)

WGST 3216. Religion and Sexuality. (3) Cross-listed as RELS 3220. An examination of the role of religious discourses and practices in shaping, understand and evaluating sexual practices, desires and identities. Although the focus of this course may vary, it may only be taken once for credit. (On demand)

WGST 3220. Feminist Thought. (3) (W) Prerequisite: WGST 1101 or permission of the instructor. Cross-cultural and interdisciplinary survey of the main traditions of feminist theory in the context of their historical and philosophical roots. (Yearly)

WGST 3221. Feminist Thought. (3) Prerequisite: WGST 1101 or permission of the instructor. Cross-cultural and interdisciplinary survey of the main traditions of feminist theory in the context of their historical and philosophical roots. (On demand)

WGST 3226. Psychology of Women. (3) Cross-listed as PSYC 3126. Prerequisite: PSYC 1101. Application of research in developmental, experimental, and clinical psychology to issues regarding women and gender. Includes such topics as gender-role development, gender differences in cognitive abilities and performance, psychological perspectives on women’s physical and mental health, and violence toward women. (Spring)

WGST 3230. Women, Work, and Money. (3) This course will explore the relationship of American women to money – as workers, consumers, caregivers, etc. We will examine the dynamics of wealth, poverty, care-giving, mothering, gendering and occupational segregation on the lives of all women, young and old. (On demand)

WGST 3231. Working Women/Women in Business. (3) Historical, sociological, legal, personal, and cross-cultural issues affecting working women. (Summer)
WGST 3310. Gender and Sexuality. (3) An interdisciplinary introduction to gender and sexuality studies. Its primary focus is critical perspectives on the social construction of gender and sexuality, inequalities based on gender and sexuality, activism around issues of gender and sexuality, and how gender and sexuality shape and are shaped by other systems of inequality. (On demand)

WGST 3803. Independent Study. (3) Prerequisite: permission of instructor and Women's Studies Coordinator. Supervised individual study and/or field-based experience in a topic or area of Women's Studies of particular interest to the student. May be repeated for credit. (Fall, Spring)

WGST 3820. Feminist Philosophy. (3) Cross-listed as PHIL 3820. Views of contemporary feminist and female philosophers on traditional philosophical issues such as ethics, human nature, the construction of knowledge, modes of social and political organization, the relationship between the mind and the body, and the nature of God. (Yearly)

WGST 4050. Topics in Women's Studies. (1-3) Prerequisite and credit hours vary with topics. Special topics in Women's Studies. May be repeated for credit as topics vary. (On demand)

WGST 4051. Topics in Women's Studies. (3) (W) Special topics in Women's Studies. May be repeated for credit as topics vary. (On demand)

WGST 4120. Women's Studies International. (3) Cross-listed as INTL 3120. This course will explore policies affecting women's lives across international borders and will look at a range of topics from divorce, marriage, violence against women and abortion to work and poverty. (Fall)

WGST 4130. Female Adolescence in America. (3) This course explores the modern cultural, social and personal experience of young females in America. The central focus of the course will be the social construction of femininity and how it impacts female adolescents. We will examine the influence of race/ethnicity, class, and sexuality upon the lives of female adolescents. (Yearly)

WGST 4131. Culture, Pregnancy and Birth. (3) Cross-listed as ANTH 4131. This course explores how culture shapes the experience and practice of pregnancy and birth. Some of the topics we will explore include the birthing experience, midwifery, infertility, new reproductive technologies, and surrogate motherhood. (On demand)

WGST 4140. African-American Feminism. (3) This course examines the foundations, ideas, concerns and implications of African-American feminism within historical and contemporary United States. The course will center on fostering dialogues and critical discussions about African-American feminism as a site of theory and practice emphasizing social, political, and personal transformation. (On demand)

WGST 4150. Gender, Science, and Technology. (3) Examines select issues related to women and gender in science and technology. Specific topics include the role of women in science, the impact of science and technology on women, and feminist critiques of science and technology. (On demand)

WGST 4160. Race, Sexuality, and the Body. (3) Examines how biological, historical, and cultural interpretations of race and gender influenced and characterized definitions of sexuality and body image among persons of color. (On demand)

WGST 4165. Sociology of Women. (3) Cross-listed as SOCY 4165. Prerequisites: SOCY 1101 or WGST 1101; Junior standing or permission of the instructor. Examines how the social world of women is influenced by their race, ethnicity, and class. Attention is given to changing roles of women in public and private spheres, and to the role conflict that arises as women attempt to meet obligation in families, communities, and the workplace. (Yearly)

WGST 4170. Queer Theory. (3) Introduction to key issues in queer theory, a field of studies that questions and redefines the identity politics of early lesbian and gay studies. Queer theory investigates the socially constructed nature of identity and sexuality and critiques normalizing ways of knowing and being. (On demand)

WGST 4191. Women's Health Issues. (3) Cross-listed as NURS 4191. Prerequisite: Permission of the instructor. Exploration of contemporary issues in women's health from the feminist and women's health movement perspectives. (Fall)

WGST 4228. French Women Writers in Translation. (3) Prerequisites: Junior standing and ENGL 1102 or equivalent. Advanced studies of literature and criticism by French women writers in English translation, with a focus on women's issues from a cross-cultural perspective. May be repeated for credit as topics vary. Course conducted in English. (On demand)

WGST 4260. Women: Middle Age and Beyond. (3) Cross-listed as GRNT 4260 and HLTH 4260. Position of older women in society and the particular problems of and issues for women as they age. (Yearly)

WGST 4401. Internship in Women's Studies. (3) Prerequisites: Declared Women's Studies minor and permission from the Director of Women's Studies. Research and in-service training in cooperative community organizations that provide services to women and their families. Specific content based on a contract between the student, supervising professor, and community organization. Graded on a H/P/NC basis. (On demand)

WGST 4601. Senior Colloquium. (3) Prerequisites: completion of 15 hours in women's studies, or permission of instructor. Critical examination of selected issues. (On demand)
The University of North Carolina at Charlotte provides a comfortable and enjoyable environment for students that is conducive to learning. The services, facilities, and programs of the University promote individual student development and foster a community which promotes the involvement of students in their intellectual, cultural, spiritual, emotional, and physical development.

Students at UNC Charlotte are encouraged to participate in extracurricular activities. Athletics, the Student Government Association, the Campus Activities Board, and Student Media are a few of the available activities that can play a significant role in each student’s development and total education. Participation in activities, ranging in type from service and religious to athletic and social, and from creative arts and crafts to wilderness experiences, increases a student’s opportunities to acquire leadership skills, to experience the responsibilities involved in functioning within a self-governmental process, and to develop personal talents and interests.

**Note:** Students are entitled to participate in several student groups and organizations as long as they are academically eligible to continue their enrollment. However, participation in some activities require students to be in good standing with the University, both academically and in accordance with The Code of Student Responsibility (located elsewhere in this Catalog).

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**Student Life, Resources, and Services**

**Academic Services**

The Academic Services unit at UNC Charlotte enriches the academic community by offering a broad range of initiatives promoting student success, ensuring access, and enhancing the educational experience of all students. Through transition programs, learning communities, support for student-athletes, career services, experiential learning, university-wide honors, disability services, tutorial programs, and initiatives for underrepresented students, Academic Services cultivates life skills critical to successful graduation and global citizenship. Addressing the needs of a diverse student population, Academic Services utilizes an integrated student-centered approach which reinforces rigorous academic expectations and
encourages student engagement from the time of enrollment through graduation.

**ATHLETIC ACADEMIC CENTER**

carlote49ers.com

The Charlotte 49ers Athletic Academic Center provides assistance to all Charlotte varsity student-athletes to achieve academic and personal success at the University by providing support services designed to meet their unique needs and insuring the student athlete’s compliance with all National Collegiate Athletic Association, Atlantic 10 Conference and University regulations. Academic advisors provide academic advising services, priority registration, tutorial services, supervised study sessions, a computer lab, résumé writing assistance, a life skills program, and academic recognition.

**DISABILITY SERVICES**

dis.uncc.edu

The Office of Disability Services works with departments across UNC Charlotte to ensure that educational programs and campus facilities are accessible to individuals with disabilities. Students with disabilities who wish to receive accommodations must provide documentation from their health care provider to Disability Services. After a determination of eligibility is made, students meet with a Disability Services counselor to determine appropriate and reasonable accommodations.

Assistive technology is available to eligible students with disabilities in a variety of locations on campus. Service animals assisting individuals with disabilities are permitted to all facilities on campus. Prescriptive devices, devices of a personal nature, or personal attendant care are the responsibility of the student. Specific accommodation questions should be directed to a Disability Services counselor.

The Office of Disability Services supports a culturally rich, inclusive, and accessible campus environment by providing information and consultation to faculty, staff, and the community.

**HONORS COLLEGE**

honorscollege.uncc.edu

The Honors College at UNC Charlotte offers academically talented, enthusiastic, motivated students many of the personal and intellectual advantages of a small liberal arts college within the diversity of a large university. The emphasis is on seminars, intensive reading, writing, and discussion in which reasoned self-expression and critical thinking are valued and rewarded. The Honors College is comprised of several distinct programs, each with its own standards for admission and requirements for graduation. Unique enrichment opportunities, including scholarships, study abroad, community service, executive shadowing, special lectures, and individualized senior projects are also available. Some exceptionally talented students are enrolled in more than one program. An honors residence option is also available for all students in the Honors College.

**UNIVERSITY HONORS PROGRAM**

Open to talented and highly motivated students of all majors, the University Honors Program (UHP) is designed to challenge and broaden the intellectual growth of UNC Charlotte’s most academically gifted students. Through a series of interdisciplinary courses, cultural enrichment opportunities, a commitment to citizenship and service, and an individually designed senior project, honors students have a unique opportunity to customize their honors curriculum to meet their own specific goals. The interdisciplinary courses fit the theme, “Issues for Human Survival in the 21st Century,” and are designed to confront political, religious, economic, ecological, gender, race, justice, and human rights related issues and their impact on the global community and the human condition. To stimulate discussion and faculty-student interaction, all University Honors Program courses are restricted to a small class size with program permission required for enrollment.

**REQUIREMENTS**

To graduate with University Honors Distinction, students must satisfy the following requirements:

1) Complete two courses (6 hours) from designated honors sections of the General Education Curriculum of LBST 2000-level courses.

2) Complete two (6 hours) UHP Topics courses at the 3000-level.
3) Satisfy the UHP Community Service requirement by completing either LBST 2215 Citizenship, or HONR 2750 Community Service Practicum.

4) Satisfy the UHP Enrichment Requirement by completing either a designated honors section of an LBST 1000-level course or HONR 2701 Enrichment Seminar.

5) Complete HONR 3790 (Honors Senior Project), or an approved discipline-based honors thesis/project, with a grade of A which has been approved by the Honors Program Director and Honors Council.

6) Maintain a minimum overall grade point average of 3.0 and a 3.2 grade point average in University Honors Program designated courses. Maintain “good standing” status through participation in the UHP Student Association.

Honors sections for ENGL 1103 (Accelerated College Writing and Rhetoric) and HONR 1100 (Honors Freshman Seminar) are offered during the fall semester to orient entering freshmen to the philosophy and rigors of the University Honors Program. Students may graduate with dual honors by completing all honors departmental requirements, in addition to UHP requirements. In this case, the departmental thesis will satisfy the UHP thesis requirement.

RESIDENCE
University Honors Program students are encouraged to live in the Honors College Residence, located on the third floor of Witherspoon Hall, which provides an environment especially conducive to study and cooperative learning. The commons area of this floor contains a study/classroom area where honors classes may meet.

STUDY ABROAD
The University Honors Program, in cooperation with the Education Abroad Program, also promotes a comprehensive study abroad program, emphasizing diversity, choice, and flexibility. Although study abroad is not required, it is strongly encouraged.

STUDENT ASSOCIATION
Students in the program are also part of the University Honors Program Student Association. The student-led organization organizes social events, special discussions, student mentoring, and community service projects. All UHP students are expected to attend meetings and participate in community service projects each semester in order to remain in good standing.

ACADEMIC DEPARTMENT AND COLLEGE HONORS PROGRAMS

Many academic departments and colleges also have honors programs permitting students to graduate with honors distinction in their academic discipline or college. Academic departments and colleges that have honors programs include: Anthropology, Arts + Architecture, Art and Art History, Biology, Business, Chemistry, Communication Studies, Computing and Informatics, Criminal Justice, and Criminology, Education, Geography and Earth Sciences, History, Languages and Culture Studies, Latin American Studies, Mathematics and Statistics, Philosophy, Physics and Optical Science, Political Science, Psychology, and Religious Studies. Information on how to apply and graduate with honors from a college or a specific academic discipline can be found in this Catalog under each academic discipline with an honors program.

NORTH CAROLINA TEACHING FELLOWS PROGRAM

The North Carolina Teaching Fellows Program provides $26,000 four-year scholarships annually to 500 high school seniors from across the state. In turn, students must participate in a rigorous and unique four-year teacher preparation program and teach for four years in the public schools of North Carolina. At UNC Charlotte, the NC Teaching Fellows Program fosters scholastic achievement and professional leadership through personal attention and enrichment experiences. Teaching Fellows participate in special activities to complement their involvement in the regular teacher education program. UNC Charlotte’s Teaching Fellows Program features a variety of exciting enrichment experiences such as activities designed to build leadership activities, retreats focused on interpersonal and team building skills, weekly seminars on relevant and timely educational issues and trends, cultural events, community service projects, multicultural/diversity activities, opportunities to participate in the University Honors Program, and early and continuous field experiences in NC public schools. NC Teaching Fellows at UNC Charlotte also benefit from the special guidance of a full-time campus director, an academic advisor, and faculty members in the Colleges of Arts + Architecture, Education, and Liberal Arts & Sciences. Teaching Fellows are housed in the Honors residence hall and receive priority registration. For more information, visit online at education.uncc.edu/tfellows.

PRE-HEALTH PROFESSIONS AND PRE-MEDICAL SCHOOL ADVISING

The Honors College maintains a proactive pre-health advising office to serve undergraduates seeking careers in a variety of health care professions, including, but not limited to: medicine, physical therapy, pharmacy, veterinary medicine, optometry, dentistry, occupational therapy, podiatry, and physician assistant. For details, please see the Preparation for Professional Schools heading later in
SCHOLARSHIPS FOR ADVANCED UNDERGRADUATE AND GRADUATE STUDY

The Honors College coordinates applications for many national scholarships for advanced undergraduate and graduate study. These scholarships, including the Rhodes, the Marshall, The James Madison, The Barry M. Goldwater, the Jack Kent Cooke, the Phi Kappa Phi, and National Science Foundation Fellowships require extensive application procedures and are only awarded to the most outstanding applicants. Only students with exemplary academic records—combined with service and leadership—qualify for these highly selective graduate and, in some cases, advanced undergraduate awards. Most also require an on-campus review and institutional endorsement of completed applications.

LEARNING COMMUNITY PROGRAM

UNC Charlotte’s Learning Community program is transforming the way students live, learn, and succeed in their academic endeavors. Learning Communities help students transition through academic and social challenges by providing small, supportive living and learning environments. Students interact closely with UNC Charlotte faculty, staff and peer mentors through areas of common interest, enroll in 2 or 3 of the same courses and in many cases live together in the same residence hall. Through the Learning Communities, students make friends and develop close relationships.

While most Learning Communities are residentially-based, some of those do not require living on campus; one Learning Community is designed specifically for students living off campus; and other Learning Communities have no residency requirements or components. All are one-year programs designed for freshmen except one that is specifically designed for transfers.

Whether students are interested in business, community service, computing, criminal justice, engineering, English, gender studies, health, history, international relations, leadership, liberal arts and sciences, politics, psychology, teaching, or are not sure yet, they are likely to find a community of interest. Two pre-existing groups also have Learning Communities: Building Educational Strengths and Talents (B.E.S.T.) and University Transitions Opportunity Program (UTOP).

MULTICULTURAL ACADEMIC SERVICES

The Office of Multicultural Academic Services, while open to all students, provides academic support to students of African, Asian, Hispanic/Latino, Pacific Islander, and Native American descent. The Office serves as a clearinghouse for information and referrals to ensure access and long-term academic success of all students.

Services, for individuals and groups, include: secondary academic advising; tutoring in math, science and engineering; weekly study halls; mentoring; workshops; monitoring of academic progress; recognition of academic achievement; personal, cultural and leadership development; resources and referrals for students, faculty and staff; academic support for undergraduate and graduate students. Programs include:

UNIVERSITY TRANSITION OPPORTUNITIES PROGRAM (UTOP)

UTOP is a summer academic program designed to facilitate the transition from high school to the University for students from typically underrepresented populations by involving a limited number of incoming freshmen in a structured collegiate experience prior to fall semester enrollment. Seven hours of credit are awarded for successful completion of UTOP coursework, which consists of English Composition, Supplemental English, and Freshman Seminar. These students have the option of participating in a one-year Learning Community in which students are engaged in coursework and activities that emphasize growth and development in liberal arts education and diversity, and campus connections. Participants continue to enroll in courses together and share living/learning environments during the fall and spring semesters.

STUDENT ADVISING FOR FRESHMAN EXCELLENCE (SAFE)

Co-sponsored by the Office of the Dean of Students, SAFE is a peer mentoring program designed to facilitate the transition from high school to college for all incoming freshmen, with an emphasis on African American, Asian, Hispanic, and Native American students. Through orientation sessions, academic advising, academic issues workshops, mid-semester evaluations, student advising, individual and group tutoring, co-curricular and social activities, and weekly meetings with student counselors, SAFE empowers students to acquire the skills necessary for academic success and the establishment of
rewarding careers. Some students are eligible to participate during the sophomore year.

**PRODUCING READINESS OF DIVERSE UNIVERSITY COHORTS IN EDUCATION (PRODUCE)**

UNC Charlotte is one of the eight schools in the University of North Carolina system that has received a Louis Stokes Alliance for Minority Participation (LSAMP) National Science Foundation Grant to: (1) improve the quality of the learning environment for underrepresented students in science, mathematics, engineering and engineering technology; (2) increase the number of underrepresented students graduating with degrees in science, mathematics, engineering and engineering technology; and (3) develop and implement effective techniques of attracting talented underrepresented students who would otherwise not choose science or engineering as a career. PRODUCE participants receive faculty and peer mentoring, peer tutoring, opportunities to attend professional meetings/conference, internships, and scholarships.

**BUILDING BETTER BROTHERS (B3)**

B3 is a mentoring program designed to assist with academic performance and educational outcomes of male students from traditionally underrepresented populations. Students complete an application of interest and participate in a variety of educational and social programs throughout the year with faculty and staff mentors.

**UNIVERSITY CAREER CENTER**

career.uncc.edu

The University Career Center for Work, Service, and Internships (UCC) offers comprehensive career services designed to assist undergraduate and graduate students in all stages of career development: career decision making, career planning, career employment, and reassessment. Experiential Learning (EL) is a key component and all students are encouraged to take advantage of internships (including 49erships and service internships), cooperative education, and other career exploration programs. With the UCC acting as the coordinating and academic support unit for experiential learning, 60-70 percent of all students at UNC Charlotte participate in a university-sanctioned career-related experience. The Center has over 140,000 student contacts annually but still offers 9-10 personalized Career Counselors and Advisors (along with Peer Career Assistants and Interns) who serve as liaisons to each major and to the University Advising Center for student one-on-one meetings.

The goals of the UCC are: (1) to help all students make and act on career decisions that maximize their potential and long-term development; to enable the timely involvement of students in experiential learning programs; (2) to engage students, faculty, and employers in quality experiential learning programs; and (3) to promote receptivity to and involvement with UNC Charlotte, the colleges, and the students among individuals and organizations outside the University. The UCC serves over 10,000 area and national employers, and also has developed co-op and 49ership programs abroad. Over 50,000 jobs and internships are handled through the office each year.

Services provided by the UCC range from individual career counseling and advising; résumé and cover letter critiques; and videotaped, mock interviews; to small group workshops on such topics as résumé writing, effective interviewing, uncovering the hidden job market, and transitioning from college to the workplace. Other services include résumé referrals to employers, on-campus interviewing, career exploration through various experiential learning programs and a special topic freshman seminar, a career resource library collection, and seven major career fairs and events annually, including the Public Service Career Fair and Career Expo. The UCC also offers a structured self-assessment program to help students better identify interests and majors to align with career choices. The majority of services can be accessed online at career.uncc.edu; through the “My Future” section on the 49er Express at 49erexpress.uncc.edu; or by registering in NinerJobNet, an online job database maintained by the UCC. Online UCC links such as Optimal Résumé, Optimal Interview, Vocational Biographies, H1-B Visa Database, Interfolio for reference letter management, and E-leads for liberal arts majors, are added career information tools for students. An online newsletter is published each semester to inform students about workshops, programs, job fairs, and employers recruiting on campus. Students are encouraged to visit the UCC and to start their experiential learning program and career planning in their freshman year or first semester at the University. The UCC has received national recognition for its “state-of-the-art” program initiatives.

**PART-TIME EMPLOYMENT ON-CAMPUS**

Offered by the Department of Human Resources at UNC Charlotte, the Student Employment Office (200-A King Building) assists students in locating on-campus employment opportunities. The University participates in the federal Work-Study Program and attempts to match students with jobs related to their academic interests. Students are encouraged to limit employment to no more than 20 hours per week to allow for success in a full 15-18 hour course load each semester. More information, including job openings, can be found online at hr.uncc.edu/student-employees.
PART-TIME EMPLOYMENT OFF-CAMPUS

The UCC’s Job Location and Development (JLD) Program assists students in obtaining part-time, summer, and temporary employment off-campus. Some full-time jobs that do not require a degree are also listed. Job listings may be viewed online to students registered in NinerJobNet. Jobs may include career-related positions in various fields such as education, business, entertainment, engineering, graphic design, and healthcare. The JLD Program is available to help students to earn money for their academic and personal expenses during their enrollment at the University.

EXPERIENTIAL LEARNING PROGRAMS

The majority of UNC Charlotte students are expected to and do participate in university-sanctioned experiential learning programs (60-70%). Opportunities are available for both undergraduate and graduate students to receive course credit, transcript notation, or other recognition for supervised experiences in public and private agencies within the community, nationally, and internationally. These opportunities are offered through experiential learning programs including over 450 courses involving clinical rotations, cooperative education, internships, 49erships, and practicums. For full description of related courses, see the Course Descriptions section of this Catalog. The University Career Center (UCC) is the central coordination office for most experiential learning opportunities for the campus and can provide information about the following options:

COOPERATIVE EDUCATION

This career related professional program is available to students in the Colleges of Liberal Arts & Sciences, Business, Computing & Informatics, and Engineering. Participants must be enrolled full-time in a degree program and have a cumulative GPA of at least 2.5 (Master’s level graduate students must maintain a minimum GPA of 3.0) and complete course requirements specified by their department. Transfer students must complete 12 hours at UNC Charlotte before applying to the program. Co-op students work two to three semesters either part-time or full-time (depending on college requirements) with an employer in a paid work experience. Although the experience does not offer academic credit, participants are classified as full-time students and receive transcript notation. Please refer to the list of non-credit courses below.

49ERSHIP PROGRAM

The University Career Center sponsors a non-credit internship called a 49ership. Program participation is especially valuable for students who want career experience and do not have an internship option through their academic major (see Internships paragraph below). Full-time undergraduate students in good academic standing may participate in the program after completing 30 credit hours at UNC Charlotte provided they have a cumulative GPA of 2.0 or better; full-time graduate students must complete nine credit hours in their graduate program before making application and have a cumulative GPA of 3.0 or better. (Transfer students must successfully complete 12 credit hours at UNC Charlotte before making application.) Both a minimum of 5 weeks and a minimum of 80 work hours over one semester are required to complete the program. Fall and Spring 49erships are part-time. Summer 49erships may be full- or part-time. Employers, as well as career advisors, assist students in working toward learning objectives and will complete an evaluation on each student at the end of each term. While the 49ership Program does not offer academic credit, it is noted on the student’s transcript, and students pay a course registration fee. Approval for enrollment must be arranged before the student begins the work experience. Participating employers have included Carolinas Medical Center, the District Attorney’s Office, General Electric, Walt Disney World Co., Duke Energy, Vanguard, Transamerica, and Crisis Assistance Ministries. Fifty to seventy percent (50-70%) of the positions in this program are compensated. Please refer to the list of non-credit courses below.

COURSES

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For a full description of these non-credit Cooperative Education and 49ership Experience courses, please see the Course Descriptions section of this Catalog.

SERVICE OPPORTUNITIES

Service opportunities through the University Career Center include 49erships in non-profit and government agencies and organizations, enabling students to gain career-related and community service experience while learning about related social, civic, human service, and political issues. Please refer to The 49ership Program paragraph above for details.

CAREER PROSPECTOR PROGRAM

The Career Prospector Program program involves “shadowing” professionals in various career fields, many of whom are alumni, parents, and area managers. Students are able to explore career options and academic interests by conducting informational interviews and observing professionals
in the career fields of their choice. The shadowing experiences can last for one day or longer, depending on the schedules of the students and sponsors. Over 200 sponsors in various career fields participate in this program coordinated through the University Career Center.

**INTERNSHIPS**
Internship programs provide an introduction to career options in a professionally related work experience which enables the student to apply classroom learning. This experience is usually unpaid and may offer academic credit if there is appropriate faculty supervision. Students work 8 to 12 hours a week while also taking classes. Students are encouraged to check with their academic department for further information and academic eligibility requirements.

**UNIVERSITY CENTER FOR ACADEMIC EXCELLENCE**

ucae.uncc.edu

Designed to improve academic performance and foster meaningful learning experiences, the University Center for Academic Excellence provides services, programs, and materials to help students develop and refine thinking skills, utilize self-management skills, and learn course material more quickly and thoroughly while earning higher grades. Services include: (1) individual consultations regarding academic concerns; (2) diagnostic assessment of learning styles and study habits/attitudes; (3) computer-assisted instruction for a variety of course subjects; and (4) a library of materials with books, DVDs, and printed handouts outlining successful study/learning strategies. The Center collaborates with various colleges and programs on campus to promote success of undergraduate and graduate students, including a special topics freshman seminar. All services are free to enrolled UNC Charlotte students.

**TUTORIAL SERVICES**
Well-trained undergraduate and graduate students provide free tutoring to University students in a variety of disciplines. Tutoring is primarily in mathematics, sciences, business, and foreign languages and emphasizes both content mastery and learning skills development. Tutors are selected based on their competence in the subject area, faculty endorsements, and their effective interpersonal skills. Tutorial Services at UNC Charlotte has been nationally certified through the College Reading and Learning Association, Level II.

**SUPPLEMENTAL INSTRUCTION (SI)**
SI assists students in historically difficult courses, including biology, chemistry, physics, communication studies, engineering, mathematics, and business. In regularly scheduled group study sessions, trained SI Leaders help students refine the unique skills necessary for doing well in the target course. Students regularly participating in SI average one-half letter grade or higher on final course grades than non-participants.

**STUDENTS OBTAINING SUCCESS (SOS)**
SOS is a peer mentoring program for students on academic probation at UNC Charlotte, designed to help students identify reasons for probation, identify strengths and causes for difficulty, and develop an action plan to improve grades and return to good academic standing. Any student on academic probation is eligible to register for the SOS program. Each participant is assigned a peer mentor for support and guidance. The program lasts for one semester and is tailored to help individuals with specific needs and issues. Participants must commit to meeting weekly with a peer mentor and work to create and follow a personal plan to help regain good academic standing.

**STUDY SMARTER WORKSHOPS**
A wide variety of workshops are offered each semester on topics that strengthen students’ academic success. These highly interactive workshops are lead by staff and trained graduate students on-site and across campus. Topics include Test Prep; Time Management; Procrastination Prevention; Effective Note Taking; Learning Styles; and many more.

**BUILDING EDUCATIONAL STRENGTHS AND TALENTS (BEST)**
BEST helps select populations of students, who have historically faced challenges adapting to college, to settle into the culture of higher education. Students can access intensive advising and a wealth of other academic services (including tutoring) and cultural resources all the way through graduation. However, special emphasis is placed on the early college years. This federally-funded program administers BEST Choices, a Freshman Learning Community; Freshman Seminar; and a Sophomore Experience program as well as initiatives that focus on scholastic success.
Auxiliary Services

In support of the University’s educational mission, Auxiliary Services is responsible for providing goods and services the campus community needs. This includes:

- multi-function 49er ID Card system
- dining venues and meal plans
- on-campus bookstore
- printers and copiers
- parking and transportation services
- mail delivery
- ATM stations and vending machines

49ER ID CARD

Every student’s 49er ID Card displays a photo, name, and a unique student ID number (different from a Social Security number for privacy reasons). The 49er ID Card proves that the student is a member of the campus community and entitled to certain services.

A 49er ID card allows access to:

- campus housing
- campus activities and programs
- athletic events and recreational facilities (i.e., Student Activity Center, Belk Gym)
- computer labs
- Student Health Center

The 49er ID card also serves as a:

- meal plan card
- library card

And holds funds for:

- Optional Dining Account
- 49er Account

To get a 49er ID card, students will need:

1) One valid proof of identification such as a driver’s license, State Issued ID or Passport
2) Proof of university status such as acceptance letter, class schedule, proof of registration or tuition bill
3) Student ID number that begins with 800 (assigned at acceptance; appears on the acceptance letter).

Entering freshmen and transfer students will have their 49er Card made during SOAR. A card may also be obtained at:

49er Card Office
Auxiliary Services Building
Hours: Monday – Friday, 8 a.m. – 5 p.m.
704-687-7337 or 1-877-497-4949

ID Card Office
Student Union, Room 127
Hours: Monday – Friday, 8 a.m. – 5 p.m.
704-687-7040

The 49er ID card can only be used by the student to whom it was issued. Misuse of the identification card will result in disciplinary action. There is a $15 fee to replace lost/stolen identification cards.

49ER ACCOUNT

The 49er Account automatically resides on the UNC Charlotte 49er ID Card. Students simply make a deposit and the account is instantly activated. The 49er Account is accepted in campus vending machines, for printing and copying (including services from the Copy Center), residence hall laundry machines, the Barnes & Noble at UNC Charlotte bookstore, and purchases from the campus Post Office, NinerTech computer store, Campus Salon, Union Station, dining venues, campus convenience stores, and game/event concessions.

The 49er Account spends like cash for products and services all over campus but can’t be used for cash advances or purchases off-campus (although many local businesses offer discounts with proof of UNC Charlotte ID). A 49er Account is safe, secure, can’t go into negative balance, and won’t incur fees like overdraft charges.

There are four ways to deposit funds onto the 49er account: online at aux.uncc.edu, in person at one of our two locations, the 49er Card Office located in the Auxiliary Services Building or the ID Card office located in the Student Union, by mail, or via one of four campus VTS (value transfer) machines. VTS machines are located on the first and second floors of the Atkins Library, the Barnard Computer Commons, and the Residence Dining Hall.

BOOKSTORE

Located in the Student Union, Barnes & Noble at UNC Charlotte offers: new and used textbooks and textbook rental (with online ordering and pre-pack services); general interest, “best sellers” and children’s books; school supplies; computer software; greeting cards and gifts; and the largest selection of UNC Charlotte apparel, gear and
merchandise available. More information is available online at aux.uncc.edu/bookstore and uncc.bncollege.com.

**COPY CENTER**

aux.uncc.edu/copy

UNC Charlotte has a pay-for-print system in most computer labs and in the Atkins Library. A 49er Account is required to pay for print jobs in these areas. The 49er Account may also be used at the REPROS copy center for other copying services such as binding, wide-format printing and other copying and presentation services. REPROS offers full-service and self-service reprographics, and is located on the lower level of the Prospector building.

**DINING ON CAMPUS**

aux.uncc.edu/dining

UNC Charlotte offers a variety of dining locations across campus. Students with meal plans enjoy the all-you-care-to-eat variety of food served in the Residence Dining Hall and Crown Commons. RDH is located near high rise residence halls Moore, Sanford, Scott and Holshouser; Crown Commons is on the second level of the Student Union.

Crown Commons is designed to serve meal plan students and anyone else who loves a satisfying meal limited only by their appetite. Crown Commons offers something to please every taste and mood. Made-to-order choices include: pizza, deli, grilling station, and soup and salad stations. Crown Commons also features international/ethnic fare, vegan/vegetarian entrees, a “home cooking kitchen,” waffle bar, dessert station, and cereal bar.

Bistro 49 in the Student Union offers a sit-down, table service luncheon experience. Bright ambience, an open-kitchen and a nouvelle cuisine menu are just the beginning! Menu changes seasonally.

Main Street Market in the Cone University Center is a weekday lunchtime spot with Chicago UNO Pizza Express, Sub Connection, Use Your Noodle (made-to-order noodle bowls), fresh sushi, Au Bon Pain soups, Outtakes salads and sandwiches, soft drinks, yogurt, juices, and coffee.

Outtakes offers quick cuisine featuring grab-and-go sandwiches, salads, snacks, beverages and more. Outtakes convenience store locations are located in the Student Union, RDH, CRI, and Crossroads buildings. The Crossroads and Student Union location also have a deli counter for made-to-order sandwiches.

Library Café and Fretwell Café, located in Atkins Library and Fretwell respectively, proudly brew Peet’s Gourmet coffees and teas, serving all your favorite coffee-shop drinks along with fresh bakery goods, sandwiches, smoothies, soups-of-the-day, and a large selection of bottled specialty juices, energy, and soft drinks.

Union Square on the main level of the Student Union features popular, national brands such as Wendy’s, EnergyZone, Einstein Bros. Bagels, Starbucks, and Mamma Leone’s.

Prospector (near the McEniry/Friday/Kennedy/Smith academic core) is where you’ll find favorites such as a full menu Chick-fil-A, Feisty’s franks and fries, Salsarita’s, Mamma Leone’s, Smashers, Mondo Subs, a salad bar, and large selection of grab-and-go foods like sushi rolls, pre-made salads, yogurt, fresh fruit, and snack foods.

**MEAL PLANS**

aux.uncc.edu/mealplans

The University offers a variety of meal plans to meet the diverse dining needs of residential students. Students who are assigned housing accommodations in the high-rises — Holshouser, Scott, Moore, and Sanford Halls — and the suites Sycamore, Cedar, Hickory, Hawthorn, Lynch, Oak, and Witherspoon — (all residence halls without private kitchens) must purchase a “required area” meal plan each semester as part of their housing contract. There are five plans from which to choose.

Traditional Meal plans have two parts:

1) The first part is the number of meals provided per week taken in either the Residence Dining Hall or Crown Commons Union Dining, our two all-you-care-to-eat dining facilities. The number of meals allotted resets weekly.

2) The second part is called Declining Balance, or DB. It is a specific allotment of funds that can be used at any campus dining venue, including retail locations such as Einstein Bagels in the
Student Union or Chick-Fil-A in the Prospector building. DB funds can also be used for concessions and for goods from the three Outtakes convenience stores on campus. Food purchased with DB is sales-tax-free.

Block Meal Plans are constructed just like Traditional Meal Plans, in that they consist of two parts: a set number of meals and a specific amount of Declining Balance, “DB” funds. The difference is that Block Plan meals are set by the semester, not by the week.

If a student in “Required” Housing fails to select a meal plan, the University will select a default meal plan. The Student will be charged each semester for a meal plan selection. Renewal is not automatic for students in non-required housing and commuter students. They must select/purchase their meal plan each semester.

During the period of occupancy, UNC Charlotte will provide meals according to the plan selected. However, no board dining meals are provided during Fall break, Thanksgiving break, Winter break, and Spring break (but there are other venues open that take DB and 49er Account).

Declining balance that is part of a meal plan does NOT carry over to future semesters. Meal plans that consist of declining balance only do carry balances over to future semesters through the last summer session of the academic year in which they were purchased. Only students currently enrolled at UNC Charlotte may access accounts. For a detailed list and descriptions of meal plans and their current pricing, see aux.uncc.edu/mealplans.

An Optional Dining Account (ODA) may be used as a stand-alone dining account for commuters and those in non-required housing or to supplement a meal plan. It is not billable through Student Accounts but may be purchased separately through the Meal Plans and 49er Card Office (located in the Auxiliary Services Building) and, the Dining Services Office/I.D. Office (located in the Student Union) by using cash, check, or credit card. Funds can also be deposited to ODA online (aux.uncc.edu). This account may be used for food purchased in all dining and convenience store locations. Food purchased with ODA funds is not taxed, therefore saving up to 9.25%. The Optional Dining Account carries over indefinitely as long as there is not more than six months of inactivity on the account. More at aux.uncc.edu/mealplans.

Students may change the meal plan selected during the registration period, which lasts through the first day of classes. After the first day of classes, students living in required housing (high-rises and suites) will be given one additional opportunity to change their meal plan during the scheduled two-day housing room change period. Any changes to meal plans will result in pro-rated fees. After the two-day room change period, no other meal plan changes may be made for the current semester (unless the student moves off-campus).

Students living in on-campus apartments and off campus may make meal plan changes and cancellations until Fall break for the Fall semester and until Spring break for the Spring semester. Meal plan rates will be pro-rated. No meal plan changes or cancellations may occur after Fall/Spring breaks. This also applies to students who have moved from required housing to apartments during the semester. The first change in meal plans will not incur an administrative processing fee. Subsequent changes in meal plans will incur an additional $25 administrative processing fee for each occurrence. All changes to meal plans or cancellations of the dining service contract must be submitted to the Meal Plans and 49er Card Office (located in the Auxiliary Services Building).

MAIL SERVICES

Mail Services is a fully operational Postal Contract Station located in the Student Union, capable of services equivalent to that of a U.S. Post Office.

UNC Charlotte Mail Services offers a full range of Mail Services including:

- Express Mail-Domestic & International
- Priority Mail-Domestic & International
- Registered Mail
- Certified Mail
- Certificates of Mailings
- Signature/Confirmation Delivery
- USPS Money Orders
- Post Cards
- C.O.D's
- UNC Charlotte Specialty Stamps
- Bulk Mail Services
- Delivery to residence halls

Union Station is UNC Charlotte’s address for shipping, U.S. Passport processing, and graphics services. At Union Station, you’ll find:

- Multi-carrier Package Shipping Service
- Shipping Supplies
- Official U.S. Passport Processing Station
- Campus Box Rental
- Kodak® Photo Kiosk
- Self-service Copier
- Fax Services
• Graphic Services (vinyl banners, signs, wide-format printing)
• Balloons

**PARKING AND TRANSPORTATION**

parking.uncc.edu

**PARKING AND TRANSPORTATION SERVICES (PaTS)**

PaTS is charged with the responsibility of providing parking and transportation service for UNC Charlotte students, faculty, staff, and visitors.

**PARKING PERMITS**

The PaTS office is located in the Facilities Operations/Parking Services Building (#23 on the campus map). All campus parking requires the purchase and display of a University parking permit or payment at meters or in the visitor decks. Parking permits may be purchased online at parking.uncc.edu. Permits do not guarantee proximity parking, nor do they reserve a specific parking space in any lot or deck.

**EVENING PARKING**

Night Permits valid for parking after 3 p.m. are available by the semester or by the year. In addition, a limited number of reduced fee permits are available for commuter students and staff who are willing to park in a remote lot (6A) and utilize the free Campus Shuttle Transportation or lot 27 (no shuttle provided).

A PDF of the Campus Parking Information Guide is available from the Parking and Transportation Services office at parking.uncc.edu. Parking rules and regulations are also available. For information on fees for motor vehicle registration and parking, see the section on Financial Information in this Catalog.

**CAMPUS SHUTTLE**

Campus Shuttle Transportation is available Monday through Thursday from 7:30 a.m. to 10 p.m., and Fridays from 7:30 a.m. to 6 p.m., when classes are in session. Shuttle buses are provided by PaTS through the Charlotte Area Transit System (CATS) and run to and around all main areas of campus, providing safe, reliable, ADA compliant transportation.

Schedules and maps are available online at parking.uncc.edu. For additional information, please contact the PaTS Office at 704-687-0161.

**DISABILITY SERVICES**

SafeRide is a two-fold transportation service, operating whenever the University is open.

*Monday through Friday from 7:30 a.m. to 4:30 p.m., SafeRide provides service throughout the inner core of campus for persons with temporary and permanent mobility disabilities. Riders must register for the service through the Office of Disability Services at 704-687-4355. Forms are available on the SafeRide Web site at saferide.uncc.edu and at the Office of Disability Services or the PaTS Office.*

*Monday through Sunday from 4:30 p.m. to 2:30 a.m., SafeRide provides an ADA accessible safety escort service, in conjunction with the Campus Shuttle Transportation Service. SafeRide transports to academic buildings, housing areas, parking lots and parking decks within the UNC Charlotte Campus. SafeRide evening service requests are made by calling dispatch at 704-687-5636.*

**CAR SHARING PROGRAM**

Parking and Transportation Services has partnered with Connect by Hertz which offers qualified drivers, ages 18 years and up, environmentally friendly vehicles to rent a low rate – by the hour or the day. Members access cars using a Smart Card and only pay for the time they rent the car. UNC Charlotte students registered for Connect by Hertz may use the Ford Escapes or Toyota Priuses parked on campus for only $8 per hour. For more information, see aux.uncc.edu/parking or contact PaTS at 704-687-4285.

**BUSES**

The Charlotte Area Transit System (CATS) provides bus transportation to and from campus via route 11U (from the Uptown transportation center and North Tryon Street and back) and route 29 (with service down to Cotswold and SouthPark malls). Service is provided on a regular schedule, connecting with established routes throughout the city.
CATS transportation passes are available for purchase at the Parking Services office; with a UNC Charlotte ID, and there's a 10% discount. Passes are sold as: Ten Ride Local Pass; Weekly Pass; Local Monthly Pass; Express Monthly Pass. Passes are sold on a cash-only basis.

Brochures containing detailed information regarding routes, schedules and fees may be obtained in the Parking and Transportation Services Office, or by calling the Charlotte Transit Authority at 704-336-3366. Fees are set by Charlotte Transit and are subject to change. Maps for CATS can be found online at: charmec.org/Departments/CATS.

**STUDENT UNION**  
studentunion.uncc.edu

The Student Union is designed to be the epicenter of campus activity, serving students, faculty, staff, alumni, and visitors. The Union provides services, programs, events, meeting spaces, informal gathering spots and a large variety of convenient services.

UNC Charlotte's Student Union is a 196,000 square ft., three-story “living room” that includes: a retail food court (with Wendy's, Starbucks, Mamma Leone's, Einstein Bagels and Energy Zone; Bistro 49 (table-service restaurant), Crown Commons dining (an all-you-care-to-eat variety-fare venue), Norm's game room lounge; a 210-seat movie theater; a multi-purpose area that converts from several soft-walled meeting rooms to a ballroom to a banquet hall that can seat over 600; the Barnes & Noble at UNC Charlotte bookstore, Outtakes convenience store, NinerTech store (providing educational pricing on Apple products and PC-compatible software); a hair salon; Union Station (shipping, U.S. Passport processing, and graphic services); student organization and activity offices and meeting space; a piano lounge; art gallery and study spaces with Wi-Fi. “Discover the riches within” at: studentunion.uncc.edu.

**Dean of Students**  
dso.uncc.edu

The Dean of Students Office is a department within the Division of Student Affairs and serves as a key link between students and other areas of campus life. As the hub of the Niner Nation student experience, the mission of the Dean of Students Office is to serve the University community as a compass and advocate for student centered education built on integrity, citizenship and diversity.

Various programs are sponsored by the Dean of Students Office to promote opportunities for learning and growth during a student’s college experience. The staff is responsible for advising and promoting the following programs: student government, fraternity and sorority life, minority student support services, new student orientation, off-campus and community outreach, women's programs, student conduct, Community Service Learning Community, and parent and family services. In addition, the staff of student development professionals provides support for any student who has a grievance or concern about the University. The office also coordinates and assists with the settlement of academic and behavioral misconduct charges against individuals and student organizations.

The Dean of Students Office welcomes all students and values the concept of student involvement in leadership opportunities on campus. Leadership training offered within this department focuses on nine competencies: (1) interpersonal relationships, (2) critical thinking, (3) social justice, (4) ethics, (5) social responsibility, (6) leadership, (7) communication, (8) resource awareness, and (9) professional responsibility. Through these competencies, students often find themselves learning new skills and abilities that can help them become more productive and responsible citizens.

Each of the programs and services listed below provides excellent opportunities for students to incorporate classroom knowledge into practical situations. The Dean of Students Office is located in 217 King. For information, call 704-687-0345.
NEW STUDENT AND FAMILY SERVICES

NEW STUDENT ORIENTATION

SOAR (Student Orientation, Advising and Registration) occurs during the summer and immediately prior to the fall and spring semesters. This program provides the opportunity for new freshmen and transfer students to begin their transition to UNC Charlotte. Orientation workshops, testing, academic advising, and first semester course registration occur during SOAR. Visit online at soar.uncc.edu.

WOW! (WEEK OF WELCOME!)

WOW! (Week of Welcome!) is a week-long event welcoming both new and returning students to campus. This program is a University-wide effort to especially welcome new students to campus and acclimate them to the many programs and services offered by the University. All students are invited to participate in WOW! activities which include 49er New Year, dances, movies, prizes, cookouts, and other fun events. Visit online at wow.uncc.edu.

MINORITY STUDENT SUPPORT SERVICES

Minority Student Support Services is designed to assist and advocate for the needs of UNC Charlotte’s under-represented populations. Through collaboration with a variety of offices on campus, the program focuses specifically on academic support, mentoring, social networking, ethnic and cultural development, leadership development, and personal growth.

STUDENT ADVISING FOR FRESHMAN EXCELLENCE (SAFE)

SAFE is a peer mentoring program designed to help students academically transition through their first year of college. The SAFE program connects new students with upper-class mentors who serve as role models during the first year of college and provide academic and student development programming to address needs in a holistic manner. Visit online at dso.uncc.edu/safe.

WOMEN’S PROGRAMS

Women’s Programs strives to promote understanding, raise awareness, and address the needs of women in the UNC Charlotte community by offering a variety of programs to students, faculty, and staff. The goals of the Women’s Programs Office are to support and serve women by celebrating their achievements and to advocate for a gender friendly environment.

PARENT AND FAMILY SERVICES

Parent and Family Services is designed to provide communication between the University and family members of UNC Charlotte students in order to support student success, generate goodwill for the University, and promote an appropriate role for families within the campus community. Through collaboration with a variety of departments on campus, Parent and Family Services provide resources to keep families connected to the University and equipped to support their student throughout the college experience.

NINER NATION FAMILY

Niner Nation Family is intended to strengthen the relationship we have with our students’ families and increase communication with parents and actively involve them in the life of UNC Charlotte. Membership is open to all parents and family members of current students. To join, simply contact the Niner Nation Family Office at parents@uncc.edu or call 704-687-2541, or visit the website at parents.uncc.edu.

STUDENT CONDUCT AND OUTREACH

STUDENT CONDUCT

Student Conduct promotes personal responsibility and encourages civility, integrity and a sense of community among UNC Charlotte students. The purpose of the student conduct process is to maintain a campus community conducive to a positive learning environment. Consistent with this purpose, intentional efforts are made to foster the personal, social and ethical development of those students whose behavior is in conflict with University expectations, both in and out of the classroom. The desired outcome of the student conduct process is to provide an educational opportunity by which individuals or groups can recognize the consequences of their actions and be held...
accountable for their choices. As part of their individual responsibility to the University community, all UNC Charlotte students are expected to be familiar with their rights and responsibilities as outlined in The Code of Student Responsibility, regarding behavioral violations, and The Code of Academic Integrity, regarding violations through academic coursework. Visit online at dso.uncc.edu/judicial and the Student Conduct section of this Catalog for more details.

**Volunteer Outreach**

Volunteer Outreach helps students find community service opportunities that match their interests and skills through connection with local non-profit agencies. A wide variety of service activities are available including issue-based programs that focus on topics such as education, hunger and homelessness, literacy, animals, alternative spring break, and mentoring. Volunteer Outreach also sponsors special events in which all UNC Charlotte students, faculty, and staff may participate such as American Cancer Society Relay for Life, Food Recycling Program, Service in Action weekend events, Volunteer Fairs, and MLK and Homecoming days of service. Visit online at dso.uncc.edu/volunteer.

**Community Service Learning Community (CSLC)**

CSLC is a one-year program for first-year students who are planning to live off-campus and, most importantly, have expressed an interest in community service. Most of the CSLC students are from the Charlotte metropolitan region. This interdisciplinary, non-residential learning community draws on the ideals of service learning, which combines volunteer efforts with academic study. Students in this learning community are provided with opportunities to make a difference by volunteering in the local community, form relationships with students living on and off campus, and learn about community and campus resources.

**Off-Campus Outreach**

Off-Campus Outreach supports students by providing informational resources about off-campus living and by working with campus departments to encourage University-wide support systems for off-campus students. Students who decide not to live in the residence halls can choose from a variety of apartment complexes, rental properties, or condominiums located near campus. Off-campus programs include Vendor Fairs, an on-campus Locker Rental program, regular meetings with University-partnered apartment complexes, and safety presentations. Visit online at dso.uncc.edu/offcampus.

**Veteran Students Outreach**

Veteran Students Outreach coordinates support services for military veteran students such as assistance with University administrative support, collaboration with Veterans Affairs counseling and health care services, veteran-friendly employment, mentoring, and veteran service organizations. In addition to coordinating support services for students, the Office of Veteran Students Outreach plans events on campus in honor of our nation’s service-men and women such as observances for Veterans Day, Memorial Day, POW/MIA Recognition Day, and 9/11 remembrance. Visit online at veterans.uncc.edu.

**Veterans Club**

Veteran Students Outreach advises the UNC Charlotte Veterans Club, a student-run organization founded to support and advocate for veterans’ needs on campus. The Veterans Club, a member chapter of the Student Veterans of America, is a community of veterans, current service-members, ROTC cadets, as well as civilians; membership in the Club is free and open to all UNC Charlotte students. The Club organizes community service projects, outdoor activities, guest speakers, art workshops, and social events. Visit online at sco.uncc.edu/veteransclub.

**Student Government Association**

The Student Government Association (SGA) provides students with an early experience in governmental affairs. Students often find their work in student government a useful background for later public service. The University encourages student participation in its affairs and has student representatives on many faculty and administrative committees. The leaders of student government are committed to representing the student body and to developing students' awareness of the many facets of campus life. All regularly enrolled students, both full and part-time, are eligible to participate in student government. Visit online at sga.uncc.edu.

The Student Government Association is comprised of:
EXECUTIVE BRANCH
The Executive Branch is advised by the Vice Chancellor for Student Affairs and is made up of the president, the vice president, chief of staff, the four class presidents, and the cabinet, who are appointed by the president.

STUDENT SENATE
The Student Senate is advised by the Assistant Director of Conduct and Safety and is comprised of the President Pro Tempore and representatives from each academic college who are elected by the students with majors in the college. The Vice President of the Student Body conducts all meetings and serves as liaison between the Senate and the Student Body president’s office.

JUDICIAL BRANCH
The Judicial Branch is advised by staff in the Office of Student Conduct and is composed of panel members of the Judicial Board, including leadership in the Offices of Student Attorney General, Chief Justice of the Hearing Panel, and Student Counsel. Members of the Judicial Board are responsible for hearing cases of alleged violations of the UNC Charlotte Code of Student Responsibility and determining appropriate sanctioning if the accused is found responsible for a violation.

FRATERNITY AND SORORITY LIFE
Fraternity and Sorority Life at UNC Charlotte consists of 33 fraternities and sororities founded upon the principles of scholarship, leadership, community service and the formation of lifelong friendships through brotherhood/sisterhood. Fraternities and sororities uphold these fundamental values in their pursuit of collegiate excellence, enabling all members to achieve their personal best. Fraternity and Sorority Life provides students with an opportunity to be a part of a large group with many diverse characteristics while sharing a common goal. The fraternities and sororities work together to provide a quality experience for anyone who joins via service projects, educational programs, and social activities. The experience the student gains from organizing and motivating people, planning and implementing projects and learning to give back what one has received can be an invaluable part of a college education. Membership recruitment for a fraternity or sorority primarily begins with each new semester. However, some organizations hold recruitment meetings throughout the year. Some of the many programs within Fraternity and Sorority Life include: the Greek Leadership Conference, Greek Week, Airband, Stepshow, and New Member Convocation. Visit online at greeklife.uncc.edu.
Educational Services

LIBRARY

The J. Murrey Atkins Library, located near the center of campus, is a state-of-the-art facility, physically housing over 1,087,000 books as part of its growing collection. Open 24/5 (Sunday – Thursday nights), it is the largest academic research library in the Southern Piedmont region with accredited membership in ASERL (the Association of Southeastern Research Libraries). Its fundamental goal is to help UNC Charlotte faculty and students do their research and academic work, better and faster.

RESEARCH

Everyone is encouraged to consult with the Library’s expert Research Librarians, available to assist students and faculty via ichat, email, phone, and even one-on-one meetings for deeper, subject-related study. There are twelve group study rooms available, as well as new ground and first floor collaborative group study spaces that have comfortable furniture, tables and white boards, used by students on a daily basis.

SERVICES

University Librarian, Stanley Wilder, along with the entire library faculty and staff, are committed to consistently reinventing library services to meet the changing dynamics of research needs and trends. To date, patrons can access our many thousands of electronic journals, electronic books, and databases, as well as perform a wide variety of other functions digitally via wireless network access on every floor, over 200 public computer workstations (Macs and PCs), wireless laptops, and online at library.uncc.edu. There’s also a Digital Media Lab offering scanners, high end media software, and an editing room, as well as staff to assist with computer technology assistance.

Atkins Library has an “open food and drink” policy. Also available is the Library Café, located on the ground floor, for a wide variety of drink and food choices, as well as its relaxing atmosphere.

Visit Atkins Library online at library.uncc.edu, on Facebook, and on Twitter (Atkins Library).

COMPUTING

INFORMATION AND TECHNOLOGY SERVICES (ITS)

Information and Technology Services manages the campus voice and data networks, centralized servers, University-owned computers, operating systems, and software to support teaching and learning, research and business processes. The campus has a robust data network that connects over 600 servers and approximately 6000 computers. Fifty percent of the campus features wireless network access. ITS maintains and supports the University’s core administrative systems, performs application development, and administers and supports all of the University’s central server resources. ITS provides development, consulting, and support services for the University web presence, its portal (49er Express), and the learning management system. ITS also provides facilities and services in support of the University’s research mission.

STUDENT COMPUTING

Student Computing is a unit within Information and Technology Services that works to ensure that students have access to computer equipment, software, and information needed to support their general academic efforts at the University of North Carolina at Charlotte. Student Computing manages the general-use computer labs in the Barnard building which are open 24/7. The labs house 138 Internet-connected computers which provide access to email, network disk space, and a variety of applications. All current students are provided with a NinerNet account that provides access to email, 49er Express, and the University network for their use while they are enrolled in courses at UNC Charlotte. Student Computing provides technical support through the Student Computing Help Center in Barnard, an online helpdesk tool located at helpdesk.uncc.edu, and via phone at 704-687-6400. Visit labs.uncc.edu for more information.
WRITING

WRITING RESOURCES CENTER
The mission of the Writing Resources Center (WRC) is multi-faceted. Based on the view that knowing and learning are fundamentally social, the WRC fosters an environment of active, collaborative learning outside the classroom. Its primary purpose is to provide one-to-one writing instruction to students from first-year to graduate in any discipline. Its goal is not to “fix” papers, but to teach students to become more effective writers.

The Center includes computing facilities that integrate word processing, research, tutoring, and assistive technologies. Online tutoring extends writing instruction beyond daytime hours to serve nontraditional and distance education students. In addition to its web-based resources, the WRC houses a variety of writing-related instructional materials.

Consultation is available, on a limited basis, to support faculty in teaching writing across the curriculum. WRC staff give presentations and host workshops on topics such as avoiding plagiarism, documenting sources, peer response, and revision strategies.

The WRC also has an educational mission for its writing assistants. Staffed by undergraduate and graduate students from a variety of disciplines, the WRC offers teaching experience and leadership opportunities to tutors, many of them future educators, as they develop their own writing abilities and interpersonal skills. Both novice and experienced writing assistants participate in ongoing professional development in theory, research, and practice of writing pedagogy. Integral to that training, the WRC is a rich site for literacy research for students and faculty alike.

As a university-wide service invested in the teaching and learning of writing in every discipline, the WRC coordinates its efforts with other academic support services. The Center participates in University policy-making concerning writing and joins in the design and implementation of campus writing initiatives.

Tutorials begin on the hour and last for 45 minutes. Students may make appointments in advance. Walk-in consultations are available too. Faculty may also make student referrals to the WRC. In addition to its Fretwell 220 location, the WRC has two satellite locations: Atkins Library, Room 109, and the Cone University Center, Room 268 (Center for Graduate Life). For more information, visit wrc.uncc.edu.

WRITING PROJECT
The Writing Project (WP) focuses on developing K-12 writing teachers using three interconnected components that are based on the National Writing Project model: 1) the summer invitational institute, 2) continuity programs for teacher consultants in the project, and 3) inservice programs with local school districts. The WP offers inservice teacher education as well as opportunities for K-12 teachers to conduct classroom-based research. Working in conjunction with the College of Education, the WP provides leadership in educating teachers as writers and teachers of writing.

EXTENDED ACADEMIC PROGRAMS

EXTENDED ACADEMIC PROGRAMS
Recognizing that learning must be a lifelong activity, the University provides opportunities for adults to pursue their continuing education through degree-related studies and special non-credit programs. With staff dedicated to Workforce Development as well as Corporate Training, Extended Academic Programs responds to the current and emerging workforce needs of companies, organizations, and industries in the region.

CONTINUING EDUCATION
Non-credit short courses, seminars, and workshops for adults are offered through Continuing Education. Specific programs are provided each year for the continuing professional education of accountants, managers and project managers in the public and private sectors, business analysts, engineers, human resource professionals, training and development specialists, paralegals, fire and rescue professionals, emergency medical specialists, and medical office and coding administrators. The Office offers a variety courses to prepare individuals to sit for various exams, including the SAT, GRE, GMAT, and LSAT. The Office’s Corporate Training staff design and deliver programs in-house to serve the employees of specific companies and organizations. The Office also offers academic enrichment camps for youth during the summer. The Office of Continuing Education is located at the Ben Craig Center and can be contacted at 704-687-8900.

DISTANCE EDUCATION/EXTENSION

Through Distance Education/Extension, courses for academic credit are offered at off-campus sites and via the Internet to serve citizens who live beyond easy commuting distance of the campus. Options for delivery include sending a UNC Charlotte faculty
member to an off-campus location to teach a course in person, using one of two state-wide interactive video networks to link a UNC Charlotte faculty member on the campus in Charlotte with students attending class at remote locations throughout the state, and delivering courses online via the Internet. The Office also has responsibility for offering Summer School, which includes courses offered on the campus, at off-campus sites, and online. The Office of Credit Programs is located in 1017 Colvard and can be contacted at 704-687-2222.

Please visit ExAP.uncc.edu for specific information about the programs offered.

ADULT STUDENTS AND EVENING SERVICES
The Office of Adult Students and Evening Services (OASES) serves as a principal resource for nontraditional students. OASES is located in Barnard 106 and offers extended hours to serve students from 8 a.m. to 7 p.m., Monday through Thursday; 8 a.m. to 5 p.m. on Friday; and 9 a.m. to 1 p.m. on the first Saturday of each month, Fall and Spring semesters. Services include general education advising, referrals, parking decal pick-up, and assistance with processing various forms. Students can pick up and/or drop off information to be delivered on campus. Programs include transition seminars, adult student scholarships, the Alpha Sigma Lambda Honor Society, the Non-Traditional Student Organization (NTSO), the Adult Mentoring Program for Students (AMPS), and the 49er Finish Program. Visit oases.uncc.edu or call 704-687-2596 for more detailed information.

Environmental Facilities and Services

BOTANICAL GARDENS
The UNC Charlotte Botanical Gardens, located on campus, consist of the McMillan Greenhouse, the 7-acre Van Landingham Glen, and the 3-acre Susie Harwood Garden. The mission of the gardens is to promote the knowledge and appreciation of plants for educational, environmental, and aesthetic purposes. The gardens were begun in 1966 by biology professor emeritus, Herbert Hechenbleikner to serve as a living classroom and have evolved into a multifaceted campus and public resource. Collections include orchids, carnivorous plants, succulents, native plants, tropica ls, and hardy outdoor plants. The outdoor gardens are open seven days a week, and the greenhouse is open Monday through Saturday, 10-3 and Sundays 1-4. Students and the public are invited to visit, free of charge. More information can be found online at gardens.uncc.edu.

ECOLOGICAL RESERVE
The UNC Charlotte Experimental Ecological Reserve is a 100-acre tract on the UNC Charlotte campus for use as an outdoor classroom and laboratory. The reserve includes a floodplain forest, pine stands, mixed pine-hardwood forest, and a relatively undisturbed 10-acre watershed of oak-hickory forest.

WILDLIFE REFUGE
The UNC Charlotte Rocky River Wildlife Refuge is a 46-acre natural area located east of Charlotte in Stanly County. Its purpose is to preserve the natural features of the area and allow research and field trips to study the plants and animals within the North Carolina slate belt formation.

RECYCLING
Recycling services are coordinated by the Office of Waste Reduction and Recycling within Facilities Management. The University’s recycling program, initiated by students in 1990, currently recycles 31% of the solid waste generated on campus, including approximately 40 different materials. Residence halls are equipped with outdoor recycling centers, recycling containers in trash rooms or lobbies, and a small recycling bin in each room. Toner cartridges, aluminum cans, plastic and glass bottles, computer paper, newspapers, magazines, all plastics except #6, and cardboard can be recycled at the residence halls. In addition to the above materials, Styrofoam peanuts, transparencies, and
NOTE: After students fill the recycling bin provided in their rooms, they should bring the recyclables to the recycling container located in the building’s common area.

The recycling program provides educational sessions for students, faculty, and staff. The program coordinates and sponsors the annual UNC Charlotte Earth Day Environment Festival, the biannual Campus Clean-Ups, and Adopt-A-Spot, along with various educational programs throughout the year.

The Office of Waste Reduction and Recycling offers students a chance to embrace their environmental responsibilities and to demonstrate concerns through volunteer and employment opportunities. To volunteer, contact the environmental educator at 704-687-0606.

These and other waste reduction and recycling programs help UNC Charlotte in its effort to meet North Carolina's 40% waste reduction goal. For more information about UNC Charlotte's waste reduction and recycling activities, view the website at uncc.edu/recycling or call the office at 704-687-0604.

Health, Wellness, and Counseling Services

STUDENT HEALTH CENTER

The Student Health Center’s mission is to promote healthy students by providing health care, education and outreach services. It provides primary medical care, disease prevention, health education, wellness promotion, and various specialty services, including allergy injections, immunizations, gynecology, physical therapy, and HIV screening to all registered UNC Charlotte students. The Student Health Center also provides a full-time psychiatrist and a registered dietician. The Student Health Center is staffed by a team of physicians, physician assistants, and nurse practitioners. The pharmacy fills prescriptions from outside physicians as well as the Center’s own providers.

Appointments are strongly recommended; this eliminates long waits and assists students in scheduling medical services around class schedules.

Seriously ill students and emergencies are referred to local hospitals or other appropriate medical facilities.

The Student Health Center also provides after hours nursing advice for the students at UNC Charlotte when the Student Health Center is not open including weekends and holidays.

The student health fee covers many of the costs for services. Additional fees are charged for x-ray, pharmacy, laboratory, and gynecology services, injections, and special procedures. Fees for service may be paid by cash, check, credit card, or transferred to the student’s University account. Fees are subject to change. For more information, visit the Student Health Center website or call 704-687-7400.

Students are required to either demonstrate proof of insurance or purchase a University Student Health Insurance Plan. All students will be charged the semester fee for the University Student Health Insurance Plan. However, a waiver process is in place for students to provide documentation of their proof of insurance to refund this fee. The waiver process can be found online and through hyperlinks provided in University emails. Full details may be...
The Counseling Center at UNC Charlotte supports the academic, personal, and interpersonal development of UNC Charlotte students by providing short-term individual and group counseling; consultation for faculty, staff, parents, and students; and educational programs to the campus community. Consistent with the academic mission of the University, the Center also serves as a training site for graduate students in psychology and counseling and encourages scholarly activity and professional development of staff.

Counseling provides an opportunity for individuals to learn to make better decisions, improve personal skills, develop increased confidence, overcome blocks to personal effectiveness, and acquire a keener awareness and appreciation of their needs and the needs of others. In a personal interaction with a counselor, a client is helped to explore and express feelings, examine beliefs and ways of thinking about the world, reflect on patterns of behavior, and work toward making healthy changes.

For many students, issues of relationship and personal development are central to their desire for counseling. Others may be experiencing specific psychological problems such as depression, anxiety, eating disorders, use of alcohol and other drugs, or difficulties in adjustment. Through counseling, persons with these complaints can have their problems assessed and treated. Treatment may include referral for medical evaluation or to other community resources.

All currently enrolled students are eligible for an initial assessment. This first session helps both the student and counselor decide how Counseling Center services might best serve a student’s needs. These services may consist of individual or group counseling at the Counseling Center and/or a referral to an on-campus or off-campus service. Information shared by student clients is confidential in accordance with guidelines established by the American Psychological Association and the laws of the state of North Carolina.

Outreach and consultation are important services provided by the Counseling Center. Staff members are available to consult with faculty, staff, parents, and students on topics such as enhancing communication, improving the learning environment, and helping a particular student with a problem. Outreach activities, usually focusing on some aspect of personal, interpersonal, or group development, include programs conducted outside the Counseling Center to meet the needs of a class, group, or organization.
Housing and Residence Life

University residence halls, suites, and apartments offer students a variety of living arrangements.

RESIDENCE HALLS
Four high-rise residence halls house a combination of either two students in each room or single rooms. Each room is equipped with dressers, study desks, chairs, and closets or wardrobes. Each floor has a central lounge, plus study and seminar rooms. Two elevators service each air-conditioned building. Each building also contains an office for the full-time professional staff (Residence Coordinator), student mail boxes, a vending area, a lounge, and a laundry room. A meal plan is required in the high-rise residence halls.

SUITES
In the majority of suite housing, two students share a double room and four students share a bath and a den area. A very limited number of suites are available in Laurel Hall that house either two or four students but all in private bedrooms. Spruce Hall (opening Fall 2011) also has one-, two-, and three-private bedroom suites.

APARTMENTS
On-campus apartments offer students a more private living environment and require a more self-reliant lifestyle. Each apartment is a four-bedroom unit, with one student assigned to each bedroom. The four students share a bathroom area and kitchen complete with appliances and a living/dining space. A meal plan is optional, allowing students the experience of buying and preparing their own food, if they so desire.

GREEK VILLAGE
Greek Village houses up to fourteen fraternities, sororities, and, in some cases, independent students. Each house has a chapter/living room and kitchen for common use and holds 28 or 14 students.

SUMMER HOUSING
For information about summer housing, please contact the Housing and Residence Life Office.

APPLYING FOR HOUSING
Students who plan to live on campus should apply as soon as possible, as assignments are made according to a combination of factors including: date of completed application, community preferences, roommate requests, space availability, class year, and building/room preferences. Application for housing may be made online at housing.uncc.edu following the student’s admission to the University. For new students applying effective Fall 2011, a $200 deposit is required with the application in order for it to be considered complete.

ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES
Housing facilities designed specifically for students in wheelchairs are available. Wheelchair users who receive confirmation of residential space have priority in assignment to these facilities as long as the University is able to offer space. It is extremely important that the housing application is received before all space is committed so that this priority for assignment to appropriate facilities can be exercised. Students utilizing wheelchairs may be considered for priority status on the waiting list on the basis of (1) the date of completed application and (2) the degree of utilization of wheelchair-equipped facilities as compared to the proportion of wheelchair students who apply.

Assignment to a disability accessible housing space requires documentation of the disability and special needs in accommodations by the Office of Disability Services. Documentation must be provided to Disability Services when the housing application is submitted and no later than June 1. The University does not assume any responsibility for the provision of attendants for students with disabilities. Such arrangements are entirely the responsibility of the individual student and should be established well in advance of the time the services are to begin.
International Programs

OFFICE OF INTERNATIONAL PROGRAMS
The Office of International Programs (OIP) assists the University of North Carolina at Charlotte and the surrounding community in responding to the numerous responsibilities and emerging opportunities created by an increasingly interdependent world. On campus, it seeks to make international understanding and global awareness a fundamental part of the curriculum and an integral part of campus programming.

CAMPUS EVENTS
Various Campus Events are sponsored independently and in cooperation with other departments and agencies on campus. They include the annual International Festival, International Education Week, Study Abroad fairs, International Women’s Day, International Education awards for faculty and students, International Speaker Series, and activities associated with the Mu chapter of Phi Beta Delta Honor Society for International Scholars.

PUBLIC SERVICES
The Office of International Programs seeks to initiate and respond to the international needs and interests of the community. Current programs include: 1) Community Forums – symposia on topics of current international interest; 2) Great Decisions – an annual series of lecture/discussions during the months of February and March on key policy issues; and 3) Cross-Cultural training – individually designed workshops that focus on appreciation for other cultures and development of skills in effective communications across cultures.

The Office of International Programs serves as a center of leadership and responsibility for the international role and mission of the University. It is comprised of related units that function together towards creating an international perspective in all facets of campus development. OIP includes the Office of Education Abroad, the International Student and Scholar Office, the English Language Training Institute, and Intercultural Outreach Programs. In addition, OIP is closely affiliated with the World Affairs Council of Charlotte.

OFFICE OF EDUCATION ABROAD
The Office of Education Abroad (OEA) at UNC Charlotte is committed to providing quality, cost-effective educational opportunities for students to enhance their learning in an experiential environment abroad and to supporting faculty initiatives in creating such programs to supplement their curriculum objectives.

Students are encouraged to take advantage of the opportunity to have an educational experience through study or experiential learning abroad. OEA develops and maintains exchange relationships in multiple countries throughout the world and is an active member of the International Student Exchange Program (ISEP) which allows students access to additional programs from a worldwide framework of exchanges. Students have the option of year-long, semester, summer or short-term programs.

In addition to making progress toward their degree requirements, students have the opportunity to test theoretical principles in real-time, challenge their assumptions about different cultures and explore their own relationship with the global landscape.

INTERNATIONAL STUDENT/SCHOLAR OFFICE
The International Student/Scholar Office (ISSO) provides information, services, and programs that help international students and visiting scholars achieve their individual educational and personal goals and also fosters an appreciation for a culturally diverse learning environment in the larger UNC Charlotte community.

Over 1,000 non-immigrant international students representing over eighty countries around the world study at UNC Charlotte. They are supported through orientation programming, individual advising and assistance with immigration document processing. Programs to encourage international student and U.S. American student interaction are also supported through ISSO. These include an International Coffee Hour, Friendship and Culture Exchange Program and the International Club at UNC Charlotte.

ENGLISH LANGUAGE TRAINING INSTITUTE
The English Language Training Institute (ELTI), established in 1978, prepares international students for academic study at UNC Charlotte or other U.S. colleges and universities by introducing and refining the English language and cultural adaptation skills the students will need to succeed in their academic careers.

ELTI offers seven levels of English language instruction to over 125 students from more than 20 countries each semester. In addition to 20-24 hours of class each week, students visit academic classes,
meet with U.S. conversation partners, and tour area schools and sites of cultural interest. On average, students stay for at least two semesters.

INTERCULTURAL OUTREACH PROGRAMS
Intercultural Outreach Programs (IOP) initiates a wide array of academic and professional development programs in conjunction with an intensive and structured immersion experience in American culture and language for international groups who wish to achieve peak performance in the international arena.

IOP also facilitates specialized faculty development programs and practical training for international interns. Each experience is custom-designed and integrated with experiential learning activities; cultural, social and recreational events; as well as opportunities for interaction with the Charlotte and University communities.

Programs for domestic groups are also initiated and administered through IOP. Professionals who wish to go abroad may broaden their global perspective and enhance their professional skills through coordinated opportunities to exchange ideas and develop cross-cultural relationships with colleagues in other countries; expand their professional knowledge, and, see their own profession from a different perspective. Professional development is also provided for local corporations with multicultural work forces at home and/or operations abroad.

WORLD AFFAIRS COUNCIL OF CHARLOTTE
The World Affairs Council of Charlotte (WACC) was founded in 1983 as an outreach program of UNC Charlotte and its Office of International Programs. By serving as a regional center for education and discussion of world affairs, WACC seeks to provide leadership for global thinking, believing that a broad perspective is necessary for effective competition in the global economy and for responsible citizenship in an increasingly interdependent political world. The WACC recruits internationally renowned speakers to address topics ranging from economics to globalization to foreign policy.

WACC educational outreach programs have directly benefited over 700 teachers and almost 70,000 students. WACC is a non-profit, non-partisan organization supported by funding from individual and corporate member dues, foundations, and contributions.

Performing Arts
performances.uncc.edu

With the College of Arts + Architecture, the Departments of Dance, Music, and Theatre serve the educational needs of students and the cultural needs of Charlotte and the University community. It is the mission of these three departments to prepare students for arts-related fields by integrating excellence in instruction and artistic creativity within a broad professional landscape.

PERFORMANCE VENUES
As UNC Charlotte's primary facility for the arts, Robinson Hall is where the weeks and months of planning, programming, and behind-the-scenes work give way to presentation to live audiences. Every production is an opportunity for students and faculty to investigate and understand by doing and a medium through which the arts illuminate, inspire, or confront.

The dynamic between audience and performer assumes a more urgent tone in the higher education setting of Robinson Hall. Public performances reinforce our role as a resource to the arts community in Charlotte. More than a venue, Robinson Hall offers a space to challenge preconceptions and present students, faculty, and audiences with other ways of seeing the world in order to stimulate and amplify community dialogue.

Within Robinson Hall are the Anne R. Belk Theater and the Lab Theater. The main stage space, the Anne R. Belk Theater, is a proscenium-style house which seats 340. Dozens of performance events take place in the theater over the course of an academic year. The theater’s orchestra, mezzanine, and box seating offers patrons an environment that is both intimate and elegant. The flexible Lab Theater space can accommodate 90 to 125 patrons for a unique theatrical experience.

The Rowe Arts building houses new newly-renovated venues; the 360-seat Rowe Recital Hall and the White Box Theater, a classroom and lab theatre space dedicated to the development of student works and projects.
PRODUCTIONS
The Departments of Dance, Music, and Theatre are the headliners at Robinson Hall. The primary role of our two theaters – the 340-seat, proscenium-style Anne R. Belk Theater and the intimate 125-seat, “black box” Lab Theater – is to support the education of our students in the processes of performing arts production. In the weeks before the performance, the theater space becomes a laboratory as students hang lights, construct sets, work sound and rehearse, learning how to carry out the remarkable technical operations necessary to stage and produce a show.

Preparation for Professional Schools

Students may begin preparation at UNC Charlotte for a number of professional careers. Depending upon the professional school's requirements, the student may wish to take a degree at UNC Charlotte or to transfer after one, two, or three years.

Students who plan to enter a professional school are advised to plan their program of study so that general requirements for the Bachelor of Arts or Bachelor of Science degree are met in addition to the requirements for the professional program being considered. Students planning to attend a professional school should inform their advisor of their plans. Students should become familiar with the requirements of the school that he/she plans to attend. That school, not UNC Charlotte, will determine which UNC Charlotte credits will be accepted for transfer.

Graduate and professional school entrance requires an extensive commitment and focused career choice. Certain careers required an advanced degree, and the University Career Center (UCC) can help students identify what kind of graduate study will best prepare them for the specific career of interest. In addition, the career resource collection in the Center contains information on preparing for the professional exams, backgrounds on the schools offering programs, and in-depth career information. Résumé critique sessions and mock interviews offered by the Center can also be geared toward graduate school admissions, based on student need. The UCC hosts two Career Expos each academic year which include representatives from graduate and professional schools seeking to attract UNC Charlotte students. Lastly, the UCC maintains lists of graduate and professional schools to which past graduates have been admitted or attended.

It is important to note that there are more application requirements for professional/graduate schools than for undergraduate schools. Application is often an extensive and in-depth process. The UCC can help you plan the application and career development processes, which includes prior exploration of medicine, law, and various careers requiring advanced degrees, through job shadowing, self assessment, career research, and internships.
The University Career Center now offers Interfolio®, an online self-managed system for students to store application documents including confidential letters of recommendation. Students can also submit reference requests to faculty and send letters and other credentials directly to graduate and professional schools using their account. To create an Interfolio® account, students can visit career.uncc.edu.

The Office of Continuing Education currently offers fee-based programs that help students prepare to take the GRE, GMAT, and LSAT exams.

**CHEMICAL ENGINEERING**

Students seeking a program in chemical engineering should consult the Department of Chemistry for advice concerning available options. However, those students wishing to obtain the Bachelor of Science in Chemical Engineering degree may do so by transferring to North Carolina State University after spending two years at UNC Charlotte. To be eligible for such transfer, the student must meet the admissions requirements for transfer at North Carolina State University. After transfer, an additional two years normally will be required for the degree.

**LAW**

Admission to law school is determined mainly by undergraduate grade point average and the score on the Law School Admissions Test (LSAT). Applicants also may submit letters of recommendation and a recitation of extracurricular activities, and personal statement, but those items are secondary to the GPA and LSAT. There is no defined program of pre-law courses and law schools do not favor or require a specific major. Law schools look for students who have taken courses that are academically rigorous, including writing intensive and research oriented courses.

**PRE-LAW SOCIETY**

The UNC Charlotte Pre-Law Society is a student pre-law organization. The Society carries on a large number of activities designed to help its members decide whether they wish to attend law school; providing sessions with pre-law advisors and attorneys; taking field trips to pre-law conferences, law schools, law offices and courts; having a guest speaker program on legal and judicial topics; and working on preparations for the LSAT. Membership in the Society is open to all UNC Charlotte students, regardless of major or year at the University. For more information, please email the faculty advisor, Kathleen Nicolaides, J.D., at knicolai@uncc.edu.

**MEDICAL TECHNOLOGY**

The University, through affiliation with Wake Forest University, offers programs leading to baccalaureate degrees in biology and chemistry, with training in medical technology. For more information on these degree programs, please see the individual sections in this Catalog for the Departments of Biology and Chemistry.

**PRE-HEALTH PROFESSIONS**

UNC Charlotte offers pre-professional preparation for undergraduate, graduate, and post-baccalaureate students interested in pursuing a career in medicine, dentistry, veterinary medicine, pharmacy, optometry, physician assistant, physical therapy, podiatry and other healthcare careers. Opportunities and services available to students include:

- Strong academic preparation in the required prerequisite “core” of courses
- Broad selection of recommended courses beyond the “core”
- Pre-Health Professions Advising for academic and nonacademic requirements for professional school admissions
- Assistance with the application process, including essay preparation and interview coaching
- Pre-Professional Faculty Evaluation Committee that prepares composite recommendation letters on the student’s behalf
- Opportunities to become involved in research
- Student clubs that offer guest speakers, community service opportunities, and support

Like most universities, UNC Charlotte does not offer a dedicated pre-health “track” or “program.” Students must select a major and are responsible for completing the prerequisites for their chosen professional school in addition to courses for their major. There is no requirement to major in science, but strong preparation in science and math must be demonstrated, regardless of the major. The Pre-Health Advisor will assist the student with identifying the appropriate pre-professional courses and formulating a timeline for their completion.

All pre-health students are encouraged to consult with the Pre-Health Advisor to plan and review their course of study and other requirements necessary for admission into professional schools. Additional information may be found online at honorscollege.uncc.edu, including prerequisite course lists for various professions.

**PREREQUISITE CORE COURSES**

The basic minimum requirements for entrance to most health professions schools are as follows:

- Biology (with labs) ................. 8 hours
- General Chemistry (with labs)........ 8 hours
- Organic Chemistry (with labs)........ 8 hours
Physics (with labs) ......................... 8 hours
English ........................................ 6 hours

Please note that these are the common minimum requirements; additional courses may be required at the discretion of the professional school. Most students will need additional coursework and healthcare-related extracurricular activities to be competitive for admission. Community service is also highly desirable.

FACULTY EVALUATION COMMITTEE FOR THE PRE-HEALTH PROFESSIONS
The UNC Charlotte Pre-Health Professions Faculty Evaluation Committee consists of faculty members from the University and serves as the main recommending body for UNC Charlotte students seeking entrance to health professions schools. In order to obtain a recommendation from the committee, the student must schedule an appointment with the Pre-Health Professions Advising Office during Spring of the year in which applications are being submitted.

PRE-HEALTH STUDENT CLUBS

ALLIED HEALTH CLUB
Students interested in health-related careers are encouraged to join the Allied Health Club. The organization sponsors speakers, volunteer opportunities in local hospitals, and trips to see admissions officers and teaching programs in schools throughout the region. Contact unc.charlotte.ahc@gmail.com for more information.

AMERICAN MEDICAL STUDENTS ASSOCIATION
Students may join AMSA for additional contact with premedical peers. AMSA hosts speakers and provides information about requirements, activities, and admission to medical schools. Community service activities are also part of AMSA’s mission. Information about this organization can be found online at bioweb.uncc.edu/amsa or by emailing unccamsa@uncc.edu.

HEALTH OCCUPATION STUDENTS OF AMERICA
HOSA is an association of future healthcare professionals, spanning all healthcare fields. Preparation for a career in healthcare, community service projects, and guest speakers are only a few of the club’s missions. Information is available at the club website at charlottehosa.org.

MINORITY ASSOCIATION OF PRE-MEDICAL STUDENTS
MAPS increases awareness of opportunities in the medical field and promotes minority involvement in health care professions and in the community. Speakers, tutoring, and volunteer activities are available through the club. Contact unccmaps1@uncc.edu for more information.

PRE-PHARMACY STUDENT ASSOCIATION
The UNC Charlotte Pre-Pharmacy Student Association is a student organization of undergraduates and post-baccalaureate students interested in attending pharmacy school. The club provides a number of different activities to educate their members about the field of pharmacy and steps needed to gain admission to pharmacy schools. They also perform a variety of volunteer duties, visit pharmacy schools and bring in representatives of various pharmacy schools in the region to speak to their members. Contact prepharmacy@uncc.edu for more information.

PRE-PHYSICAL THERAPY STUDENT ORGANIZATION
For students interested in exploring the PT profession and meeting other students with similar interests, the PPTSO provides information on academic and extracurricular preparation, speakers, and opportunities for service activities.

UNDERGRADUATE STUDENTS NATIONAL ASSOCIATION (PRE-DENTAL CLUB)
The club hosts speakers and provides information for pre-dental students. Community service activities are performed each semester. Contact predental@uncc.edu for more information.
Research

OFFICE OF THE VICE CHANCELLOR FOR RESEARCH AND FEDERAL RELATIONS
The Office of the Vice Chancellor for Research and Federal Relations provides direction and leadership for the development of research and creative activity at the University and the infrastructure that supports those activities. The Vice Chancellor coordinates federal and congressional relations and oversees seven support offices: the Office of Proposal Development, the Office of Research Services, the Office of Research Compliance, the Office of Research Cost Management, the Office of Technology Transfer, the University Vivarium, and the Small Business and Technology Development Center.

OFFICE OF PROPOSAL DEVELOPMENT
The Office of Proposal Development (OPD) works closely with faculty and funding agencies to identify opportunities for proposal development, facilitate the formation of proposal teams, and provide a wide range of services to help faculty achieve their research goals, including consultation on writing and funding strategies, and proposal editing.

OFFICE OF RESEARCH SERVICES
The Office of Research Services (ORS) provides services for the review and submission of proposals to funding agencies, including the interpretation of guidelines, preparation of budgets, and submission and tracking of proposals; for research-related contract negotiation and approval; and for post-award management support. ORS also coordinates research-support efforts with college research officers.

OFFICE OF RESEARCH COMPLIANCE
The Office of Research Compliance (ORC) facilitates and monitors university-wide compliance with federal and state policies established to ensure ethical conduct in research. Through its work with the Institutional Review Board, the ORC ensures respect, fairness and safety in human subjects’ research. Likewise, oversight for the humane care and use of animals used in research and teaching is achieved through its work with the Institutional Animal Care and Use Committee. The ORC works with the Institutional Biosafety Committee and the Environmental Health and Safety Office to oversee biohazardous agents used in research and monitor safety concerns involving chemicals and radiation, and has responsibility for the University’s adherence to export control regulations.

OFFICE OF RESEARCH COST MANAGEMENT
The Office of Research Cost Management (RCM) provides sponsored programs accounting, cash management, financial reporting, and cost analysis services. The Cost Analysis group manages the F&A and fringe benefit rate proposals to the Federal government and oversees effort reporting, cost-share reporting, recharge unit accounting, and research space inventory. The Award Management group works with the college sponsored programs offices to provide comprehensive grant accounting services from award setup through closeout and final reconciliation. The Compliance and Control group oversees billing, invoicing, cash management, sub-recipient monitoring, Federal draw-down, reconciliation, reporting, and year-end closing.

OFFICE OF TECHNOLOGY TRANSFER
The Office of Technology Transfer (OTT) provides services for the review, protection, and management of University-based intellectual property, and commercializes intellectual property through licensing services. OTT builds and maintains strategic partnerships with local and state-based economic development agencies; assists and mentors faculty and students with new business start-ups; provides outreach services in the areas of entrepreneurship, new business creation, intellectual property management, and venture capital financing; oversees all aspects of patent filing, prosecution, and maintenance; and acts as a conduit to industry for sponsored research and technology commercialization.

SMALL BUSINESS & TECHNOLOGY DEVELOPMENT CENTER
The Small Business and Technology Development Center (SBTDC) is one of 17 University-affiliated offices of The University of North Carolina’s business and technology extension service and is operated in partnership with the US Small Business Administration. SBTDC specialists provide management counseling and educational services to small and mid-sized businesses and also help business owners and managers, economic and community development organizations, education institutions and not-for-profit organizations develop strategies and action plans to gain competitive advantage. The SBTDC helps clients successfully compete for federal, state, and local government contracts; provides assistance with export financing; and provides research and marketing support services, primary research on small business needs and economic impact, and special projects such as small business incubator feasibility studies.

CHARLOTTE RESEARCH INSTITUTE
The Charlotte Research Institute (CRI) is the portal for business-university partnerships at UNC Charlotte. Regionally, CRI works with the community and the campus to accelerate technology commercialization and the growth of entrepreneurial ventures. Globally, CRI develops intellectual capital through collaborations with industry, government and academia. New business and research ventures, university partnerships with regional and national enterprises, and CRI spin-off companies all draw research and businesses to the region and spur economic growth.
Innovation and entrepreneurship are strongly supported by CRI’s Ben Craig Center business incubator (BCC). The incubator program, business advisory services, and education events offered by the BCC support dozens of companies each year. BCC focuses on community businesses and University startups that benefit most directly from proximity to expertise, services, and equipment that only the BCC and the University can provide. In addition, the Small Business and Technology Development Center located at Ben Craig Center supports hundreds of small businesses each year.

Science and engineering ventures at CRI are driven by the internationally known results of its research centers in Precision Metrology, Visualization, and Optoelectronics. CRI’s research vision continues to grow with emerging research initiatives that include bioinformatics, biomedical engineering systems, energy production and infrastructure, information security, motorsports and automotive engineering, nanoscale science, and translational research. Created in 2009, the most recent research initiative is the Infrastructure, Design, Environment and Sustainability (IDEAS) Center. With facilities on the Charlotte Research Institute Campus and at the North Carolina Research Campus in Kannapolis, CRI helps companies initiate new partnerships at UNC Charlotte and offers a variety of opportunities to engage talented faculty and make use of specialized resources available at UNC Charlotte.

The CRI campus is a Millennial Campus, as defined by North Carolina legislation, and offers special opportunities for collaboration with private sector partners. In particular, partner companies may contract for use of research capabilities or facilities on the Millennial Campus, contract for sole-use space, and construct and manage privately owned buildings. The Charlotte Research Institute manages all activities of the Millennial Campus.

The mission of the Charlotte Research Institute is to accelerate research, partnerships, and business development by promoting and sustaining UNC Charlotte research center activity that generates intellectual capital, collaborative partnerships and economic development, marketing UNC Charlotte and CRI in the Carolinas region, and beyond, as a primary source for intellectual capital and technology partnerships, developing and maintaining entrepreneurial development programs and business startup services, and creating and managing research and business development infrastructure that supports interdisciplinary research, business-university partnerships, and innovative startups.

**CENTER FOR PRECISION METROLOGY**

The Center for Precision Metrology is focused on precision engineering and measurement, including research in manufacturing processes and quality assurance for mechanical parts to within a millionth of a meter. New state-of-the-art facilities include clean rooms and multiple metrology labs. Research efforts include picometer scale positioning devices, self-aware manufacturing, large scale metrology, high-speed machining, specialized sensors, adaptive polishing and grinding. Applications have spanned many different industries from microelectronics to aerospace and attracted companies such as Caterpillar, Intel, Mitutoyo, and Boeing for collaboration. The center also includes a group focused on motorsports and automotive research with collaborative partnerships with area race teams and NASCAR. The center has been recognized as a National Science Foundation Center of Excellence in New Industry Collaboration and in Nanoscale Science and Engineering.

**VISUALIZATION CENTER**

The Visualization Center collaborates with a wide variety of business, government, and academic partners on a range of applications that include visual analytics, homeland security, information privacy and security, intelligent data analysis, systems integration, information visualization and bioinformatics. The center is designated and funded as a Regional Visualization and Analytics Center by the U.S. Department of Homeland Security.

**CENTER FOR OPTOELECTRONICS AND OPTICAL COMMUNICATIONS**

The Center for Optoelectronics and Optical Communications includes research areas in: design and fabrication of photonic devices, meta-materials, integrated optical circuitry, assembly and packaging of optical systems, optical materials, methods for precision optical metrology, and optical imaging and inverse methods for wave front synthesis. The center has successfully allied with the Massachusetts Institute of Technology (MIT), Duke University, The Carolinas MicroOptics Triangle, and the North Carolina Photonics Consortium. A respected leader in the discipline, the center has continuing support from the Defense Advancement Research Projects Agency (DARPA).

**BIOINFORMATICS RESEARCH CENTER**

The Bioinformatics Research Center conducts multi-disciplinary research involving the physical and life sciences, computer science, and mathematics and statistics with specific focus in the areas of
functional genomics, statistical genetics, and proteomics. Projects underway include work in mechanisms of alternative gene splicing, new approaches to the analysis of microarray data, and the use of systems analysis techniques to understand gene-gene interactions. The center has taken a leadership role in developing Bioinformatics programs in collaboration with the developers of the North Carolina Research Campus, a billion-dollar, 350-acre research park that will be home to the research programs of a large number of private biotechnology companies as well as university and medical research programs.

CENTER FOR BIOMEDICAL ENGINEERING SYSTEMS
The Center for Biomedical Engineering Systems addresses complex problems in healthcare in the Charlotte community and beyond. The center builds research and development collaborations between researchers within UNC Charlotte's Colleges of Engineering, Liberal Arts and Sciences, Health and Human Services, and Computing and Informatics; local healthcare institutions (including Carolinas Medical Center, Charlotte Orthopedic Research Center, and Presbyterian Hospital); and corporations in the Charlotte metropolitan area to solve biomedical engineering problems. The center's research is focused in four primary areas: (1) biomedical support systems; (2) biomedical modeling, imaging, and processing; (3) biomechanics and mobility research, and biomedical instrumentation.

ENERGY PRODUCTION AND INFRASTRUCTURE CENTER (EPIC)
The Energy Production and Infrastructure Center (EPIC) targets innovation in technologies associated with generation and distribution of reliable, affordable and clean energy sources. UNC Charlotte is partnering with the energy and infrastructure industry to create a scientific and technical resource for the energy industry and a training ground for the energy workforce. EPIC is an interdisciplinary research center with a strong emphasis on collaboration among the disciplines of civil and environmental engineering, computer and electrical engineering, mechanical engineering and engineering science, and systems engineering and engineering management.

LIFE SCIENCE RESEARCH
Life Science Research is now developing strongly in four focus areas. Translational Research is designed to join basic science research with patient care to develop novel treatments and therapies for diseases and healthcare problems. Health Services Research harnesses the power of visual analytics for data warehousing/mining of large scale databases (vital statistics, hospital discharges) for decision support for both clinical and public health research domains. Kinesiology Research is focused on biodynamics and exercise physiology. Ecology and Environmental Biology Research is geared toward toxicology, bacteriology and biotechnology.

INFRASTRUCTURE, DESIGN, ENVIRONMENT, AND SUSTAINABILITY (IDEAS) CENTER
The Infrastructure, Design, Environment and Sustainability (IDEAS) Center was created to provide regional leadership to accelerate a cultural and technological shift to more sustainable practices as humans create and live in the built environment. Research topics are broad and include renewable energy, high performance building and renovation, low impact materials, material reuse and recovery, sensor applications, monitoring and long term performance assessments, greenhouse gas inventories, life cycle assessments, and low impact development.

More information about the Charlotte Research Institute can be found online at charlotteresearchinstitute.com.

UNC CHARLOTTE URBAN INSTITUTE
The UNC Charlotte Urban Institute is the University’s applied research and community outreach center for urban and regional affairs, connecting faculty and students with community organizations and public institutions working on significant public policy issues in the 14-county, two-state region surrounding Charlotte. Founded in 1969, the Institute has provided during its 40-year tenure a wide-range of services, including technical assistance and training related to operations and data management, public opinion surveys, land-use and natural resources consulting, economic development research, and community planning to meet the needs of the region and its citizens. The Institute’s continuing focus has been a multidisciplinary social sciences approach to research, outreach, and training to support informed decision-making in the region. Ongoing programs include:

CHARLOTTE REGIONAL INDICATORS PROJECT
The Charlotte Regional Indicators Project compiles objective, reliable, and relevant measures for the greater Charlotte region on indicators important to the region’s quality of life. Organized in ten theme areas, and measured over time and compared to state or national data, the indicators provide policymakers, civic leaders, and the public with a solid foundation for engaging in efforts to address the region’s social, economic, and environmental challenges.

RENAISSANCE COMPUTING INSTITUTE
The Renaissance Computing Institute (RENCI) at UNC Charlotte, which focuses on understanding urbanization and its effects on the North Carolina Piedmont, is a collaboration of the UNC Charlotte Urban Institute, the UNC Charlotte Center for Applied Geographic Information Science, and the Charlotte Visualization Center. RENCI is part of a statewide research collaborative committed to finding solutions to complex, multidisciplinary problems using world-class computing resources and tools for data analysis and visualization.
CENTER FOR TRANSPORTATION POLICY STUDIES
The Center for Transportation Policy Studies is dedicated to the research and study of transportation issues and transportation-related policy. The Center conducts research and policy analyses that result in efficient and cost effective investments and sound decisions for developing and maintaining multimodal transportation systems and services.

SCHOOL SERVICES DIVISION
The School Services Division focuses on planning and technology issues related to school operations, data management and training. A major on-going project involves providing software support and training for a statewide computerized school bus routing project called TIMS (Transportation Information Management System). As part of the TIMS project, the School Services Division provides support for public school districts in 40 of the 100 counties in North Carolina.

Visit ui.uncc.edu for more information about the Urban Institute and its programs.

Safety

POLICE AND PUBLIC SAFETY
In 2008, out of 350 participating colleges and universities, UNC Charlotte became the first recipient of the National Campus Safety Awareness Month (NCSAM) Award. Leading this successful effort was the UNC Charlotte Police and Public Safety Department (UNCC PD), who partnered with several key departments and organizations on and off campus to proactively raise student awareness of best practices regarding their safety and security.

Also in 2008, the Division of Business Affairs reorganized key departments into the new Risk Management, Safety, and Security (RMSS) Department. UNCC PD is now a member of this progressive assessment and intervention model and routinely works with partners in Risk Management, Environmental Health and Safety, and Business Continuity Planning on safety and security, emergency preparedness, accident reduction, and other related matters.

UNCC PD proactively patrols and responds to calls from the University community 24/7 year-round, including any and all breaks. The overwhelming majority of its officers and investigators are sworn police who have successfully completed the same state training and certification required of all North Carolina law enforcement officers. Patrols are conducted in marked and unmarked cars, bicycles, motorcycle, and foot. Uniformed, non-sworn rangers and (during the academic year) contract security act as extra “eyes and ears” by patrolling and securing buildings and parking lots. Security personnel from the Housing and Residence Life, Atkins Library, and Halton Arena/Student Activities Center provide additional layers of safety and often work in concert with UNCC PD.

UNCC PD’s administrative offices are located at the Facilities Management and Police Building on Cameron Boulevard near Mary Alexander Road. In 2009, UNCC PD completed its full relocation when the police communications center moved into the same building. This 24/7 center is run by professionally trained and certified telecommunicators, who answer and triage both emergency and routine calls, monitor life and safety alarms, and dispatch departmental and other appropriate personnel. Recently increased radio interoperability enables UNCC PD telecommunicators and officers to communicate with the city’s police, firefighters, and emergency medical services.

Critical to effective police and emergency services is the multi-agency information sharing conducted by radio and phone, at meetings, online, via training, and through investigative partnerships on daily, weekly, bimonthly, and quarterly bases.

Through campus and off-campus channels, UNCC PD carries out a number of responsibilities: crime prevention programs and services; awareness education and literature; safeguarding of life and
property; protection of civil rights; enforcement of state laws and university regulations; apprehension of criminals; criminal prosecution and/or filing of disciplinary charges; special event security and dignitary protection; campus-wide Lost and Found service; community safety advisories; disaster planning and responses; and victim/witness assistance.

**EMERGENCY LIGHTS AND TELEPHONES**

Approximately 200 “Blue Light” and other emergency telephones are located throughout the campus, so campus members and visitors can report suspicious activities or summon police or medical assistance. UNCC PD telecommunicators also can help direct requests for safety or disability escorts to the new SafeRide Program operated by the Parking and Transportation Services (see the Parking and Transportation section of this Catalog for details). Additionally, UNCC PD’s Crime Prevention Unit can conduct or arrange RAD (Rape Aggression Defense Systems) courses for women, personal safety presentations and other crime prevention presentations for men and women, off-campus safety, vehicle break-ins and theft, travel safety (domestic or abroad), information booths, property registration drives, wellness programs (related to safety), security surveys, career fairs, etc. These can be done for the classroom, residence hall/floor, club meeting, workplace, or other setting.

UNCC PD is very interested in working with students on academic, civic, and other projects related to law enforcement and community concerns. Examples include, but are not limited to, departmental internships, academic papers, interviews, and annual observances such as NCSAM, National Crime Victims’ Rights Week, Domestic Violence Prevention, and Police Memorial Week. For more information, please visit police.uncc.edu.

**ENVIRONMENTAL HEALTH AND SAFETY**

It is the mission of the Environmental Health and Safety Office to support the University by working with all University community members to provide a safe and healthy working, teaching, learning and living environment. This is accomplished by providing high-quality, responsive customer-focused environmental health and safety services to the campus community. It is our responsibility to develop environmental health and safety programs, maintain appropriate accident documentation, conduct safety inspections of all facilities and operations, audit safety programs, maintain all regulatory required reports, and generally work to reduce the risks of illness or injury.

All members of the University community share the responsibility to provide and maintain a safe and healthful campus environment and to reduce or eliminate known hazards. Each individual is expected to exercise appropriate care in the conduct of his or her activities to preserve the safety and health of self and others. For more information, please visit safety.uncc.edu.
Sports and Recreation

The Charlotte 49ers Department of Athletics provides competition in 16 intercollegiate varsity sports for men and women. Each sport competes under the governing powers of the National Collegiate Athletic Association (NCAA) at the Division I level, which is the highest competitive level for collegiate varsity sports. Scholarships are available for all varsity sports, male and female.

Male student-athletes compete in eight sports: baseball, basketball, cross-country, golf, soccer, tennis, indoor track and field, and outdoor track and field. Female student-athletes also compete in eight sports: basketball, cross-country, soccer, softball, tennis, volleyball, indoor track and field, and outdoor track and field.

The Charlotte 49ers are affiliated with the Atlantic 10 Conference with play in the league beginning in 2005-06. The Atlantic 10 is comprised of 14 schools: Charlotte, University of Dayton, Duquesne University, Fordham University, George Washington University, La Salle University, University of Massachusetts, University of Rhode Island, University of Richmond, St. Bonaventure University, Saint Joseph’s University, Saint Louis University, Temple University and Xavier University. Atlantic 10 tournament champions in baseball, men’s and women’s basketball, golf, men’s and women’s soccer, softball, men’s and women’s tennis and volleyball receive automatic bids to the NCAA post-season tournaments. Conference championships are also held for track and field and cross country.

On-campus facilities play host to Charlotte 49ers athletics, with the exception of golf and cross-country. Sites for home competition for the 49ers include Halton Arena for basketball and volleyball teams, the Irwin Belk Center and Transamerica Field for soccer and track and field, the Phillips Tennis Complex for tennis, Robert and Mariam Hayes Stadium for baseball and the Phillips Softball Diamond for the softball team.

For more information about the Charlotte 49ers, please visit Charlotte49ers.com.

IMPORTANT: UNC Charlotte students receive FREE admission to all regular-season home athletic contests with proper University identification.

RECREATIONAL SERVICES

Recreational Services develops and conducts programs that provide opportunities for University students and faculty/staff members to participate in recreational activities. Five major program areas offer a variety of structures in which members of the University community may pursue recreational interests. Intramural tournaments and events are scheduled throughout the year for individual, dual, and team participation. The tournaments and events are organized to provide separate competition among coeducational, men’s, and women’s teams. Sport Clubs provide an opportunity to participate in a single sport on a continuing basis. Approximately thirty clubs, ranging from equestrian to lacrosse to tennis, are active each semester. Fitness and Wellness opportunities include group fitness, mind/body courses and personal training. Three major Special Events are offered each year, RecFest, Homecoming 5K Run/Walk, and a Spring Golf Tournament. The Special events are open to the public and may involve food, games, prizes, entertainment, and competition. In addition to structured sports programs, the division promotes the concept of informal recreational use of athletic facilities through the Open Recreation Program. Recreational Services offers Summer Youth Programs for rising 3rd through 8th graders. Job opportunities for students with backgrounds in camp counseling and sports are available through this program. For more information, please visit recservices.uncc.edu.

RECREATIONAL FACILITIES

BELK GYMNASIUM
The Belk Gymnasium features basketball, volleyball and badminton courts, an indoor swimming pool, racquetball courts, and lockers for students, faculty, and staff. It also houses classrooms and an auditorium for audiovisual presentations.

STUDENT ACTIVITY CENTER
The James H. Barnhardt Student Activity Center (SAC) is a multi-purpose facility designed to meet the diverse social, cultural, and recreational needs of students at UNC Charlotte. The SAC is home to the Halton Arena, a 9,000 venue hosting athletic events,
concerts, lectures, and a variety of other university functions.

Retractable seating in the area folds back to reveal four recreational courts that may be used for intramural sports, free-play, sports camps, or for special events including job fairs, trade shows, etc. Other recreational offerings include a state-of-the-art weight room, aerobics studio, indoor track, and indoor climbing wall. In addition to the physical fitness and wellness facilities, the SAC also serves as a meeting place for students and the campus community. The third floor of the SAC is comprised of a large and gracious hospitality area that can be subdivided into five separate meeting salons. Adjacent to the hospitality area is a campus catering kitchen, serving the special events in the SAC as well as other campus events.

Student Activities

Student Activities is comprised of the following areas: Campus Activities Board (CAB), Center for Leadership Development (CLD), Multicultural Resource Center (MRC), Religious and Spiritual Life, (a unit of MRC), Niners on the Weekend (NOW), Special Programs, Student Media Publications, Student Organizations, and Venture Outdoor Education. Student Activities staff provide opportunities for holistic student development through involvement in the above areas.

If you're not sure how or where to get involved, let Student Activities help. For additional information, call 704-687-7122 or visit the above website.

Campus Activities Board

The Campus Activities Board (CAB) is the largest student programming organization on campus and is responsible for planning diverse, quality events for the University community. CAB offers approximately 80 programs a year and works to enhance and unify the University community by planning social, cultural, educational and recreational events that complement the university’s academic mission. Founded early in the history of UNC Charlotte, CAB maintains a vital role in fostering Niner Nation spirit and traditions through popular programs such as Week of Welcome, Week of Madness, Homecoming, and more.

CAB is located on the second floor of the Student Union. For more information, visit the above website or call 704-687-7152. Opportunities for student involvement include the following committees:

CAB Live
Brings entertainment ranging from comedy, live music, variety acts, poetry slams, coffeehouses, and other entertainment trends. On at least one Friday night each month, this committee brings a wide variety of diverse acts to campus.

Talks and Topics
Sometimes serious, sometimes fun, or sometimes a little of both! In an effort to complement the academic mission and offer a marketplace of various opinions and ideas, this committee provides forums,
lectures, and debates on a variety of issues and topics.

**NINERS AT NOON**
You never knew your lunchtime could be so much fun! Play bingo, decorate a T-shirt, or just sit back and enjoy a variety of musical entertainment. Between 11 a.m. and 2 p.m., this committee builds community on campus by providing students with a welcome break from their busy schedules.

**T.A.X.I. – TALENT, ACTIVITIES XCURSIONS & INTERESTS**
You can see it all here! This committee merges a combination of cultural, entertainment, trips, and special interest events throughout the campus community, and creates educational and entertainment activities for students.

**SPIRIT AND TRADITIONS**
Enables students to be part of living the 49er spirit and traditions by planning annual events such as Homecoming, Days of Madness, and Week of Welcome. This committee works collaboratively with other campus organizations, faculty, and staff to produce university wide events.

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**STUDENT MEDIA PRODUCTIONS**

The Student Media Board is the governing body for Student Media. It is comprised of students and administrative staff members, as well as representatives of the various student media.

**THE UNIVERSITY TIMES**
*The University Times* is the campus newspaper, published every Tuesday and Thursday, and offers campus news and journalism experience for students. The newspaper provides a vital service to the entire University community by keeping readers informed of issues of common concern and interest. Family members may keep informed with the University's news by calling 704-687-7140 and ordering a subscription to *The University Times*.

**NINERONLINE.COM**
NinerOnline.com is the university community's home in cyberspace. UNCC news, sports, and feature stories are posted several times each week. Students can check out Niner News, the website's video news show posted each Friday. Students gain experience with Internet publishing and video production by working with NinerOnline. Visit the site at nineronline.com.

**MEDIA MARKETING**
The sales and promotions branch of Student Media, the department solicits advertising and coordinates promotion for UNC Charlotte's student publications. Media Marketing offers real world experience and internship opportunities for business, marketing, and communication careers.

**SANSKRIT**
*Sanskrit* is the nationally recognized literary-arts magazine published by students interested in the arts. Original work in writing, drawing, photography, and other arts is welcomed by the editor. Submissions are professionally juried, and selections are published in the annual edition of the magazine.

**RADIO FREE CHARLOTTE**
An online digital radio station that focuses on underground electronic and independent music, as well as sports, news, and local events. Listen online at radiofreecharlotte.uncc.edu.

**PRACTICUM**
Available to students who participate in one of the Student Media departments. Academic credit is offered through the Department of Communications Studies. The course in Journalism Practicum (JOUR 3401) is offered each semester.

**INTERNSHIPS**
Available in Student Media. Interns can earn academic credit and receive "hands on" media experience in writing, design, photography, advertising, desktop publishing, and management.

For more information about how to get involved with the student media, contact the office at 704-687-7140 or visit the Student Media website. Student Media is located in the Student Union.

**NINERS ON THE WEEKEND**
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Niners on the Weekend (NOW) hosts student campus programs on the weekend throughout the school year. NOW programs occur regularly in the Student Union, Cone University Center, and Student Activity Center. One Friday night a month, the Student Union comes alive during the Union Takeover, a late night program that brings hundreds of students
together for camaraderie. Visit the website for all
the latest event information, and sign up for the
weekly listserv to stay current on what’s happening
NOW.

**CENTER FOR LEADERSHIP DEVELOPMENT**

leadership.uncc.edu

The UNC Charlotte Center for Leadership Development provides students with opportunities to
develop leadership skills and abilities and provides
the University and student organizations more
effective leadership. The goal is to provide a
comprehensive and diverse program of leadership
development activities for current student leaders
and potential leaders.

The program consists of both group and self-paced
leadership components, retreats and conferences, as
well as academic courses. Individual and group
consultation is also available.

**ACADEMIC CERTIFICATE IN LEADERSHIP STUDIES**

An 18-credit hour concentration in interdisciplinary
leadership studies leading to an academic certificate
awarded at graduation from the institution.

**CONFERENCES**

Co-sponsorship of leadership conferences, such as
Greeks and multicultural leadership conferences.

**EMERGING LEADERS**

Group leadership experience for freshmen
(applications available early Fall semester).

**INDIVIDUAL AND GROUP CONSULTATION**

Assistance with applications, interviewing, leadership
issues and programmatic needs.

**LEAD TEAM**

Students trained as presenters available to make
presentations on a wide variety of leadership topics.

**LEADERSHAPE INSTITUTE**

Leadership program
for established
leaders; focus is on
vision and leading with
integrity.

**LEADERSHIP FELLOWS**

Fall semester group
leadership experience
for upper classmen
(applications available
Spring semester).

**LEADERSHIP JOURNEY LEARNING COMMUNITY**

One-year residential program for first-year students
who have an interest in developing or building
leadership skills and abilities.

**LEADERSHIP, COMMUNICATION, AND GROUP DYNAMICS**

A 3-hour leadership theory course (COMM 3135).

**LEADERSHIP, SERVICE AND ETHICS**

A 3-hour course in communication studies for
students interested in developing a leadership
framework and obtaining academic credit (COMM
3136).

**LEADERSHIP AND ETHICS**

A 3-hour seminar course that serves as an
introduction to ethics and provides learners
opportunities to identify and analyze ethical
situations from the perspective of a leader.

**PILOT (PROGRAMS IN LEADERSHIP AND
ORGANIZATIONAL TRAINING)**

Individualized leadership program that provides an
opportunity for leadership certification in a self-
paced program

Contact the Center for Leadership Development for
more information at 704-687-5323 or online at the
above website.

**MULTICULTURAL RESOURCE CENTER**

mrc.uncc.edu

The Multicultural Resource Center (MRC) offers an
environment for students, faculty and staff to learn
about and to further explore personal identity,
diversity, and global relationships while
making connections with individuals that
represent a vast array of heritages,
backgrounds, interests,
and experiences. The
Center is available to
assist students
individually in their
own explorations of
themselves and/or
others as well as to
assist student
organizations in their operations and programming
efforts.

The MRC is located in the Student Union and houses
a resource area bearing information regarding
both University and community support sources;
a multicultural library that covers a variety of topics;
an assortment of multicultural publications
(magazines, newspapers, & newsletters); and
computers with printing access. To supplement these resources, the
Center offers ongoing education and training
exploring the many facets of diversity and human
relations.

Programming supported by the MRC include the
annual International Festival, Martin Luther King, Jr.
Celebration, cultural heritage months (Black History Month, Hispanic/Latino Heritage Month, Asian/Pacific Islander Heritage Month, etc.), as well as other special events. Along with these efforts, the MRC provides support to 40+ multicultural student organizations, as well as support for student/student organizational efforts that support its mission and purpose. Supported organizations include the Black Student Union (BSU), Latin American Student Organization (LASO), Muslim Student Association, People Recognizing Individual Diversity and Equality (PRIDE), Vietnamese Student Association, and a host of others.

MULTICULTURAL STUDENT COUNCIL (MSC)
The Multicultural Student Council is a diverse body of students organized to assist the MRC in its efforts to promote multiculturalism. Along with the Center, the MSC works closely and collaboratively with students, student organizations, and departments to support the unique diversity present at UNC Charlotte and the Charlotte community.

RELIGIOUS AND SPIRITUAL LIFE (RSL)
RSL is a subunit of the Multicultural Resource Center and serves as a liaison for faith-related matters within the University community. Additionally, RSL assists in the holistic development of UNC Charlotte students by providing avenues to explore religious and spiritual identity and expression. Through dialogues, workshops, programming, and student organizational support, RSL promotes personal growth, mutual understanding, and a healthy, engaged community. Visit online at rsl.uncc.edu.

VENTURE
venture.uncc.edu
Venture offers experiential learning, workshops and adventure trips in outdoor settings. Activities include day trips as well as weekend trips in a variety of outdoor endeavors from backpacking to rock climbing to kayaking, and programs at our on-campus team development course, high ropes team challenge course, and indoor climbing wall. Venture programs are modeled on Outward Bound and are designed to facilitate individual growth through physical challenge, group interaction, and personal reflection; all while having fun. Students involved in VOLTAGE (Venture Outdoor Leadership Training and Group Experience) have the opportunity to be trained as student leaders to instruct Venture’s variety of programs. Venture houses a resource library to help individuals plan their own adventure trips. Outdoor camping gear can be rented.

Venture also offers courses for academic credit through the Department of Kinesiology. Each fall, a four-credit course, Wilderness Experience, offers a modified Outward Bound experience presenting a series of increasing challenges. A variety of one- and two-credit outdoor activity courses is also offered including: Introduction to Outdoor Adventures, Rock Climbing, Challenge Course Activities, Wilderness Trip Leading and Challenge Course Facilitation for the low and high challenge course. For additional details and to see the descriptions for EXER courses, visit venture.uncc.edu/academics.

For more information about Venture please go to venture.uncc.edu, contact the Venture Program at 704-687-2486, or stop by the Venture office in the Cone University Center (entrance off the Cone lower plaza).

STUDENT ORGANIZATIONS
studentorgs.uncc.edu
The University has approximately 350 student organizations that enhance the academic experience of UNC Charlotte students. The categories of student organizations include: academic (pre-professional), performance, service, political, religious, multicultural, international, interest, sport clubs, honor societies, graduate groups and “other.” There are many benefits to joining a student organization, including making new friends, developing new skills and abilities, working as part of a team, learning to set and achieve goals, sharing your time and talents, as well as having fun. The Student Activities staff encourages students to enhance their education at UNC Charlotte by becoming involved. Contact the office at 704-687-7176 for a listing of the student organizations registered by the Student Government Association. A current listing of all student organizations is available online at the above website.
SPECIAL PROGRAMS

The Student Activities staff also supports special programs such as Homecoming, Haunted Union, and Late Night Breakfast. These are annual events that build spirit and tradition and are popular among students. Homecoming provides numerous involvement opportunities for students and the University community. Learn more about these and other programs throughout the year at the Student Activities website at studentactivities.uncc.edu.

University Advancement

The University recognizes that its mission reaches beyond the borders of the campus to the surrounding region and the state. The University touches many facets of community life and serves as a catalyst for development of a regional approach to solving problems in education, economic development, transportation, the environment, cultural amenities, and the quality of life. Faculty, staff, and students have made a significant impact on the region through research, historic preservation, planning, the arts and literature, and the delivery of government and social services.

ALUMNI AFFAIRS

The Office of Alumni Affairs, located in the Harris Alumni Center at Johnson Glen, serves as the liaison between the University and its alumni. Some of the most rewarding experiences of University life begin at graduation when former students enter the Alumni Association. Alumni are an essential part of our University and are among the University’s most valued supporters. Responsibility for strengthening and maintaining the relationship between the University and its alumni is vested in Alumni Affairs.

Programs of the Alumni Association include the regional, local, special interest and collegiate chapters, homecoming activities, networking socials, athletic support, and sponsorship of the Student Alumni Ambassadors.

The Office seeks to maintain lifelong contact with all graduates. Graduates are encouraged to become active in the Alumni Association and to notify the Office of Alumni Affairs of address changes, employment information, and other significant events, such as marriages, births and honors. Today, UNC Charlotte boasts more than 80,000 living alumni and adds 4,500 to 5,000 new alumni each year. We are a non-dues paying organization, and the only requirement for membership is that you be an alumnus of the University.

For more information about the Alumni Association, please visit unccharlottealumni.org.

BROADCAST COMMUNICATIONS

Broadcast Communications provides media production services to the University community, as
well as distance education and videoconferencing support. In addition, this department operates or supplies content to a variety of distribution outlets through sources such as Time Warner Cable, AT&T U-verse, iTunesU, Facebook, YouTube and the UNC Charlotte main website. Furthermore, the staff produces several ongoing series on a variety of topics such as: “Alumni Today,” a program that focuses on the current activities of Alumni and how their UNC Charlotte education still impacts their lives today; “The 49ers Insider,” a weekly program that brings you interviews, highlights, special features and the schedule of events of all 16 teams in the Charlotte 49ers Department of Athletics; “Campus Conversations,” a program that highlights the wide variety of programs, activities and events at UNC Charlotte; “Faculty Research,” a show designed to let you hear from the researchers themselves as they describe current and future projects; and “Medicine/Business & Society,” two related series that discuss various topics in the fields of medical ethics and business ethics that affect everyone.

COMMUNITY AFFAIRS
The mission of the Office of Community Affairs is to extend and strengthen the University’s presence in the region. It involves engaging the greater business community, the University City community and campus community to represent UNC Charlotte’s resources and opportunities. Community Affairs works to strengthen the University brand through relationships.

CONSTITUENT RELATIONS
The Office of Constituent Relations has primary responsibility for fostering, supporting, and expanding the University’s relationships with the state, regional, and local governmental and non-governamental organizations that can strengthen the University in its ability to deliver educational and research programs in support of its mission.

MARKETING SERVICES
Marketing Services manages or coordinates all the university marketing efforts. There are two main functions: (1) coordination of university marketing plans and the creative strategies, production and media associated with these plans, including graphic standards and brand management and (2) Web Communications to include maintenance of the top levels of the UNCC.edu domain and brand integration through those channels. Web Communications also coordinates global university content management system usage and design guidelines.

PUBLIC RELATIONS
Public Relations is the official communications channel through which the University disseminates information to its various publics. The office has five major functions: (1) external media relations; (2) internal communications; (3) official University publications that are distributed to off-campus audiences; (4) executive communications for the chancellor and vice chancellor for university advancement; and (5) crisis communication and management. The office works with media outlets throughout the country on news and feature coverage about University programs and its people. Additionally, the staff writes and distributes tip sheets and news releases about campus activities, as well as faculty and student achievements. The office produces a weekly newsletter, Campus News, to inform faculty and staff about campus activities; publishes the official university magazine, UNC Charlotte, which is distributed to alumni and friends of the University, and contributes writing and editing for publications related to special events.

UNIVERSITY DEVELOPMENT
Known traditionally as a “state-supported institution,” UNC Charlotte is more accurately a “state-assisted institution,” as the University depends on non-state resources for more than half of its operating needs. Philanthropy is critically important, providing the critical margin of excellence so that the University can fulfill its threefold mission of education, research and public service.

The Office of University Development plans and implements the private fund-raising and related efforts of the University and the Foundation of The University of North Carolina at Charlotte, Inc. Its functions include annual giving, gift planning, major gifts, corporate and foundation relations, gift processing, alumni/donor records, research, donor stewardship, prospect coordination and clearance, and campus-wide development services.

FOUNDATION OF THE UNIVERSITY OF NORTH CAROLINA AT CHARLOTTE, INC.
The Foundation of The University of North Carolina at Charlotte, Inc. is the 501(c)(3) public charity, incorporated in 1965 to benefit UNC Charlotte through asset management and fund raising. The Foundation advances UNC Charlotte as North Carolina’s urban research university through active engagement, advocacy, fund raising, and stewardship.
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<td>Professor of Counseling, Special Education, and Child Development Emerita, A.B., M.S., Ph.D.</td>
<td>University of North Carolina at Greensboro</td>
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<tr>
<td>Carole Elaine Runnion (1989)</td>
<td>Librarian and Associate Professor Emerita, B.A.</td>
<td>Catawba College; M.S.L.S., University of North Carolina at Chapel Hill</td>
</tr>
<tr>
<td>Earl Richard Sage (1973)</td>
<td>Associate Professor of Management Emeritus, B.S.B.A., Ohio State University; M.B.A., Harvard University; Ph.D., Ohio State University</td>
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<td>Paul Antonius Saman (1963)</td>
<td>Professor of French Emeritus, Ph.D.</td>
<td>Charles University</td>
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<td>Lonnie Delores Sanders (1974)</td>
<td>Assistant Professor of Nursing Emerita, B.S.N.</td>
<td>Winston-Salem State University; M.Ed., University of North Carolina at Charlotte; M.N., Ph.D., University of South Carolina</td>
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<td>Joseph Francis Schell (1964)</td>
<td>Professor of Computer Science Emeritus, B.S., University of Dayton; M.A., Ph.D., Indiana University</td>
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<td>Norman Willard Schul (1967)</td>
<td>Professor of Geography Emeritus, B.A., M.A., Miami University; Ph.D., Syracuse University</td>
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<td>Morton Shapiro (1964)</td>
<td>Associate Professor of English Emeritus, B.A., M.A., University of Miami; Ph.D., University of Alabama</td>
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<td>James David Shumaker (1972)</td>
<td>Professor of Philosophy Emeritus, A.B. Pfeiffer College; M.A., Ph.D., Florida State University</td>
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<td>Ronald Bernard Simono (1967)</td>
<td>Professor of Psychology Emeritus, B.S., St. Norbert College; M.S., Ph.D., University of Wisconsin</td>
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<td>Hoyle Mitchel Simpson (1982)</td>
<td>Associate Professor of Physics and Optical Science Emeritus, B.A., Pfeiffer College; Ph.D., Clemson University</td>
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<tr>
<td>Frederik N. Smith (1984)</td>
<td>Professor of English Emeritus, B.S., Loyola College; M.A., Ph.D., University of Virginia</td>
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<tr>
<td>William Alexander Smith (1966)</td>
<td>Associate Professor of Electrical Engineering Emeritus, A.A. Charlotte College; B.S., M.S., Clemson University; P.E.</td>
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<tr>
<td>Robert Douglas Snyder (1975)</td>
<td>Dean Emeritus, The William States Lee College of Engineering, and Professor of Engineering Science, B.S.M.E., Indiana Institute of Technology; M.S.M.E., Clemson University; Ph.D., West Virginia University; P.E.</td>
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<tr>
<td>David Sohn (1964)</td>
<td>Associate Professor of Psychology Emeritus, B.A., Brooklyn College; Ph.D., University of Texas at Austin</td>
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<tr>
<td>John Willis Sommer (1993)</td>
<td>Knight Distinguished Professor of Public Policy, Professor of Geography, and Professor of Political Science Emeritus, A.B., Dartmouth College; A.M., Ph.D., Boston University</td>
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<tr>
<td>Edward Byron St. Clair (1970)</td>
<td>Associate Professor of Religious Studies, B.A., George Washington University; B.D., Southeastern Baptist Theological Seminary; Ph.D., Duke University</td>
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</tbody>
</table>
Thomas H. Stevenson (1976), *Cullen Professor of Marketing Emeritus*, B.S.B.A., M.B.A., Syracuse University; Ph.D., Case Western Reserve University

Martha L. Stewart (1958), *Assistant Professor of Mathematics Emerita*, A.B., Winthrop College; A.M., Duke University

Roy Strassberg (2001), *Professor of Art Emeritus*, B.A., State University of New York at Oswego; M.F.A., University of Michigan

Martha Ann Strawn (1971), *Professor of Art Emerita*, B.A., Florida State University; M.F.A., Ohio University

Alfred Wright Stuart (1969), *Professor of Geography Emeritus*, B.S., University of South Carolina; M.S., Emory University; Ph.D., Ohio State University

Frances Lovenia Summerville (1968), *Associate Professor and Librarian Emerita*, B.A., St. Andrews Presbyterian College; M.L.S., Peabody College

Judith Diann Suther (1979), *Professor of French Emerita*, B.A., University of Missouri-Columbia; M.A., University of Michigan; Ph.D., University of Missouri-Columbia

Jane K. Testerman (1997), *Associate Professor of Educational Leadership Emerita*, B.A., M.Ed., University of North Carolina at Charlotte; Ed.S., Appalachian State University; Ed.D., University of North Carolina at Greensboro

Herman Edward Thomas (1974), *Professor of Religious Studies Emeritus*, B.S., North Carolina A & T State University; B.D., Th.M., Duke University; Ph.D., Hartford Seminary Foundation

Mary Beth Thomas (1980), *Professor of Biology Emerita*, B.A., Agnes Scott College; M.A., Ph.D., University of North Carolina at Chapel Hill

Joan Sinclair Tillotson (1973), *Associate Professor Kinesiology Emerita*, B.S., State University College of New York; M.A., Ph.D., State University of Iowa

Winston Reed Tite (1980), *Associate Professor of Art Emeritus*, B.S., Weber State College; M.F.A., Arizona State University

Richard Henry Toenjes (1973), *Associate Professor of Philosophy Emeritus*, B.A., M.A., St. Louis University; Ph.D., University of Southern California

Jim Travis (1973), *Associate Professor of Biology Emeritus*, B.S., M.S., East Texas State College; Ph.D., Texas A&M University

Thomas Coke Turner (1966), *Professor of Accounting Emeritus*, B.S., Furman University; M.B.A., University of North Carolina at Chapel Hill; C.P.A.

Lazaros A. Varnas (1968), *Professor of English Emeritus*, Certificate, British Institute; M.A., Ph.D., University of Pennsylvania

Robert Vermillion (1965), *Professor of Physics and Optical Science Emeritus*, A.B., King College; M.S., Ph.D., Vanderbilt University

Dean Bryant Vollendorf (1976), *Associate Professor of Architecture Emeritus*, B.S. Arch., University of Cincinnati; M.Arch., Clemson University

Wayne A. Walcott (1970), *Senior Associate Provost Emeritus*, Academic Affairs; and *Associate Professor of Geography and Earth Sciences Emeritus*, B.S., Western Michigan University; M.A., Ph.D., University of Illinois at Urbana-Champaign

Thomas Walsh (1970), *Associate Professor of Chemistry Emeritus*, A.B., University of Notre Dame; Ph.D., University of California-Berkeley

Samuel Dibble Watson, Jr. (1973), *Professor of English Emeritus*, B.A., Wofford College; M.A., University of Virginia; Ph.D., University of Iowa


Barnet M. Weinstock (1977), *Professor of Mathematics Emeritus*, A.B., Columbia College; Ph.D., Massachusetts Institute of Technology

James H. Werntz, Jr. (1981), *Vice Chancellor for Academic Affairs Emeritus*, B.A., Oberlin College; M.A., Ph.D., University of Wisconsin at Madison

Charles Robertson Whaley (1974), *Assistant Professor of Education Emeritus*, A.B., Princeton University; M.A.T., University of North Carolina at Chapel Hill; Ph.D., University of Texas at Austin

Richard Bert White (1983), *Professor of Special Education and Child Development Emeritus*, B.A., Miami University; M.S.Ed., Ed.D., Indiana University

Volker Wihstutz (1987), *Professor of Mathematics and Statistics Emeritus*, Diploma, University of Frankfurt, Germany; Ph.D., University of Bremen, Germany

Loy Hahn Witherspoon (1964), *Professor of Philosophy and Religion Emeritus*, A.B., B.D., Duke University; Ph.D., Boston University

James H. Woodward (1989), *Chancellor Emeritus* and *Professor of Civil and Environmental Engineering Emeritus*, B.S.A.E., M.S.A.E., Ph.D., Georgia Institute of Technology; M.B.A., University of Alabama at Birmingham

Hazel Drye Wright (1966), *Assistant Professor of Mathematics Emerita*, B.S., Appalachian State Teachers College; M.A. Wake Forest College
Maria Grace Yon (1987), Associate Professor of Reading and Elementary Education and Adjunct Professor of Women’s and Gender Studies Emerita, B.S., Concord College; M.A., West Virginia University; Ed.D., Virginia Polytechnic Institute and State University

Alexander Yushkevich (1990), Professor of Mathematics Emeritus, B.A., Ph.D., Moscow University; D.E., Dzerzhinsky Military Academy

Gerda Anna Maria Zimmermann (1974), Associate Professor of Dance Emerita, Diplom-Gymnastiklehrerin Schule fuer Gymnastiklehrerin; License, Schul fuer Theatertanz; License, School of Fine Arts (Germany)

Richard Allen Zuber (1978), Professor of Economics Emeritus, B.A., Wake Forest University; M.A., Ph.D., University of Kentucky
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Glossary

49ers – The official name for student athletic teams at UNC Charlotte.

49er Card – The ID Card that proves a student is a member of the campus community and entitled to certain services. It is required to check out materials, obtain services, and utilize facilities across campus. It also allows students to access their residence, obtain meals, and make purchases wherever the 49er Account is accepted.

49er Express – One-stop shopping for student services via the Web. It combines various systems, user interfaces, and technical solutions already available to the UNC Charlotte community in a single, consistent web-based interface. Students should use 49er Express to access web-enabled student services, course information, e-mail, and calendar scheduling.

Academic advising – A meeting between a student and an advisor to discuss the student’s academic plan of study, course selections prior to registration, and/or career plans.

Academic calendar – An official list of dates and deadlines found at the beginning of this Catalog and on the website for the Office of the Registrar. The academic calendar specifies the dates for semesters and terms, enrollment periods, examination periods, holidays, periods classes are not in session, and commencement.

Academic discipline – A subject area of study (e.g., English, marketing, psychology).

Academic Petition – A form by which students request to be granted an academic exception because their extenuating circumstances prevent them from following established rules, policies, and procedures.

Academic probation – A status resulting from unsatisfactory academic work; a warning that the student must improve academic performance or be dismissed after a specific period of time.

Academic rank – the rank of a faculty member, such as professor, associate professor, assistant professor, or lecturer. (See individual listings for details.)

Academic record – Official transcript.

Academic standing – The scholastic standing of a student based on his/her grade point average (GPA).

Academic year – The period of formal academic instruction, extending from August through May. It is divided into fall and spring semesters. Students may also take courses during summer sessions.

Accreditation – UNC Charlotte is accredited by the Commission on Colleges of the Southern Association
of Colleges and Schools (SACS). SACS is the recognized regional accrediting body in the eleven U.S. Southern states (Alabama, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Texas and Virginia) and in Latin America for those institutions of higher education that award associate, baccalaureate, master’s or doctoral degrees. Accreditation is certification that an institute of higher education meets a set of criteria established by SACS.

Access – Ensuring equal opportunity for education, particularly for students from historically underrepresented populations and students with disabilities.

Accommodations – Disability Services counselors meet with qualified students to determine and provide reasonable and appropriate accommodations that support the student’s educational goals.

ACT – A test published by American College Testing which measures a student’s aptitude in mathematical and verbal comprehension and problem solving. Many colleges and universities, including UNC Charlotte, require students to take this test and submit their test scores when they apply for admission. While UNC Charlotte accepts the ACT, the SAT is preferred. Most students take the ACT or the SAT during their junior or senior year of high school.

Add/drop – A designated time period at the beginning of each semester when a student may add or drop a course.

Adjunct faculty – Part-time or temporary faculty member. It may also denote a faculty member from another academic department whose research or teaching interests overlap substantially with those of the appointing department.

Admissions counselor – A person working in the Office of Admissions who assists prospective students by providing information and assisting in the preparation of application materials.

Advanced Placement (AP) – Standardized courses administered by The College Board offered high school, the completion of which may result in credit for some of the courses normally required for an undergraduate degree. Awarding of credit based on AP is granted to a student based on prior study or experience (usually indicated by the student’s performance on the AP examination).

Advisor – A department or college-based faculty or staff member who meets with students each semester to discuss curricular choices and progress toward achieving educational goals.

Alma mater – The school from which one has graduated, as in "My alma mater is The University of North Carolina at Charlotte."

Alumna/Alumnus (Alumni) – A female/male (group) who attended or graduated from a particular college or university.

Annotated bibliography – A list of citations of books, articles, and documents followed by a brief descriptive paragraph. The purpose of the annotation or description is to inform the reader of the relevance, accuracy, and quality of the sources cited.

Articulation agreement – A written agreement listing courses at one educational institution that are equivalent to courses at another educational institution. Articulation agreements facilitate the smooth transition of students through the secondary, community college, and university educational systems.

Assessment – The act of evaluation or appraisal.

Assignment – Required reading and course work to be completed outside of the classroom as determined by instructors. Many instructors list assignments on a syllabus, which is distributed at the beginning of the semester. Other instructors give assignments during class.

Assistant Professor – usually the entry-level rank for a faculty member who holds a doctorate, although this depends on the institution and the field.

Associate Professor – the mid-level rank of a faculty member. It usually indicates that the individual has been granted tenure at the institution.

Associate's degree – A degree traditionally awarded by community or junior colleges after two years of study, or completion of 60 to 64 semester hours.

Audit – Enrolling in a course on an audit basis means the course will not count for credit or impact GPA. In some cases, the audit fee is less than the tuition rate. Registration for audit often requires the permission of the instructor.

Auditory learner – Learns through listening; these students learn best through verbal lectures, discussions, talking things through, and listening to what others have to say. Auditory learners interpret the underlying meanings of speech through listening to tone of voice, pitch, speed and other nuances. Written information may have little meaning until it is heard. These learners often benefit from reading text aloud.
B.A. or B.S. – See Bachelor’s degree or baccalaureate.

Bachelor's degree or baccalaureate – The degree of bachelor of arts (B.A.) or bachelor of science (B.S.), typically requiring a minimum of 120 hours of specified course work. A bachelor’s degree is comprised of General Education courses, a major program(s), elective courses, and, in some cases, a minor program(s), and, in general, is completed in four years.

Blue book – A booklet (often with a blue cover, where it derives its name) that contains lined paper for writing essay test answers.

Campus – The area where the main buildings of UNC Charlotte are located.

Cashier – The office (or person) where fees/tuition are paid.

Catalog – A resource of all academic policies and procedures, college and degree requirements, faculty, and course descriptions. UNC Charlotte has both an Undergraduate Catalog and Graduate Catalog.

Catalog year – The year during which the regulations of a specific edition of the catalog apply.

Certificate programs – Programs that offer short-term education and/or training in a wide variety of areas.

CFNC – College Foundation of North Carolina. A comprehensive website used for applying to colleges, exploring career opportunities, and applying for state and federal aid.

Chancellor – The chief administrative officer of UNC Charlotte. At some universities, this position is referred to as president. To date, UNC Charlotte has had four chancellors.

Chancellor's List – The top honors list which recognizes undergraduate students with outstanding records of academic performance (a GPA of 3.8 or greater) and who meet all other criteria. For details, see the Academic Regulations section of this Catalog.

Class standing – This refers to the student’s official year in school - Freshman, Sophomore, Junior, or Senior – and is based on the number of earned semester hours.

Classification – Level of progress toward a degree based on the number of earned semester/credit hours.

Clinical faculty – A part-time teaching position with limited research responsibilities.

College – An academic unit of the University. Each of the seven discipline-based colleges at UNC Charlotte represents an organization of related departments.

Colloquium – A gathering of scholars to discuss a given topic over a period of a few hours to a few days.

Commencement (also known as Graduation) – A formal ceremony in which the University awards degrees to graduating students at the end of each Fall and Spring semester.

Commencement Marshals – At each commencement ceremony, the University honors the juniors with the highest grade point averages by inviting them to serve as the marshals who lead the processions of graduates, faculty members, and the platform party.

Community college – A two-year traditional school, offering programs leading to an Associate’s degree and, typically, many noncredit courses for community members not seeking a degree. Also called junior college.

Concentration – A focus within a major. For example, Public Relations is a concentration of the Communications Studies major.

Contact hours – The number of hours a class meets per week.

Continuing education course – A course outside the regular academic instructional program, for which standard academic fees and tuition are (usually) not charged. While most often these courses do not earn academic credits, they can provide necessary education or experience for professional development, or lead to professional certifications.

Convocation – A gathering of senior administration, faculty, administrative staff, and students to hear statements about the major long-term goals and values of the campus, as well as the major immediate plans and issues confronting UNC Charlotte for the upcoming year, as perceived by the Chancellor, the Provost, and the Faculty President. It is hoped that these presentations will help build a greater shared understanding of the mission of the University and the challenges confronting it. The Convocation is held at the beginning of the academic year.

Core courses – Required courses in a major program.
Corequisite – Specific conditions, requirements, or courses that must be completed while taking another course (i.e., a lab).

Course – A specific subject studied within a limited period of time. Courses may utilize lectures, discussion, laboratory, seminar, workshop, studio, independent study, internship, or other similar teaching formats to facilitate learning.

Course load – Number of credit hours for which a student is enrolled during a semester.

Course number – The four-letter and four-digit identification code that identifies each course taught at the University, such as ENGL 2126.

Course overload – Defined by most colleges as over 18 credits for undergraduates. Approval is required to take an overload.

Course sections – Course numbers may be divided when classes also meet in discussion sections, or when a course number has sections pertaining to different topics under the same heading. For instance, a course called Architecture Topical Studio may have section 001 – Cycloramic Models and section 002 – Building Envelopes.

Course title – The name of a specific course that indicates subject and content. *Introduction to Creative Writing* is the course title of ENGL 2126.

Coursework - A specified amount of work undertaken in a course which leads to its completion; also, the courses taken to attain a degree in a specified program.

Credit – The value assigned to a course. Many courses carry 3 credits and meet for 150 minutes per week.

Credit course – A course with specified learning goals which the student is required to meet in order to receive a grade. The course may be applied toward the fulfillment of degree requirements at the University.

Credit hours – Credit hours, also known as semester hours, are the number of hours the course is allocated. The majority of undergraduate courses have three (3) credit hours, while labs and other courses may have one, two, four, or more credit hours. Attempted, passed, and earned credit hours are reported on transcripts.

Critical thinking – The practice of thinking things through, in which a student must carefully describe something (an event, a book, a person, etc) and evaluate it according to some relevant criterion, considering significant alternatives. Critical thinking is a core component of liberal education and of the general education curriculum.

Cum Laude – Honorary recognition of the success of a graduating student. Translates to “With Honor.” For UNC Charlotte, it requires a cumulative GPA of at least 3.4, but less than 3.8.

Curriculum – A program of courses that meets the requirements for a degree in a particular field of study.

Cum Laude – Honorary recognition of the success of a graduating student. Translates to “With Honor.” For UNC Charlotte, it requires a cumulative GPA of at least 3.4, but less than 3.8.

Dean – The highest authority within an academic division of study. An Academic Dean heads each College. In addition to the academic deans, there is also a Dean of Students within the Division of Student Affairs.

Dean's list – An honors list which recognizes undergraduate students who earn a grade point average of at least 3.4 and not more than 3.79 and meet all other criteria. For details, see the Academic Regulations section of this Catalog.

Deferment – The postponing of a fee or tuition, which will be paid at a later date.

Degree – Diploma or title awarded to a student who completed a prescribed course of study.

Degree program – An organized sequence of courses that leads to the awarding of a college degree at the undergraduate or graduate level. Sometimes referred to as Curriculum.

Degree requirement – A set of requirements, which a student must fulfill before he/she graduates.

Department – A unit within a college representing a discipline. For example, the Department of English is in the College of Liberal Arts and Sciences.

Department chair – The faculty member in charge of an academic department of the university.

Disability – The physical and/or learning challenge -- permanent or temporary -- of a student that may impact their academic plan. Accommodations are provided for students with documented disabilities.

Discipline – An area of study representing a branch of knowledge, such as psychology.

Distance education/learning – Formal learning which occurs when students and instructor are separated by geographic distance or by time. Access to the instructor is gained through communications technology such as the Internet, interactive videoconferencing, TV, and email.

Dissertation – The major research project normally required as part of the work for a doctoral degree.
Dissertations are expected to make a new and creative contribution to the field of study, or to demonstrate one's excellence in the field.

**Doctoral degree** – The most advanced degree, awarded following additional study, often after completion of a master's degree.

**Double major** – Studying simultaneously for two degrees in two majors, fulfilling the course requirements for both majors.

**Drop/add** – A designated time period at the beginning of each semester when a student may add or drop a course.

**Elective** – Course selected at a student’s discretion. The course is not required in the major field of study, but may be used for credit toward a degree. Directed electives are partially restricted (selected from a specified group of courses identified to fulfill a particular requirement). Free electives are selected from any courses for which the student has proper prerequisites.

**Emeritus faculty** – A member of the faculty who has retired but retains the honorary title that corresponds with his/her last held position at the University.

**Equivalency examination** – An examination designed to demonstrate knowledge in a subject where the learning was acquired outside a traditional classroom. For example, a student who learned management skills while working at a restaurant could take an equivalency exam, if offered, to earn credit in small business management.

**Essay** – A method of examination, or homework, by which a student presents his/her knowledge of the subject by writing a composition.

**Experiential learning** – Actively engaging students in a work and/or educational experience where they may make their own discoveries and experiment with knowledge themselves, instead of hearing or reading about the experiences of others.

**Extracurricular activities** – Activities pertinent to student life, but not part of the regular classroom study (e.g., athletics, publications, and social organizations). Also referred to as co-curricular activities.

**Faculty** – The members of the teaching and research body staff of UNC Charlotte. Faculty may hold the rank of professor, associate professor, assistant professor, instructor, lecturer, research associate, research assistant, or the equivalent of any of these academic ranks.

**FAFSA (Free Application for Federal Student Aid)** – A form that all students applying for financial assistance are required to complete in order to determine eligibility for financial aid. This form is available from the Office of Student Financial Aid.

**FAQ** – Frequently Asked Questions. On the Internet and in print, information sources may provide a list of FAQs to assist newcomers in learning more on their own.

**Fees** – An amount of money charged by institutions (in addition to tuition) to cover the costs of certain services (health services, athletic center, student activities, registration, parking, use of lab equipment or computers, etc.).

**FERPA** – The Family Educational Rights and Privacy Act (FERPA) is a Federal law that protects the privacy of student education records. The law applies to all schools that receive funds under an applicable program of the U.S. Department of Education.

**Final exam** – The last, and often the most comprehensive, examination of the entire semester's course material.

**Financial aid/assistance** – Money available from various sources to help students pay for college. Students must establish eligibility. Funds can be competitive.

**Financial aid package** – Total amount of financial aid given to a student. Federal and non-Federal aid such as grants, loans, and work-study are combined to help meet the student's need.

**Financial need** – In the context of student financial aid, financial need is equal to the cost of education (estimated costs for college attendance and basic living expenses) minus the expected family contribution (the amount a student's family is expected to pay, which varies according to the family's financial resources).

**Fraternity** – A social organization, most often for male students, with specific objectives, rules and regulations.

**Full-time student** – A student with a course load of at least 12 credit hours, as defined by eligibility for federal financial aid. However, students need to average a course load of 15 credit hours per semester to graduate within four years.

**Facilitator** – The person in an interactive classroom who assists the instructor or students with distribution of handouts, collection of tests and evaluations, technical and troubleshooting issues, etc.
**General Education Requirements** - These courses provide undergraduate students, regardless of their majors, with the foundations of a *liberal education*. For details, see the General Education Program section of this Catalog.

**GPA (Grade Point Average)** – A system of recording academic achievement based on an average of a student’s grades. The student’s semester GPA is an average of grade points earned during that semester, ranging from 0.0 to 4.0. Cumulative GPA is an average of all grade points earned in a certain degree program or university.

**Grades** – Evaluative scores provided for each course, and often for individual assignments, examinations, or papers written for that course. There are letter grades (usually A, B, C, D, F) and number grades (usually percentages from 0% to 100%, or on a scale of 0.0 to 4.0). Some courses use a pass/no credit system with no grades.

**Graduate studies** – Coursework beyond the bachelor’s degree that leads to a master’s, professional, or doctoral degree.

**Graduation (also known as Commencement)** – A formal ceremony in which the University awards degrees to graduating students at the end of each Fall and Spring semester.

**Graduation with Distinction** – Graduating with honors. To be eligible to graduate with distinction, a student must have a certain grade point average computed on at least 48 semester hours of credit completed in residence at UNC Charlotte. *(See Summa Cum Laude, Magna Cum Laude, and Cum Laude)*

**Grant** – A sum of money given to a student for the purposes of paying at least part of the cost of college. Grants and scholarships do not have to be repaid.

**Hold Flags** – See Registration hold flags.

**Homecoming** – An annual event held by the University to honor alumni.

**Honors** – A special rank or distinction conferred by the university upon a student for excellence in scholarship (based on their GPA). For details, see the Academic Regulations section of this Catalog. When referring to a course of study, an honors course is for academically talented, enthusiastic, and motivated students.

**Incomplete grade** – An "I" (incomplete grade) may be assigned by a faculty member to a student who carried coursework satisfactorily until near the end of the semester, but who was then unable to complete the course, possibly including the final exam. If the student does not remove the "I" within 12 months, the "I" will be changed to "F," "U," or "N," as appropriate. See the Academic Regulations section of this Catalog for complete details.

**Independent study** – A method of receiving credit for study or research independent of the assignments of any specific course, but supervised and graded by a faculty member.

**Interdisciplinary** – A course or program of study involving two or more major areas/departments. For example, Women’s and Gender Studies is an interdisciplinary program offering a minor within the College of Liberal Arts and Sciences.

**Internet course** – A web-based course completed online. Also called an *online course*. May or may not be self-paced.

**Internship** – A work experience, paid or non-paid, that provides students with practical experience, most often in their field of study.

**Intramural/fitness/sport clubs** – Programs designed to encourage students to participate in a variety of competitive, instructional, and recreational organized sports activities.

**Job fair** – Also known as a *career fair* or *career expo*, it provides a place for employers and recruiters to meet with student job seekers, typically for entry-level positions. Fairs usually include company or organization tables or booths where résumés may be collected. Occasionally, it is also where students may perform their first interviews with a prospective employer.

**Kinesthetic learner** – A student who learns best by actually carrying out a physical activity, rather than listening to a lecture or merely watching a demonstration.

**Laboratory (lab)** – A classroom where students apply material in small-group situations that include experiments, assignments, and projects. A lab course typically has an “L” after the course number.
Learning communities – Small groups of new students and faculty who share common interests. Students enroll in two or more of the same courses and, in many cases, live together in the same residence hall.

Learning strategies – Activities that help people use their own learning style to best approach new learning.

Learning style – The way a person takes in, understands, expresses and remembers information; the way a person learns best. See auditory, kinesthetic, and visual learner.

Lecture – A teaching method in which the professor presents information to the students who take notes, ask questions, and have dialogue with the professor.

Liberal Education – The foundation of the baccalaureate degree in the United States. Liberal education strives to make students liberally educated citizens of the world by emphasizing knowledge across disciplines, critical thinking, and application of content. The General Education Requirements work toward this end.

Loan – A type of financial aid that is available to students. An education loan must be repaid. In some cases, payments do not begin until the student finishes school.

Lower division course – A course that is intended for freshman and sophomore level students (typically 1000 and 2000 course numbers) that contains introductory content.

Magna Cum Laude – High honorary recognition of the success of a graduating student. Translates to “With Great Honor.” For UNC Charlotte, it requires a cumulative GPA of at least 3.8, but less than 4.0.

Major – The subject or area of study in which a student concentrates. See the Degree Programs section of this Catalog for a listing of available majors.

M.A./M.S. – See Master’s degree.

Master’s degree – An advanced degree (e.g., Master of Arts [M.A.] or Master of Science [M.S.]) awarded by a university after completion of studies beyond a bachelor’s degree.

Matriculated student – A student who has been accepted for admission to the educational institution, has registered in a curriculum, and is pursuing courses toward a degree or certificate. (See also Non-matriculated student)

Matriculation – The first enrollment following admission as a student.

Mid-term exam – An (often major) examination given in the middle of the semester that tests the student’s knowledge of information taught in the course from the beginning of the course up until the time of examination.

Minor – The secondary field of study requiring fewer credits than the major. See the Degree Programs section of this Catalog for a listing of available minors.

Multiple-choice examination – An examination in which questions are followed by two or more answers, from which a student selects the correct answer.

Niner Nation – The collective UNC Charlotte student body.

Niner Nation Family – The collective parent and family members of UNC Charlotte students.

Noble Niner – The honor code created by the Student Government Association which solidifies the high standard of morals, principles, and integrity that all students should strive to uphold in order to bolster the growing reputation of excellence at UNC Charlotte.

Non-credit course – A class that typically meets less frequently than a credit course and that contributes toward personal or occupational development.

Non-matriculated student – A student who has not yet been accepted for admission to the college, has lost matriculated status by not enrolling in coursework for one semester, or has been suspended from a program because of failure to maintain good academic standing. (see also Matriculated student)

Objective test – An examination in which questions requiring a very short answer are posed. It can be multiple choice, true/false, fill-in-the-blank, etc. The questions are related to facts (thus objective) rather than to opinions (subjective).

Online courses – Courses which are taught and taken either partially or wholly over the Internet.

Open-book examination – A student is permitted to use his/her textbook, and often classroom notes, during the exam.

Oral examination – A student answers questions by speaking rather than by writing.
### GLOSSARY

**Orientation** – An organized gathering, held at the beginning of every semester, which provides useful information to new students to acclimate them with the college campus and student life.

<table>
<thead>
<tr>
<th><strong>Part-time student</strong></th>
<th>A student with a course load of less than 12 credit hours. See also Full-time student.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pass/no credit course</strong></td>
<td>A course that rates a student's performance on a pass/no credit basis, rather than on grades.</td>
</tr>
<tr>
<td><strong>Ph.D.</strong></td>
<td>The highest academic degree awarded by a university to students who have completed studies beyond the bachelor's and/or master's degrees, and who have demonstrated their academic ability in oral and/or written examinations and through original research presented in the form of a dissertation (thesis). Also called a doctoral degree.</td>
</tr>
<tr>
<td><strong>Placement test</strong></td>
<td>An examination used to test a student's academic ability in a certain subject so he/she can be placed in a course at an appropriate level. In some cases, students may get course credits after scoring high on a placement test.</td>
</tr>
<tr>
<td><strong>Plagiarism</strong></td>
<td>Passing off someone else's work as your own or using the intellectual property of someone else without giving proper credit. Students must follow certain guidelines to properly acknowledge the use of other people's ideas or words in their work (unless such information is recognized as common knowledge). This is considered a serious offense at every institution, and is subject to disciplinary action that may include failure in a course and/or dismissal from the University.</td>
</tr>
<tr>
<td><strong>Pop-quiz</strong></td>
<td>A quiz that the instructor has not previously informed the students about.</td>
</tr>
<tr>
<td><strong>Postsecondary education</strong></td>
<td>Refers to all education for students after high school, including programs at community colleges, technical colleges, and four-year colleges and universities.</td>
</tr>
<tr>
<td><strong>Prerequisites</strong></td>
<td>Specific conditions, requirements, or courses that must be completed before enrolling in another course. Course prerequisites (if any) can be found within each course description. For example, Spanish I is a prerequisite for Spanish II.</td>
</tr>
<tr>
<td><strong>Proctor</strong></td>
<td>A person who supervises the taking of an examination to be certain there is no cheating, and that other rules are followed.</td>
</tr>
<tr>
<td><strong>Professional development courses</strong></td>
<td>Courses offered to improve knowledge and skills in specific professional areas, such as professional certification programs. They are usually not offered for academic credit.</td>
</tr>
<tr>
<td><strong>Professor</strong></td>
<td>The highest rank attained by a faculty member. Sometimes also called Full Professor. A small fraction of tenured faculty are awarded the title of Distinguished Professor to recognize outstanding and broad contributions to the advancement of a field of study.</td>
</tr>
<tr>
<td><strong>Provost</strong></td>
<td>Reporting to the Chancellor, the Provost is the chief academic officer who oversees all academic affairs activities, including research and faculty. The Deans of each College report to the Provost.</td>
</tr>
<tr>
<td><strong>Quiz</strong></td>
<td>A short test, written or oral, usually less formal and usually carries less grade weight than an exam.</td>
</tr>
<tr>
<td><strong>Readmission</strong></td>
<td>Approval of the enrollment or admission of a former student.</td>
</tr>
<tr>
<td><strong>Reassignment of Duties</strong></td>
<td>A period of time (usually one semester) when a faculty member is not teaching, but concentrating on his/her own education or research.</td>
</tr>
<tr>
<td><strong>Registrar</strong></td>
<td>The official at the University who is responsible for maintaining student records. The Office of the Registrar plans and oversees registration, academic record maintenance, transcript preparation, graduation, a degree audit report system, and curricular records.</td>
</tr>
<tr>
<td><strong>Registration</strong></td>
<td>Students select courses to enroll in for the subsequent term.</td>
</tr>
<tr>
<td><strong>Registration hold flags</strong></td>
<td>Students may be blocked from registering for courses by “hold flags” that may be placed for various reasons, including College or departmental advising requirements, invalid admissions status, outstanding financial obligations, unreturned equipment or library materials, suspension and disciplinary action, or non-compliance with the North Carolina Immunization Law.</td>
</tr>
<tr>
<td><strong>Required courses</strong></td>
<td>Courses that a student must take in order to complete his/her degree. In many cases, these courses must be passed with a grade of C or above.</td>
</tr>
<tr>
<td><strong>Research paper</strong></td>
<td>A formal written report that includes research findings and a student’s own ideas.</td>
</tr>
</tbody>
</table>
| **ROTC** | Reserve Officers Training Corps program; a scholarship program wherein the military covers the
cost of tuition, fees, and textbooks, and also provides a monthly allowance. Scholarship recipients participate in summer training while in college and fulfill a military service commitment after college.

**SAT – Scholastic Assessment Test I: Reasoning (SAT Reasoning Test)** is a standardized test for college admissions that measures a student's aptitude in math, critical reading, and writing. Many colleges and universities, including UNC Charlotte, require students to take this test and submit their test scores when they apply for admission. UNC Charlotte also accepts the ACT, but the SAT is preferred. Most students take the SAT or the ACT during their junior or senior year of high school.

**Schedule of classes** – A list of available courses for a specific period of study (i.e., Fall semester), including course numbers, hours, locations, and other pertinent information.

**Scholarship** – A sum of money given to a student for the purposes of paying at least part of the cost of college. Scholarships can be awarded to students based on academic achievements, financial need, or on many other factors. Scholarships, like grants, do not have to be repaid.

**Section** – One of several classes of the same course. At UNC Charlotte, a three-digit code is used to identify each section of each course offered. For instance, a course called Architecture Topical Studio may have section 001 – Cycloramic Models and section 002 – Building Envelopes.

**Self-directed learning** – A process in which students take the initiative to diagnose their learning needs, formulate learning goals, identify resources for learning, select and implement learning strategies, and evaluate learning outcomes. The instructor is available as a guide.

**Semester or Term** – A period of study of approximately 16 weeks, usually half of the academic year (i.e., fall and spring semesters). The fall semester begins in August and the spring semester begins in January at UNC Charlotte. There are summer terms as well: one ten-week and two five-week terms.

**Seminar** – Most commonly offered as upper-level and graduate courses, these are small classes of approximately 15 students each, designed to facilitate intensive study of specific subject areas.

**SOAR – Student Orientation, Advising, and Registration.** It is the official UNC Charlotte orientation for new undergraduate students.

**Sorority** – A social organization for female students, with specific objectives, rules and regulations.

**Study abroad** – Visiting other countries for educational purposes, including earning academic credit, learning about different cultures, and developing a deeper understanding of the global marketplace.

**Subjective test** – An examination in which the answers are in the form of narrative sentences, or long or short essays, often expressing opinions (thus subjective) rather than reporting facts (objective).

**Summa Cum Laude** – The highest honorary recognition of the success of a graduating student. Translates to “With Highest Honor.” For UNC Charlotte, it requires a cumulative GPA of 4.0.

**Supplemental Instruction** – Additional assistance for students in historically difficult courses, including accounting, biology, chemistry, communication studies, engineering, mathematics, and physics.

**Surveys** – A method for collecting information to improve the experience for future students. Current students are often asked to complete questionnaires or participate in focus groups to provide feedback on the quality of services and impact of educational programs.

**Syllabus** – A course outline typically provided on the first day of class by the instructor that describes course requirements, topics to be covered, required reading, grading criteria, faculty expectations, deadlines, exam dates, class attendance requirements, and other relevant course information.

**Take-home examination** – An examination that may be completed at home. Since students may use additional resources, these exams are usually more difficult than in-class exams.

**Term or Semester** – A period of study of approximately 16 weeks, usually half of the academic year (i.e., fall and spring semesters). The fall semester begins in August and the spring semester begins in January at UNC Charlotte. There are summer terms as well: one ten-week and two five-week terms.

**Term paper** – A written original work discussing a topic in detail, usually several typed pages in length. Often due at the end of a semester.

**Test** – An examination, or any other procedure that measures the academic abilities of students.

**Track** – A separate route leading to the same degree but with different requirements. Also called a concentration. For example, a student may earn a B.A. in Communication Studies, but have achieved it...
Unsatisfactory grade reports – notifications sent to students in the middle of each semester for courses in which the student is performing below average and a grade has been reported.

Upper-division course – A course that is intended for junior and senior level students (typically 3000 and 4000 course numbers) that contains advanced, and typically more specific, topic content.

Visiting faculty – Faculty members who come to the university from another institution for an appointment of a year or less, sometimes to fill a temporary vacancy.

Visual learner – Learns through seeing; these students prefer to see the instructor’s body language and facial expression to fully understand the content of a lesson. They tend to prefer sitting at the front of the classroom to avoid visual obstructions (e.g., people’s heads). They may think in pictures and learn best from visual displays including – diagrams, illustrated text books, overhead transparencies, videos, flipcharts, and hand-outs. During a lecture or classroom discussion, visual learners often prefer to take detailed notes to absorb the information.

Withdrawal – The procedure in which a student officially removes himself/herself from taking a course, or removes himself/herself from all courses. Tuition may or may not be refunded, depending on the date of withdrawal.

Work-study program – A program that allows students to work part-time during the school year as part of their financial aid package. The jobs are usually on campus and the money earned is used to pay tuition or other college expenses.

through a Health Communication, Mass Media, or Public Relations track.

Transcript – A list of all the courses a student has taken with the grades that the student earned in each course. The University requires a high school transcript when a student applies for admission. Additionally, after earning a college degree, some employers may require a copy of a candidate’s university transcript.

Transferability – The extent to which a course taken from one college or university may be accepted by another. Full or partial transfer of the credit may be available, dependent on factors such as whether the receiving college or university offers an equivalent or similar course at comparable levels of academic expectation for learning. Academic advisors have information about whether and how specific courses will transfer to their institutions and degree programs.

Transfer student – A student who has earned credit in one college or university, and then transfers to another.

Transient study – When credit for courses taken by current UNC Charlotte students at other accredited institutions are transferred to UNC Charlotte, subject to approval. For details, see the Degree Requirements and Academic Regulations section of this Catalog.

True/False examination – An examination in which questions are answered by marking "True" or "False."

Tuition – The amount of money that colleges charge for coursework and other instruction. Tuition can vary widely between educational institutions, and does not cover fees, cost of books, and other materials.

Tuition waiver – A form of financial assistance in which the university may charge little or no tuition.

Tutoring – A method of providing help to students through additional instruction outside of class. Advanced students work with individuals or small groups to increase their understanding of the material.

Undeclared – A student who has not yet declared a major field of study; sometimes referred to as undecided.

Undergraduate studies – A two or four-year program in a college or a university, following high school graduation, which leads to an associate or bachelor’s degree, respectively.
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