Undergraduate Admissions

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What Every Applicant Needs To Know

The Admissions Office represents the point of entry to undergraduate education at the University of Delaware.

When applying for admission, most students designate a major field of study, although students may enter as University Studies (undeclared) major status. Admission requirements vary among majors, and some academic units may require evidence of special skills. Students who apply to the Music Department, for example, will be asked to perform an audition and take a music theory and ear-training placement test. In addition, students who apply to the Art major will be required to submit a portfolio of works with their application. Acceptance to certain programs tends to be competitive because enrollment is limited.

In evaluating student applications, the Admissions Office considers a broad range of criteria, including the depth and rigor of the college preparatory program (and trend in grades); grades earned in specific courses (especially those related to an applicant’s proposed field of study); overall grade-point index; class rank (if available); standardized test scores; student essays; letters of recommendation; and self-appraisal. With Delaware’s increasing selectivity, grades of “B” and above are expected. The self-appraisal allows applicants to explain grades of “C” and below in their academic record. Evidence of special talents and abilities, recommendations from counselors and teachers, leadership qualities, and recognition in extracurricular and community activities also can support a favorable decision. Admission to the University or to a specific major will not be guaranteed on the basis of specific class rank, test scores, or pattern of high-school subjects or performance.

The University seeks a diverse student body, and it strives to provide equal educational opportunities for all students. Under special circumstances, some promising applicants may not meet all the requirements set forth in this document. The Admissions Committee, therefore, pays particular attention to applications from foreign and returning students; students with disabilities; veterans; and individuals whose secondary education, income level or background have prevented them from meeting all admission requirements. Moreover, Delaware residents whose academic credentials do not initially support admission may reapply after successfully completing courses in the Division of Professional and Continuing Studies. (For more information about this option, consult with a member of the Admissions Office.) The University of Delaware reserves the right to refuse enrollment of any applicant. In addition, as it evaluates an application, the Admissions Committee always reserves the right to consider an applicant’s personal conduct and ethical behavior as a factor in its decision.

New students (freshmen and transfers) are admitted into a specific major within one of the undergraduate Colleges, or they may be admitted without a major to the University Studies Program. Students interested in changing their major prior to enrolling should email the Office of Admission at change-major@udel.edu. Some majors have enrollment limits and specific course requirements. The Office of Admission will process the requests and, if appropriate, change the intended major, provided the students meet specific requirements. Once the first semester begins, students interested in changing majors should consult with the appropriate department or college to which they are seeking admission.

The University is eager to provide educational opportunities for older students, who may pursue an undergraduate degree to expand career opportunities or simply to take part in an exciting intellectual environment. In many cases, mature students can complete degree requirements by taking courses in the Division of Professional and Continuing Studies. Qualified Delaware residents who are 60 years of age or older and who have been admitted to a degree program may attend undergraduate or graduate classes on a space-available basis without paying the application, course, registration, or other fees. Such students must cover the cost of books, laboratory supplies, and shop fees.

How Can I Apply?

Prospective students may fill out an online application at www.udel.edu/apply or may request an application by calling the Admissions Office at (302) 831-8123 or sending e-mail to admissions@udel.edu. Students must submit the application (including Secondary School Report and Recommendation Form) along with a check in the amount of $75 by the deadline for their admission category. The following requirements must be met.

1. Applicants to the University must be graduates
of accredited secondary schools or have equivalent credentials.

2. Applicants should graduate in the upper half of their high school classes, preferably in the uppermost percentiles.

3. Applicants are required to submit SAT scores and/or ACT scores (including results of The Writing Test) directly from the appropriate testing agency. For placement and advisement purposes, applicants are encouraged to submit scores on either the SAT Subject Tests or Advanced Placement Tests in their discipline.

4. Applicants should have a firm grasp of the basic academic skills of reading, writing, mathematics, sciences, and foreign languages, as well as a strong commitment to academic achievement and learning. In some cases, the University may consider alternate proof of ability and seriousness of academic purpose. But, the best evidence is a strong high-school record with a wide range of courses, including the following course work taken in the 9th-12th grades. While minimum units are specified below, most of our admitted students take more than the minimum. The academic profiles of the most competitive applicants well exceed the minimum requirements.

   a) Four years of college preparatory English, including courses with extensive writing components.

   b) Three years of college preparatory mathematics. (Four years is recommended. For students in business and economics, engineering, mathematics, physics, computer science, nutritional sciences, and food science, four years of mathematics, including trigonometry, precalculus, or calculus, are strongly recommended.)

   c) Three years of science, including two years of a laboratory science. (For study in the sciences or in related fields such as nursing, nutritional sciences, food science, or engineering, four years of science, including three years of a lab and a physics course, are strongly recommended.)

   d) Four years of social sciences, which must include two years of history, one of which should be world history.

   e) Two years of study in the same foreign language. (Four years of study in the same foreign language is strongly recommended.)

Candidates for the Bachelor of Arts degree and many Bachelor of Science degrees must demonstrate intermediate-level proficiency in a foreign language. This requirement can be met in one of two ways:

1. Completion of the intermediate level course (107 or 112) in a given language.
2. Successful completion of an exemption examination by students who have completed four or more years of high school work in a single foreign language.

f) Two years of academic electives in fields such as English, mathematics, foreign languages, history, and social sciences or science. Academic electives do not include, for example, sports activities or driver education. The University urges high school students to take as many mathematics and foreign language courses as possible, with special attention to the selection of senior-year courses.

   g) All entering students must submit a Personal and Family Medical History Form, verifying proper immunization against measles, mumps and rubella. See www.udel.edu/shs/immun/index.html for current immunization requirements.

We Are Committed to Delawareans

The residents of our home state have always enjoyed a special relationship with the University of Delaware. That is why we offer admission to every Delaware applicant who demonstrates the ability to succeed at the University. In fall 2006, the University of Delaware established the “Commitment to Delawareans,” an academic roadmap showing Delaware residents how they can best prepare themselves for admission to the University of Delaware. Specifically, the University makes this commitment: If a student meets all of the requirements specified in the Commitment, then he or she can be confident of being admitted to the Newark campus of the University of Delaware and will be formally notified of admission on a rolling basis starting January 1 of their senior year of high school. If a student files the Free Application for Federal Student Aid (FAFSA), the University will meet full, demonstrated need up to in-state tuition, fees, a stipend for books, and, if the student is living on campus, room and board with a combination of grants, loans, and/or college work-study. Further, the University will work to ensure that a student's indebtedness upon completion of a four-year course of study is kept to a minimum, with the goal being 25% of the cost of a four-year education at UD. Additional
A special agreement between Delaware Technical & Community College, Delaware State University, and the University of Delaware guarantees transferability of certain courses among the three institutions. For more information, see the online Transfer of Credit Matrix at www.central.dtcc.edu/matrix.

Transfer students are required to complete 90 of the first 100 credits or 30 of the last 36 credits, full or part-time, at the University of Delaware. Work completed elsewhere is not included in the overall scholastic index used to determine eligibility for graduation; candidates for the baccalaureate degree must achieve at least a 2.0 grade point index for work taken at this University.

International Students Enrich Our Community

International students attending the University of Delaware represent over 100 countries. The Office for International Students and Scholars assists these individuals in adapting to their new environment and to the American educational system. (Please see chapter on “Resources for Students.”) English tutoring, orientation seminars, “homes away from home,” educational field trips, and participation in community activities are included in the program for international students.

In addition to the online University of Delaware International Application for Undergraduate Admissions, international students must submit a Summary of Educational Experiences form, Confidental Financial form, and a certified bank statement from their sponsor showing enough funds to cover their educational expenses. These forms may be found online at www.udel.edu/apply.

Also, non-native speakers of English are required to demonstrate proficiency in English by submitting the results of the Test of English as a Foreign Language (TOEFL) or official International English Language Testing Systems (IELTS) report. International students who need to improve their English skills but meet the University’s academic requirements may be admitted through the Conditional Admissions Program. These students must complete the University’s English Language Institute Level VI English for Academic Purposes program with grades of “B” or better before beginning regular university courses. Under federal law, the University is permitted to enroll nonimmigrant foreign students.
Meet The Challenge Of The Honors Program

Students apply to the University Honors Program by completing the Honors section of the Application for Undergraduate Admission. (Read more about this program in the “Opportunities to Enrich Your Undergraduate Education” chapter.) Honors students may select any academic major on campus. Although there are no rigid test-score or grade-point cutoffs, certain levels of achievement are typical of Honors students. Most Honors freshmen are in the top 5 percent of their high school graduating class, and nearly all are in the top 10 percent. The program enrolls fewer than 500 freshmen each year. Last year, the middle 50 percent of students admitted to Honors had high-school grade-point averages between 3.80 and 4.00 (on a 4-point scale), and Scholastic Aptitude Test scores between 2000 and 2150. The Honors Program welcomes applications from freshman- and sophomore-level transfer students.

For more information, call (302) 831-1195 or visit www.udel.edu/ honors.

Apply On Time!

For September (fall semester) admission, all application materials should be sent to the Admissions Office by the deadline specified in the current undergraduate admissions application; to be assured full consideration for all programs and scholarships, all materials should be received by December 1. For February (spring semester) admission, all application materials should be sent to the Admissions Office by November 1.

High School Work May Equal College Credit

The University recognizes competencies attained through its courses, through courses completed in secondary school, and through independent study. Students may earn Advanced Placement (A.P.) or International Baccalaureate (I.B.) test credit by sending their official score report to the Office of Admissions. For more information regarding possible test credit, contact the Admissions Office or go online to http://admissions.udel.edu/apply/ap-ib.

Alternatively, credit based on examination results may be offered for some curricular areas. (See the “Earn Credit by Examination” section in the “Undergraduate Academic Regulations” chapter.)

Enter Delaware At The Time That’s Right For You

Admission or readmission to the University is granted for a specific semester, fall or spring. All offers of admission or readmission are contingent upon maintaining a satisfactory academic performance and a positive personal record. The University may cancel the acceptance of any student who fails to matriculate in the specified semester and/or who fails to successfully complete all coursework in progress. Any requests for deferred admission should be submitted in writing to the Admissions Office. The student’s credentials are reevaluated in such cases, and the request may be granted, depending on the availability of space. In no circumstance will the Admissions Office return applications and supporting materials once they are submitted for consideration.

Academic Renewal May Allow You To Start Over

When a student leaves the University and later applies for admission or readmission, he or she may wish to enter with a “clean slate.” Students who return to the University after a separation of at least five calendar years are eligible for academic renewal if they earn a “C” or better in each course for 12 semester hours after returning to the University. In such cases, grades from previously taken courses are not included in the calculation of the GPA.

The following regulations govern this option:

1. Students must consult with the dean of the college in which the student plans to major, and course selection must be approved in writing before the student registers.

2. The request for academic renewal will be processed after successfully completing 12 credit hours worth of course work.

3. All courses and grades will remain on the student’s transcript and will be identified.

4. Credits completed prior to readmission with a grade of “C-” or better may be counted toward the degree.

5. A minimum of thirty additional credits applicable toward the degree must be earned following the Academic Renewal. These thirty credits may include the 12 credits required under #2 above.

6. Academic renewal can be granted only once during the student’s enrollment at the University.
degree, while the Associate in Science degree requires a minimum of 60 to 62 credits. For part-time students, an associate degree can be a valuable intermediate goal, bridging the period between matriculation and the completion of a four-year baccalaureate degree. In some cases, it may be possible for students who hold jobs during the day to earn an associate degree by attending evening classes on a part-time basis. In addition, the entire Associate in Arts curriculum is available as a distance learning option for students who are outside Delaware.

The Associate in Arts Program is designed for students we believe would benefit from additional support, including small classes, individualized attention, and a structured curriculum before relocating to the Newark campus. As a non-residential program, tuition is reduced and students may also qualify for the State of Delaware SEED Scholarship Program. The lower tuition and the eligibility for a SEED scholarship apply only to UD students who enroll in the Associate in Arts Program. Therefore, students who take advantage of the lower tuition or a SEED scholarship should realize that they must be willing to spend two full years in the program and complete the Associate Degree before being permitted to enroll on the Newark campus.

Additional fees and tuition may be applicable for the online Associate in Arts degree, depending upon the student's state of residence.

Admission Requirements. Admission requirements for associate degrees are similar to the corresponding baccalaureate degree requirements. Prospective students must demonstrate scholastic aptitude, motivation for academic attainment, and adequate preparation for the degree curriculum. Successful completion of appropriate Professional and Continuing Studies courses may satisfy these requirements in some cases.

Credits from another institution may be transferred. To be eligible for an associate degree, however, the student must complete more than half the required credits at the University of Delaware. Professional and Continuing Studies students who have not yet been formally admitted to a degree program are encouraged to apply at the earliest possible date, and no later than earning 75 credits. (To receive an associate degree, Professional and Continuing Studies students must earn at least 12 credits after formal admission to the University.)
Students who have been admitted directly to a bachelor degree program may qualify to earn an associate degree en route to their bachelor degree; application for the associate degree must be made prior to earning 75 credits.

Degree Requirements. Specific degree requirements are listed in the Arts and Sciences, Agriculture and Natural Resources, or Education and Human Development undergraduate program chapters in this catalog. A minimum grade-point index of 2.0 is required for all associate degrees.

General Information. For more information about associate degrees and admission requirements, or for catalogs and needed forms, call the Office of Admissions (302 831-8125), the Division of Professional and Continuing Studies ACCESS Centers (302 831-2741), the College of Agriculture and Natural Resources (302 831-2508), or the College of Arts and Sciences Undergraduate Academic Services office (302 831-3020). Educational counseling and academic advisement are available in Wilmington, Newark, Dover and Georgetown.

Students should also consult the Associate in Arts website www.udel.edu/associateinarts.

Enjoy Flexibility With Interinstitutional Degree Programs

The University of Delaware, in cooperation with Delaware Technical & Community College, offers opportunities to continue toward a baccalaureate degree to students who complete associate degrees in specific technologies. Students in some majors may complete degree requirements by taking courses at University facilities in southern Delaware. It may be possible for part-time students to complete course work during the late afternoon and evening.

For information on the curriculum in associate/bachelor’s Connected Degree Programs currently available to graduates of Delaware Technical & Community College, please consult the contacts listed below.

Biology/Biotechnology  
Professor David Usher - 831-6685

Chemistry  
Dr. John Burmeister - 831-1130

Criminal Justice  
Professor Eric Rise - 831-8679

Early Childhood Education  
Department of Human Development and Family Studies, 831-6500

Electrical Engineering  
Professor Charles Boncelet - 831-8008

Engineering Technology  
Professor William Ritter - 831-2468

Food and Agribusiness Management  
Professor Steven Hastings - 831-1318

Health Behavior Science: Fitness Management  
Professor Elizabeth Orsega-Smith - 831-6681

Human Services  
Department of Human Development and Family Studies, 831-6500

Mathematical Sciences B.A. or B.S.  
Professor David Edwards - 831-1871

Mathematics Secondary Education  
Professor Jinfa Cai - 831-1879

Medical Technology  
Professor Anna Ciulla - 831-2849

Nursing  
Professor Karen Avino - 831-8506

All telephone numbers are in area code (302).

Admission. To be eligible for the interinstitutional baccalaureate program, students must earn an associate degree or the equivalent in an appropriate technology from Delaware Technical & Community College. In most cases, associate-degree course work completed with a grade of “C” or better can be transferred to the University. The balance of the bachelor’s degree requirements must be satisfied by completing University courses.
Opportunities to Enrich Your Undergraduate Education

Meet The Challenge Of Enriched Degree Options

The Honors Degree with Distinction, the Honors Degree, the Degree with Distinction and the Dean's Scholars Programs allow exceptionally talented and dedicated undergraduate students to pursue their academic interests in greater depth and breadth than is required for the regular bachelor’s degree. Achievement of the Honors Degree, Honors Degree with Distinction, and Degree with Distinction is recorded on the official transcript and diploma. Honors Degree and Honors Degree with Distinction

The Honors Degree and the Honors Degree with Distinction are Delaware’s most comprehensive enriched undergraduate degree experiences, and are currently available in more than 100 majors (please see the Synopsis of Honors Baccalaureate Degrees chart). The Honors Degree recognizes a student’s excellent performance in Honors coursework in and outside the primary major. The Honors Degree with Distinction recognizes a student’s completion of the research requirements for the Degree with Distinction in addition to the successful pursuit of Honors coursework throughout the degree program.

The complete requirements for an Honors Baccalaureate Degree are as follows:

I. The requirements for the baccalaureate degree in the major (including all University and college requirements), as well as any other specific requirements the major department may set for the Honors Degree.

II. The general requirements for the Honors Degree:

University of Delaware cumulative grade-point index of no less than a 3.400 at the time of graduation.

At least 30 credits earned in Honors courses. Of these Honors credits:

At least 12 must be in the major department or in closely related courses in collateral disciplines specifically required for the major.

At least 12 must be taken at the 300 level or higher, not including the first-year interdisciplinary Honors colloquium (which is usually numbered 390).

Three credits must be in an Honors Degree seminar or Honors capstone course experience approved by the student’s major department and the University Honors Program, to be completed in the last 2 semesters of a student’s degree program.

Plus additional Honors credits as needed to reach the 30 required Honors credits.

III. Submission of the Honors Degree Application Form to the University Honors Program by May 15 the year before a student is planning to graduate.

A minimum grade of C- is required in Honors courses counting toward the Honors Degree. Honors coursework taken pass-fail cannot count for the Honors Degree unless the course is only offered pass-fail.

The complete requirements for an Honors Baccalaureate Degree with Distinction are as follows:

I. The complete requirements for the Honors Baccalaureate Degree (see above).

II. Six credits of Honors thesis or project (UNIV 401/UNIV 402) and the successful oral presentation of an acceptable thesis or project to a committee of faculty approved by the major department, the Honors Program, and the Undergraduate Research Program.

Six credits of Honors thesis may be counted as part of the 30 Honors credits required for the Honors Degree.

Completion of any additional specifications for the thesis or project set by the major department.

A minimum grade of C- is required in Honors courses counting toward the Honors Degree with Distinction. Honors coursework taken pass-fail cannot count for the Honors Degree with Distinction unless the course is only offered pass-fail.

Degrees With Distinction

A Degree with Distinction, which may be earned in any undergraduate major, is a research degree. Like the Honors Degree with Distinction, it includes a senior thesis or creative project with an oral defense before a faculty committee. Students receive a bachelor’s degree in the appropriate college and major with the notation that it was earned “with distinction.”

Candidates for the Degree with Distinction must meet the following conditions:

At the time of graduation, the candidate’s cumulative grade-point index must be at least
The candidate must complete, for a total of six credits, a thesis or project (UNIV 401 and UNIV 402) and give an oral presentation and defense of the thesis or project to a committee of faculty from the major department and related fields.

The Degree with Distinction entails no change in the regular requirements of a student’s program other than preparation and defense of a senior thesis or creative project.

Dean's Scholars Programs

The Dean's Scholar Program exists to serve the needs of students whose clearly defined educational goals cannot effectively be achieved by pursuing the standard curricula for all existing majors, minors, and interdepartmental majors sponsored by the University. Driven by an overarching passion or curiosity that transcends typical disciplinary bounds and curricula, a Dean's Scholar's intellectual interests may lead to broad interdisciplinary explorations of an issue or to more intense, in-depth studies in a single field at a level akin to graduate work. In consultation with faculty advisors and the Associate or Assistant Dean of their college, Dean's Scholars design an imaginative and rigorous individual plan of study to meet the total credit hours required for graduation.

The Dean's Scholar Program is available in the Colleges of Agriculture & Natural Resources; Arts & Sciences; Business & Economics; Earth, Ocean, & Environmment; Engineering; Health Sciences; and Education & Human Development. Working in conjunction with the Honors Program, Dean's Scholars in Agriculture & Natural Resources; Arts & Sciences; Health Sciences; and Education & Human Development may qualify for Honors Degrees. More information and the application procedures can be found at www.udel.edu/deansscholar/.

The Honors Experience: More Than A Degree Program

The University of Delaware Honors Program (UDHP) serves the many exceptionally talented undergraduate students who choose the University of Delaware. Eligible undergraduates study in smaller classes, where they receive special guidance from faculty members. Academic options for these students include a variety of Honors courses, undergraduate research, private music study, the Honors Foreign Language Certificate, the General Honors Award, four-year Honors Degrees in many majors, and the Degree with Distinction in all majors. (See the Degree Options section.) Extensive extracurricular programming occurs in the Honors residence halls.

Honors Program students may pursue a course of study in any of the University's undergraduate majors. Honors degrees are available in over 100 majors. For students who apply to enter the program during their first semester, Honors activities during the freshman year provide the educational foundation to conduct advanced study in any field. The freshman year also draws students into the campus community, promoting faculty-student interaction and shared interests among participants. Full-time Honors freshmen enroll in 12-15 credits of Honors courses, including an Honors ENGL110 course and an Honors Colloquium, during their first year. Honors freshmen establish a close relationship with faculty advisors that continues throughout their academic careers.

There is no added fee for participation in the Honors Program.

The University Honors Program has offices in 186 South College Avenue. Please call (302) 831-1195 or visit www.udel.edu/honors/ for more information.

Honors Courses

Honors courses are offered each semester, in a wide array of disciplines. Honors courses provide highly motivated students an opportunity to interact intensively with faculty and other students in active-learning courses. These range from one-credit short courses and tutorials to interdisciplinary colloquia, undergraduate research, and independent study.

Honors Colloquia. Each of these 3-credit interdisciplinary seminars for first-year Honors Program students is served by a Writing Fellow - a specially trained peer tutor who helps students refine the form, but not the content, of their papers, prior to grading by the instructor. Recent colloquia topics have included “Choosing the President,” “The Lessons of Vietnam,” “Imagination, Creativity, and Expression,” and “Shakespeare's Classical World.”

Honors ENGL110 sections. These specially designed freshman composition courses allow Honors first-year students to explore a variety of topics while improving their writing skills and fulfilling this University requirement.

Honors Tutorials. With a maximum of six to eight students and one faculty member, a tutorial meets weekly for careful study of classic literary and philosophic texts. These courses satisfy the
senior capstone requirement for the Honors Degrees.

Honors Degree Seminars. These upper-division interdisciplinary seminars satisfy the senior capstone requirement for the Honors Degrees.

Study Abroad. Honors courses may be arranged as part of the University's numerous and varied Semester Abroad and Winter and Summer Session Abroad programs. Students also may complete research abroad through the Science and Engineering exchange with Imperial College, London. Foreign Study Scholarships, open to all students, are available to defray travel expenses for every University-sponsored program. For scholarship information, contact the Institute for Global Studies, (302) 831-2852; http://international.udel.edu/studyabroad/default.asp.

Full-time matriculated undergraduate students not in the Honors Program are eligible to take Honors courses provided they have completed a minimum of 12 credits at the University and have a University of Delaware cumulative GPA of 3.00 or higher. Priority seating in Honors courses is always given to eligible Honors Program students. Students not in the Honors Program who meet the necessary criteria may contact the Honors Program office prior to the start of the semester to request Honors courses if seats are available.

Any University student who has a minimum 3.40 GPA and has taken two Honors courses and received a grade of B or better may apply for formal admission to the Honors Program. To be reviewed, a student must present a transcript, two letters of recommendation from Honors program faculty, and a completed application form (available at www.udel.edu/honors/ or in the Honors Program Office). Applications are reviewed twice a year (October 15 and March 15); an appeal of the committee's decision may be made to the Director of the Honors Program, who is not a member of the committee itself, and whose decision is final.

Students admitted to the Honors Program must maintain a GPA of 3.00 in the first year to take Honors courses and remain in the Honors Program. First semester freshmen who fall below a 3.00 will be placed on probation and will be notified about their probationary status. They will not be allowed to take honors courses while their GPAs remain below 3.00. If their GPAs remain below 3.00 at the end of their first year, they will be contacted and removed from the Honors Program.

After the second year and in subsequent years, Honors Program students must maintain a minimum of a 3.20 overall GPA. All Honors Program students will be reviewed yearly. Any Honors students falling below a 3.20 GPA at the end of any year of study will be contacted and removed from the Honors Program.

A student who is removed from the Honors Program will be eligible to take Honors courses again once the student's overall GPA improves to a 3.00 or higher. Former Honors Program students wishing to reapply to the program may do so after their overall GPAs improve to a 3.40 or higher. For information on readmission to Honors, see the Honors Program web site www.udel.edu/honors/.

The General Honors Award provides recognition of a student's pursuit of Honors challenges and enrichment opportunities during the first two years of university study. Receipt of the General Honors Award is recorded on a student's permanent transcript.

The complete requirements for the General Honors Award are as follows:

Eighteen credits of Honors coursework completed within the first two years of study, with a minimum of 12 credits required in the first year.

Three credits of the 12 credits completed in the first year must include an interdisciplinary Honors colloquium course.

Three credits of the 12 credits completed in the first year must include an Honors ENGL110 course.

A minimum GPA of at least 3.200 at the conclusion of the first two years of study at the University.

A minimum of 60 credits (including advanced placement and transfer credits) must be completed by the end of the second year, at least 54 of which must be earned at UD.

Residence in first-year Honors housing is required during the first year of study.

A minimum grade of C- is required in all Honors courses counting toward the General Honors Award. 8. Honors coursework counting toward the General Honors Award cannot be taken on a pass-fail basis unless the course is only offered pass-fail.

The Honors Foreign Language Certificate

The Honors Foreign Language Certificate is available to students in majors other than
Belonging to a diverse student body is an important part of the Honors Program experience at UD. Undergraduate research, study abroad, unique Honors course offerings, and the many Honors extracurricular activities allow Honors students to pursue their own particular enthusiasms.

Private Music Instruction is yet another way of fostering individual talent. Typically, an unusually large percentage of Honors-calibre students are also accomplished musicians. Most of these students do not intend to major in music or to pursue a musical career. Nevertheless, they are quite serious about their music study. The Private Music Instruction option is designed to assist them.

Freshmen who are in the Honors Program may receive individual music instruction by passing an audition conducted by the Music Department. (Auditions are held at the start of fall semester; information on registering for them is provided in Delaworld 101 new student orientation.) Please bear in mind that this program assumes that a student is already proficient in his or her instrument: it is not a program for beginners and placement is highly competitive. This option is designed for non-Music majors and minors. Typically eligible students take private music instruction in the fall semester of the first year. Continuation into the spring semester of the first year may be possible but is not guaranteed. After the freshman year a limited number of Music Merit Awards may be available through the Music Department to allow non-Music majors and minors the ability to continue their music instruction.

The Department of Music offers instruction in string instruments, brass and woodwinds, keyboard instruments, percussion, and voice. There are also extensive opportunities for all students to participate in music ensembles.

For more information, please telephone the Music Department, (302) 831-2577 or the Honors Program, (302) 831-1195. Life In Honors Residence Halls

Full-time Honors freshmen live in the Russell Residence Complex, situated in East Campus, a popular location that is a short walk from the University’s Morris Library. East Campus is also home to the Perkins Student Center, the Harrington Fitness Center, and the Harrington Computer Site (which includes both IBM-compatible and Macintosh computers). Russell has its own dining hall. Living in the Russell
and globally integrated world in which they will live and work; and to offer students the opportunity to expand their own horizons, areas of interest and intellectual development.

The 10 Goals to Success are found at http://www.ugs.udel.edu/gened/

First Year Experience (FYE)

The First Year Experience is the first step in an exciting educational journey that helps students find their place at the University of Delaware and build strong social and academic foundations. All first year students (including University Honors Program) at the University are required to participate in a First Year Seminar. The First Year Seminar assists students in adjusting to college life and provides a unique learning experience. Students have the opportunity to explore the University of Delaware and learn about those things that are vital to their success. Students are housed in residence halls across campus according to their First Year seminar. For more information see: www.udel.edu/fye

FIRST YEAR EXPERIENCE STUDY ABROAD

FYE study abroad programs are organized for only first year students. FYE study abroad programs occur during Winter Session. Past programs have been in London, England; Costa Rica; Grenada, Spain; Merida, Mexico; and Sydney, Australia.

Discovery Learning Experience (DLE)

Discovery learning takes place when students use their knowledge and skills acquired through traditional classroom experiences to discover, for themselves, effective actions, alternatives and solutions to situations and/or problems that occur in “real-life” contexts; that is, contexts that are unpredictable, where problems and situations are complex and lack clear definitions. These contexts are primarily outside of the classroom and include internships, service learning, independent study, undergraduate research, and study abroad. However, they may also occur within a classroom experience.

All undergraduate students are required to engage in three credits of Discovery Learning Experiences (DLE), under the supervision of a faculty member. As a result of the Discovery Learning Experience, all students should be able to: 1) apply critical thinking skills to develop effective responses to, and make informed decisions about, problems or situations...
UD's Unique Undergraduate Research Opportunities

Ronald E. McNair Post Baccalaureate Achievement Program

A research-based program designed especially for students seeking to place their research experience in the context of future graduate study, the Ronald E. McNair Post Baccalaureate Achievement Program promotes academic and personal excellence among undergraduate students interested in attaining a doctoral degree. Funded by the U.S. Department of Education, the McNair Program recruits talented, eligible undergraduates from all colleges at the University of Delaware. McNair Scholars are a community who value intellectual exchange and debate and the development of the life of the mind. Twenty-two McNair Scholars are funded each year.

Focusing on graduate school preparation, the McNair Program demystifies the graduate school application process and provides students with a simulated graduate school experience. The program offers a scholarly environment whereby students receive academic, financial, and social support, as well as competitive stipends; one-on-one faculty mentoring; academic and financial aid advising; an intensive undergraduate summer research internship; graduate school preparation seminars; GRE preparation courses; research methodologies, statistics, and ethics course(s); a graduate school visitation program; cultural and social programs; a national McNair networking program; and graduate school application & GRE fee waivers.

Visit the program website at: http://www.udel.edu/mcnair or call (302) 831-4396 for a complete listing of eligibility requirements and a full overview of program services.

University Undergraduate Scholars

The University Undergraduate Scholars Program aims to prepare talented students for graduate study through an intensive undergraduate research experience, academic enrichment, and a diverse living/learning community. University Undergraduate Scholars are eligible for a combination of services from the Undergraduate Research Program and the Ronald E. McNair Post Baccalaureate Achievement Program.

Five to ten University Undergraduate Scholars are funded each year to participate in a ten-week summer immersion undergraduate research experience with a faculty member in the field.
they hope to enter. These Scholars participate fully in McNair community-building experiences such as weekly group dinners, reading groups, and other social/cultural events. They meet the same obligations as the federally funded McNair Scholars, participate in McNair’s full academic enrichment program, including participation in a graduate school seminar series, take part in graduate school visitations, present their research-in-progress at national McNair and/or Undergraduate Research conferences, and are given the opportunity to present their research in UD symposia and poster sessions. Scholars receive full individual advisement from McNair program staff, including advisement about graduate programs most appropriate to their interests and abilities, as well as individual review and critique of their graduate school application materials.

Undergraduate Research Program

Delaware’s unique Undergraduate Research Program encourages highly motivated undergraduates, beginning with the freshman level, to serve as junior members of research teams and work with faculty mentors. Through hands-on experience, students learn to formulate significant questions, develop investigative procedures, gather and examine evidence, make mistakes, follow hunches, detect loopholes, and evaluate and report results.

Undergraduates usually receive academic credit for research activities; students who hold college work-study grants may earn their grant money. In the summer, a salary or stipend is often possible. Students explore career options through undergraduate research, and many make original contributions to knowledge in their chosen fields.

The University’s Undergraduate Research Program assists undergraduates interested in research by serving as a central information and referral source. The Program also administers the Degree with Distinction and the senior thesis portion of the Honors Degree with Distinction requirements, and it offers research funding in the form of Undergraduate Research Grants (to defray the research expenses of students and their faculty sponsors) and Scholarships (to enable selected students to engage in research full time during the summer).

Each year, the Undergraduate Research Program sponsors a Senior Thesis Symposium at which candidates for Distinction and Degree with Distinction present their research findings. Science, Engineering and College of Education and Public Policy Scholars present several annual poster sessions, and McNair, UUS, Arts, Humanities, and Social Science Scholars present their work at annual research events.

For more information about the Undergraduate Research Program, visit http://urp.udel.edu/

Science And Engineering Scholars

The Science and Engineering Scholars Program combines the resources of the University's science and engineering colleges and research centers, the Undergraduate Research Program, and industrial sponsors to offer selected students in-depth research apprenticeships in all areas of science and engineering. Participating colleges are Engineering, Arts and Sciences, Agriculture and Natural Resources, Health Sciences, and Marine and Earth Studies.

Up to 80 research scholarships of $3,500 each are awarded to outstanding sophomore majors in the sciences and engineering. Students serve a 10-week full-time research apprenticeship to a faculty member during the summer between the sophomore and junior years. They continue as research assistants during the junior year, often in the Winter Session. Research during the academic year may be counted in most departments as one technical elective course or one elective course in the major.

Life Science Scholars

Funding undergraduate research in all areas of the life sciences, the Life Science Scholars Program annually provides about 20 summer stipends of $3,500 each to students for the summer after their junior year. Outstanding first-year students may also apply. Each summer, the faculty directors of the University’s Howard Hughes Medical Institute grant sponsor weekly enrichment seminars and a summer Undergraduate Research Symposium for all undergraduates conducting research in the sciences.

Arts, Humanities And Social Science Scholars

The Arts, Humanities and Social Science Scholars Program enables selected sophomore and junior majors in the humanities and social science disciplines and in art to do in-depth research or creative work with University faculty. Up to 45 research scholarships of $3,500 each are awarded. Students work on their projects full-time for ten weeks in the summer and continue to do three credits of research in the following academic year. The research done during the academic year may be part of the senior thesis for the Degree with Distinction or Honors Degree with Distinction.

College of Education and Human Development Scholars
The College of Education and Human Development offers up to five $3,500 awards to sophomore and junior majors in the College, enabling them to do in-depth research with faculty in the College. Students work on their projects full time for ten weeks in the summer and continue to do three credits of research in the following academic year. The research done during the academic year may be part of the senior thesis for the Degree with Distinction or Honors Degree with Distinction.

Summer Undergraduate Research Fellowships

About 35 fellowships of varying amounts provide partial support for undergraduate researchers in all fields who would like to devote a substantial amount of time to work on their projects during the summer. This fellowship is especially appropriate for students who wish to take a summer class and/or hold a job or internship for part of a summer in addition to doing research.

Research Centers

Students interested in research should be aware that the University serves as home to a number of specialized research units described in the “Research Centers, Institutes, and Special Facilities” section. Many of these units offer internship opportunities for undergraduate students.

Global Studies Opportunities

Interested in spending a semester abroad? Fall semester locations include London, Paris, Salzburg, Buenos Aires (Argentina), and Granada (Spain); spring semester locations include Puebla (Mexico), London, Rome, and Granada. Semester programs are directed by an on-site coordinator, and courses are taught by local faculty. Except for foreign language courses and programs, courses are taught in English, and students earn regular UD academic credit applicable toward graduation and fulfilling academic requirements as specified. OR you can choose a short study program in winter or summer. These sessions are lead by UD faculty for 4-5 weeks in many locations across the globe in many different areas of study.

Societies Honor Our Best Students

Phi Beta Kappa. Established in 1776, Phi Beta Kappa is the oldest honorary society on the American campus. A local chapter, Alpha of Delaware, was approved by the United Chapters of Phi Beta Kappa in September 1955 and was installed in April 1956. Generally, seniors majoring in the liberal arts and demonstrating superior scholarship are eligible for election.

Alpha Lambda Delta. Alpha Lambda Delta recognizes excellent scholarship in any academic field during the freshman year.

Phi Kappa Phi. Juniors and seniors ranking high in scholarship in any academic field are elected each year to this society. Two members of the faculty are also elected each year. Founded in 1897, Phi Kappa Phi is the national honor society that elects undergraduate and graduate students who have accomplished excellent scholarship in any academic field. The fifth chapter of the society was chartered at the University of Delaware in 1905. There are now over 285 chapters nationwide. For information, call the Undergraduate Research Program Office, (302) 831-3188.

Societies that recognize attainment in special academic fields are Alpha Kappa Delta (sociology), Alpha Mu Alpha (marketing), Alpha Zeta (agriculture), Beta Beta Beta (biology), Beta Gamma Sigma (business administration), Chi Epsilon (civil engineering), Delta Phi Alpha (German), Dobro Slovo (Slavic), Eta Kappa Nu (electrical engineering), FMA Honor Society (finance and banking), Gamma Kappa Alpha (Italian), Golden Key (no single field), Kappa Delta Pi (education), Lambda Pi Eta (communication), Mu Iota Sigma (management information systems), Omicron Delta Epsilon (economics), Order of Omega (Greek honorary), Phi Alpha Theta (history), Phi Delta Kappa (education), Phi Sigma Tau (philosophy), Pi Delta Phi (French), Pi Mu Epsilon (mathematics), Pi Sigma Alpha (political science), Pi Tau Sigma (mechanical engineering), Psi Chi (psychology), Sigma Delta Pi (Spanish), Sigma Iota Rho (International relations), Sigma Tau Delta (English), Sigma Theta Tau (nursing), Sigma Xi (science) and Tau Beta Pi (engineering). Information may be obtained by calling the relevant academic department offices.
College of Agriculture and Natural Resources

In the College of Agriculture and Natural Resources, business, education, science and technology are used to solve problems related to environmental protection; food and fiber production; and animal and plant health. Comprising nearly 25% of the nation’s workforce, agriculture and natural resources provide career opportunities in research, industry, education and government.

The curricula provide a flexible program of study designed to educate students on the rapid changes and improvements in agriculture and natural resources. Frequent consultation with faculty advisors helps students progress toward achieving their educational goals. College faculty encourage and support students to pursue Degrees with Distinction, to take courses in the University Honors Program, and to participate in the Science and Engineering Scholars summer research program.

Undergraduate majors are offered in agriculture and natural resources, agricultural education, animal and food sciences, ecology, engineering technology, entomology, environmental soil science, food and agribusiness marketing and management, food science, landscape horticulture and design, natural resource management, plant protection, plant science, pre-veterinary medicine and animal biosciences, resource economics, statistics, and wildlife conservation.

Taking Courses Pass/Fail

Courses that a student chooses to take under the pass/fail option cannot be used to complete major or group requirements in the College of Agriculture and Natural Resources. Pass/fail option courses can be counted only as free electives.

Dean’s Scholar Program

The Dean’s Scholar Program serves students whose clearly defined educational goals cannot be effectively achieved by pursuing the standard curricula for all existing majors, minors, and interdepartmental majors sponsored by the University. Driven by an overarching passion or curiosity that transcends typical disciplinary bounds and curricula, a Dean’s Scholar’s intellectual interests may lead to broad interdisciplinary explorations of an issue or to more intense, in-depth studies in a single field at a level akin to graduate work. In consultation with faculty advisors and the Assistant Dean of their college, Dean’s Scholars design an imaginative and rigorous individual plan of study to meet the total credit hours required for graduation. Dean’s Scholars in Agriculture and Natural Resources may qualify for Honors Degrees. Contact the Assistant Dean in the college or go to www.udel.edu/deansscholar/ for more information and the application.

Bachelor of Science Core Curriculum

College of Agriculture and Natural Resources

For all majors except Engineering Technology, the following core curriculum must be met in addition to the Major and Concentration requirements listed in the catalog. Exceptions or additions to the core curriculum for a specific major are noted in the department sections. Students should consult with their advisor(s) as to whether a course can count for multiple requirements (major, college, university). If a course is used to fulfill two or more requirements, credits are counted only once toward the total credits for graduation.

UNIVERSITY REQUIREMENTS
ENGL 110 Critical Reading and Writing (minimum grade of C-) 3
First Year Experience (FYE) 0-1
Breadth Requirements 12
Discovery Learning Experience (DLE) 3
Multi-cultural Course 3

COLLEGE BREADTH REQUIREMENTS
Agricultural and Natural Resources 9
A minimum of nine credits from any three different subject area codes, outside the subject area codes of the student’s major, offered by the Departments in the College of Agriculture and Natural Resources. The exceptions would be any course that states in the course description that it cannot be used to satisfy the College breadth requirements, special problems, research, internships, first year experience, seminars and similar courses.

Physical Science 8
Minimum of 8 credits from CHEM, GEOL, PHYS, or SCEN. See major for specific requirement.
For the undergraduate with broad interests, the major in agriculture and natural resources is offered. The program is administered through the Office of the Academic Programs and Student Services in the College of Agriculture and Natural Resources in 104 Townsend Hall.

BACHELOR OF SCIENCE- AGRICULTURE AND NATURAL RESOURCES

See University and College Requirements

MAJOR REQUIREMENTS
Mathematics and Computer Science
Mathematics course (MATH 115 or higher) 3
Computer Science course (FREC 135 or equivalent) 3

Physical Sciences 8
Minimum of eight credits selected from one of the following two-course sequences:
CHEM 101/102 or CHEM 103/104
PHYS 201/202 or PHYS 207/208
SCEN 101/102

Communications (cannot be double counted to fulfill another requirement)
A minimum of one course in written communications chosen from the following: 3
ENGL 301 Expository Writing
ENGL 302 Advanced Composition
ENGL 312 Written Communications in Business
ENGL 410 Technical Writing

A minimum of one course in oral communications chosen from the following: 3
AGRI 212 Oral Communication in Agriculture and Natural Resources
COMM 212 Oral Communication in Business
COMM 255 Fundamentals of Communication
COMM 350 Public Speaking

Within the college 30
Thirty additional credits from any of the following areas (fifteen credits of the 30 must be at the 300 level or higher):
(A maximum of twelve credits of Special Problem/Independent Study/Field Experience may be counted toward the degree, with a maximum of six credits in any one area.)

ELECTIVES
After required courses are completed, sufficient credits must be taken to meet the minimum credits required for the degree. Only four credits total of BHAN 120 activity or performing Music credit may be counted toward the degree.

CREDITS TO TOTAL A MINIMUM OF 124
product and process development, food safety engineering, quality control and analysis, technical service and sales, with opportunities in regulatory agencies, education, and basic research. This major places emphasis on the biological, chemical and physical sciences, preparing a student for research opportunities within the Food Science disciplines. Additional recommended electives can provide a student with the course work to pursue a food processing engineering emphasis.

Students are encouraged to participate in a broad realm of animal and food science projects in the department through undergraduate research opportunities.

**BACHELOR OF SCIENCE - ANIMAL AND FOOD SCIENCES**

See University and College Requirements

Math and Science Requirements
MATH 221 Calculus I 3
BISC 207/BISC 208 Introductory Biology I and II 8
CHEM 101/CHEM 102 or CHEM 103/CHEM 104 General Chemistry I and II 8
CHEM 213/CHEM 215 Elementary Organic Chemistry w/lab 4
CHEM 214/CHEM 216 Elementary Biochemistry w/lab 4

MAJOR REQUIREMENTS
A minimum grade of C- is required for all ANFS credits used to satisfy the major requirements.
ANFS 101 Introduction to Animal Science 3
ANFS 102 Food for Thought 3
ANFS 111 Animal and Food Science Laboratory 1
ANFS 140 Functional Anatomy 4
ANFS 230 Foodborne Diseases (or ANFS 332 Animal Diseases) 3
ANFS 251 Animal Nutrition 3
ANFS 252 Animal Nutrition Laboratory 1
ANFS 265 Career Development 1
ANFS 300 Principles of Animal and Plant Genetics 3
ANFS 305 Food Science 3

One of the following 3-credit physiology courses: 3
ANFS 441 Reproductive Physiology of Domestic Animals
ANFS 442 Lactational Physiology
BISC 306 General Physiology

One of the following 4-credit capstone/DLE courses: 4
ANFS 404 Dairy Production
ANFS 411 Food Science Capstone
ANFS 417 Beef Cattle and Sheep Production
ANFS 418 Swine Production
ANFS 421 Poultry Production
ANFS 420 Equine Management

A minimum of 6 credits from the following, to include at least two courses
ANFS 409 Food Processing 3
ANFS 419 Topics in International Animal Agriculture 3-4
ANFS 424 Nonruminant Nutrition 3
ANFS 435 Animal Virology 3
ANFS 436 Immunology of Domestic Animals 3
ANFS 439 Food Microbiology 3
ANFS 441 Reproductive Physiology of Domestic Animals 3
ANFS 442 Lactational Physiology 3
ANFS 445 Comparative Physiology of Domestic Animals 3
ANFS 449 Food Biotechnology 4
ANFS 454 Ruminant Nutrition 3
ANFS 366/ANFS 466 Independent Study (max)
ANFS 468 Research (max)
ANFS 470 Principles of Molecular Genetics 3

Second writing requirement (with a minimum grade of C-) 3**
A second writing course involving significant writing experience. The course must be taken after completion of 60 credit hours. Approved courses are designated each semester. (**These credits can be used to satisfy credit requirements in the breadth requirements for Literature and Arts)

ELECTIVES
Variable to complete a total of 124 credits
After required courses are completed, sufficient credits must be taken to meet the minimum requirements for the degree. Only 4 credits of BHAN120 or 4 credits of performing Music credit may be counted toward the degree. ANFS 399 may be taken P/F for a maximum of 2 credits toward the degree. No more than 5 credits of ANFS X66 may be counted towards the major.

Students should consult with their advisor regarding the choice of elective credits. Students wishing to concentrate their efforts in the areas...
of Production Systems, Equine and Companion Animals, Food Safety, or Biotechnology are strongly encouraged to consider the recommended course selections provided by the department.

CREDITS TO TOTAL A MINIMUM OF 124

ELECTIVES
After required courses are completed, sufficient credits must be taken to meet the minimum requirements for the degree. Only 4 credits of BHAN120 or 4 credits of performing Music credit may be counted toward the degree. ANFS 399 may be taken P/F for a maximum of 2 credits toward the degree. No more than 5 credits of ANFS X66 may be counted towards the major.

Recommended Electives:
- ANFS 436 Immunology of Domestic Animals
- ANFS 261 Principles of Companion Animal Nutrition
- ANFS 424 Nonruminant Nutrition
- ANFS 435 Introduction to Animal Virology
- ANFS 442 Lactational Physiology
- ANFS 454 Ruminant Nutrition
- COMM 212 or AGRI 212 Oral Communication
- ENWC 419 Medical Veterinary Entomology
- ENGL 312 Written Communications in Business
- FREC 201 Records and Accounts

CREDITS TO TOTAL A MINIMUM OF 124

HONORS BACHELOR OF SCIENCE - ANIMAL AND FOOD SCIENCES or PRE-VETERINARY MEDICINE AND ANIMAL BIOSCIENCES

The recipient of this degree must complete:

All requirements for the Bachelor of Science: Animal and Food Sciences or Pre-Veterinary Medicine and Animal Biosciences

All the University requirements for the Honors degree. Courses with the ANFS prefix taken at the 600-level or higher are considered to be Honors courses in the major. One 3- or 4-credit course in PLSC, ENWC, or BISC will, if taken as Honors, count toward the 12 Honors credits required in the major or in related disciplines.

MINOR IN ANIMAL SCIENCE

A minimum grade of C- is required for all ANFS credits used to satisfy the minor requirements

The minor in animal science requires 19 credits in animal science including: ANFS 101, ANFS 111, ANFS 140, ANFS 251, ANFS 252, one course
BACHELOR OF SCIENCE - FOOD SCIENCE

from ANFS 404, ANFS 417, ANFS 418, ANFS 420 and ANFS 421; and one course from ANFS 332, ANFS 441, ANFS 442, ANFS 436 and ANFS 454.

ELECTIVES - Variable to complete a total of 124 credits

After required courses are completed, sufficient credits must be taken to meet the minimum credits requirements for the degree. Only 4 credits of BHAN120 or four credits of performing Music credits may be counted toward the degree. ANFS 399 may be taken P/F for a maximum of 2 credits toward the degree. No more than 5 credits of ANFS X66 may be counted towards the major.

Students should seek advice from their academic advisors when choosing electives.

CREDITS TO TOTAL A MINIMUM OF 124

HONORS BACHELOR OF SCIENCE - FOOD SCIENCE

The recipient of this degree must complete:

All requirements for the Bachelor of Science: Food Science.

All the University requirements for the Honors degree. Courses in Food Science taken at the 600-level or higher are considered to be Honors courses in the major. One 3-or 4-credit required course in a related technical area will, if taken as Honors, count toward the total of Honors credits required in the major or in related disciplines.

MINOR IN FOOD SCIENCE

The minor in food science requires 15 credits, and a C- grade or higher is required in all ANFS courses. Course selection depends on completion of prerequisites and other science and math preparation. Successful completion of MATH 221/MATH 222 Calculus I and II (6 credits) is required prior to taking food science courses for the minor; however, pre-requisites may be waived with permission of instructor.

ANFS 305 Food Science 3
Select any 3 courses from:
ANFS 428 Food Chemistry
ANFS 429 Food Analysis
ANFS 409 Food Processing
ANFS 411 Food Science Capstone (DLE) 4
ANFS 439 Food Microbiology 4
ANFS 443 Food Engineering 4
ANFS 449 Food Biotechnology 4

Second Writing Requirement (with a minimum grade of C-) 3**
A second writing course involving significant writing experience. The course must be taken after completion of 60 credit hours. Approved courses are designated each semester. (**These credits can be used to satisfy credit requirements in the breadth requirements for Literature and Arts)
The Bioresources Engineering Department offers an undergraduate major in Engineering Technology that is accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology (TAC of ABET).

ENGINEERING TECHNOLOGY

Engineering technology is part of the broad discipline of engineering, in which knowledge of the mathematical and natural sciences is applied in utilization of materials and forces. Engineering technology requires the application of scientific and engineering knowledge combined with technical skills in support of engineering activities. The curriculum prepares the engineering technologist to make independent judgments and to design and manage systems and components to achieve conceptual goals with consideration of their effectiveness, safety and cost. Close liaison is maintained between the educational programs and employers to give graduates the greatest opportunity for career development.

Within the major in engineering technology, two optional concentrations are available. The natural resources engineering technology concentration includes course work in storm-water management, wastewater treatment systems, water supply and non-point source pollution. The construction technology and technical management concentration provides courses in soil mechanics, storm-water management, wood and steel and concrete and masonry as well as courses in project management and economic analysis. Both concentrations allow the student to focus their studies with more in-depth courses in areas of their interest.

Students who choose the engineering technology major may take all the necessary courses at the University of Delaware or they may transfer appropriate course work from other accredited institutions. Students who wish to have prior course work considered must contact an advisor in the department for a degree analysis.

Computer use for problem solving is important throughout the engineering technology curriculum. Students are urged to have their own computer with spreadsheet and word processing software, and should be able to connect to the University computer network.

BACHELOR OF SCIENCE - ENGINEERING TECHNOLOGY

UNIVERSITY REQUIREMENTS

ENGL 110  Critical Reading and Writing  3
First Year Experience (FYE)  0-4
Breadth Requirements  12
Discovery Learning Experience (DLE)  3
Multi-cultural Courses  3
Three credits in an approved course or courses stressing multi-cultural, ethnic, and/or gender-related course content

MAJOR REQUIREMENTS

Professional Development
BREG 165  Engineering Technology Freshman Seminar I (FYE)  0
BREG 175  Engineering Technology Freshman Seminar  1
BREG 265  Engineering Technology Sophomore Seminar  1
BREG 365  Engineering Technology Junior Seminar  1
BREG 465  Engineering Technology Senior Seminar & Capstone Experience  1

Communications
A second writing course selected from those listed as satisfying the College of Arts & Sciences second writing requirement.  3

An oral communications course selected from:
COMM 212  Oral Communication in Business  3
COMM 350  Public Speaking  3

Additional Breadth Requirements
ECON 151  Introduction to Microeconomics  3
ECON 152  Introduction to Macroeconomics  3

Six additional credits from two different categories to be selected from university breadth groups: Creative Arts and Humanities or History and Cultural Change. May include Multicultural Course.  6
BS- ENGINEERING TECHNOLOGY (NATURAL RESOURCES ENGINEERING TECHNOLOGY)

Basic Sciences and Mathematics
Biology/Life Science course 3 or 4
CHEM 103 General Chemistry 4
PHYS 207/PHYS 208 Fundamentals of Physics I and II (recommended)
or
PHYS 201/PHYS 202 Introductory Physics I and II 8
MATH 241 Calculus A (Students not qualifying for placement in MATH 241 may be required to take MATH 117 first) 4
MATH 242 Calculus B 4
or
MATH 222 Calculus II (with permission of advisor) 3

Additional MATH course to bring total MATH credits at 201 level and above to 12 credits 4 or 5

Technical Skills
BREG 209 Technical and Computer Aided Drafting 3
CISC 106 General Computer Science for Engineers 3
Technical Skills Electives 6

Technical Sciences
BREG 215 Applied Fluid Mechanics 4
BREG 231 Fundamentals of Statics and Strength of Materials 4
BREG 232 Dynamics for Engineering Technology 3
BREG 244 Electricity for Engineering Technology 4
BREG 311 Fundamentals of Thermodynamics 3

Technical Specialization
BREG 450 Technical Practicum in Industry (DLE) 3
or
BREG 468 Undergraduate Research (DLE) 3

Technical Specialization Electives 30 to 24
24 to 30 credits of BREG or engineering courses at the 300-level or above from a department approved list. May include maximum of one course from BREG 306, 416, 417, and 420. A maximum of 6 credits from BREG 450 and BREG 468 may be counted in technical specialization. With a science, technical, or business minor or an ET Associate's degree, the requirements for Technical Specialization electives are reduced from 30 credits to a minimum of 24

Technical Support 9 to 15
9 to 15 credits of course work selected to support the student's career objectives. Increase to 15 credits if Technical Specialization elective credits are reduced to 24 by virtue of a science, technical, or business minor or an ET Associate's degree. Subject to the approval of the faculty.

CREDITS TO TOTAL A MINIMUM OF 124

Students must earn at least a C- in all prerequisite courses to qualify for admission to the next course. Enrollment in BREG 300 and 400 level courses is limited to majors with Junior or Senior standing, or by permission of the instructor. To graduate with a major in engineering technology, a student must attain at least a 2.0 average in BREG courses. This requirement is in addition to the University requirement of an overall 2.0 grade point average.

BACHELOR OF SCIENCE - ENGINEERING TECHNOLOGY (NATURAL RESOURCES ENGINEERING TECHNOLOGY)

UNIVERSITY REQUIREMENTS
ENGL 110 Critical Reading and Writing 3

First Year Experience (FYE) 1

Breadth Requirements 12

Discovery Learning Experience (DLE) 3

Multi-cultural courses 3

Three credits in an approved course or courses stressing multi-cultural, ethnic, and/or gender-related course content

MAJOR REQUIREMENTS

Professional Development
BREG 165 Engineering Technology Freshman Seminar I (FYE) 0
BREG 175 Engineering Technology Freshman Seminar 1
BREG 265 Engineering Technology Sophomore Seminar 1
BREG 365 Engineering Technology Junior Seminar 1
BREG 465 Engineering Technology Senior Seminar & Capstone Experience 1

Communications
A second writing course selected from those
BS - ENGINEERING TECHNOLOGY (CONSTRUCTION TECHNOLOGY AND TECHNICAL MANAGEMENT)

listed as satisfying the College of Arts & Sciences second writing requirement. 3

An oral communications course selected from:
COMM 212  Oral Communication in Business 3
COMM 350  Public Speaking

Additional Breadth Requirements
ECON 151  Introduction to Microeconomics 3
ECON 152  Introduction to Macroeconomics 3
Six additional credits from two different breadth groups: Creative Arts and Humanities or History and Cultural Change. May include Multicultural Course. 6

Basic Sciences and Mathematics
Biology/Life Science course 3 or 4
CHEM 103  General Chemistry 4
PHYS 207/PHYS 208  Fundamentals of Physics I and II (recommended)
or
PHYS 201/PHYS 202  Introductory Physics I and II 8
MATH 241  Calculus A (Students not qualifying for placement in MATH 241 may be required to take MATH 117 first) 4
MATH 242  Calculus B 4
or
MATH 222  Calculus II (with permission of advisor) 3

Additional MATH course to bring total MATH credits at 201 level and above to 12 credits 4 or 5

Technical Skills
BREG 113  Introduction to Surveying 3
BREG 209  Technical and Computer Aided Drafting 3
BREG 223  Surveying 3
CISC 106  General Computer Science for Engineers 3

Technical Sciences
BREG 215  Applied Fluid Mechanics 4
BREG 231  Fundamentals of Statics and Strength of Materials 4
BREG 232  Dynamics for Engineering Technology 3
BREG 244  Electricity for Engineering Technology 4
BREG 311  Fundamentals of Thermodynamics 3

Technical Specialization
BREG 321  Storm Water Management 4
BREG 328  Wastewater Treatment 3
BREG 421  Nonpoint Source Pollution Management 3
BREG 423  Advanced Stormwater Management 3
BREG 424  Water Supply and Water Treatment Systems 3
BREG 450  Technical Practicum in Industry (DLE) or
BREG 468  Undergraduate Research (DLE) 3

Technical Specialization electives 14 to 8
8 to 14 credits of BREG or engineering courses at the 300-level or above from a department approved list. May include maximum of one course from BREG 306, 416, 417, and 420. A maximum of 6 credits from BREG 450 and BREG/UNIV 468 may be counted in technical specialization. With a science, technical, or business minor or an ET Associate's degree, the requirements for Technical Specialization electives are reduced from 14 credits to a minimum of 8.

Technical Support 9 to 15
Technical Support electives - 9 to 15 credits selected to support the student’s career interest. Requirement is 9 credits if Technical Specialization elective credits are reduced to 8 by virtue of a science, technical, or business minor or an ET Associate’s degree. Subject to the approval of the faculty.

CREDITS TO TOTAL A MINIMUM OF 124

Students must earn at least a C- in all prerequisite courses to qualify for admission to the next course. Enrollment in BREG 300 and 400 level courses is limited to majors with Junior or Senior standing, or by permission of the instructor. To graduate with a major in engineering technology, a student must attain at least a 2.0 average in BREG courses. This requirement is in addition to the University requirement of an overall 2.0 grade point average.

BACHELOR OF SCIENCE - ENGINEERING TECHNOLOGY (CONSTRUCTION TECHNOLOGY AND TECHNICAL MANAGEMENT)

UNIVERSITY REQUIREMENTS
ENGL 110  Critical Reading and Writing 3

First Year Experience (FYE) 0-4

Breadth Requirements 12
Discovery Learning Experience (DLE) 3
Multi-cultural Courses 3
Three credits in an approved course or courses stressing multi-cultural, ethnic, and/or gender-related course content.

MAJOR REQUIREMENTS

Professional Development
BREG 165 Engineering Seminar I (FYE) 0
BREG 175 Engineering Seminar I 1
BREG 265 Engineering Seminar II 1
BREG 365 Engineering Seminar III 1
BREG 465 Engineering Seminar IV 1

Communications
A second writing course selected from those listed as satisfying the College of Arts & Sciences second writing requirement. 3
An oral communications course selected from:
COMM 212 Oral Communication in Business 3
COMM 350 Public Speaking 3

Additional Breadth Requirements
ECON 151 Introduction to Microeconomics 3
ECON 152 Introduction to Macroeconomics 3
Six additional credits from two different categories to be selected from university breadth groups: Creative Arts and Humanities or History and Cultural Change. May include Multicultural Course. 6

Basic Sciences and Mathematics
Biology/Life Science course 3 or 4
CHEM 103 General Chemistry 4
PHYS 207 or PHYS 208 Fundamentals of Physics I and II (recommended) 8
or
PHYS 201 or PHYS 202 Introductory Physics I and II 8
MATH 241 Calculus A (Students not qualifying for placement in MATH 241 may be required to take MATH 117 first) 4
MATH 242 Calculus B 4
or
MATH 222 Calculus II (with permission of advisor) 3

Additional MATH course to bring total MATH credits at 201 level and above to 12 credits 4 or 5

Technical Skills
BREG 113 Introduction to Surveying 3
BREG 209 Technical and Computer-Aided Drafting 3
BREG 223 Surveying 3
CISC 106 General Computer Science for Engineers 3

Technical Sciences
BREG 215 Applied Fluid Mechanics 4
BREG 231 Fundamentals of Statics and Strength of Materials 4
BREG 232 Dynamics for Engineering Technology 3
BREG 244 Electricity for Engineering Technology 4
BREG 311 Fundamentals of Thermodynamics 3

Technical Specialization
BREG 312 Fundamentals of Soil Mechanics 3
BREG 321 Storm Water Management 4
BREG 416 Project Economic Analysis 3
BREG 454 Wood and Steel Structures 3
BREG 455 Concrete and Masonry Structures 3
BREG 450 Technical Practicum in Industry (DLE) or
BREG 468 Undergraduate Research (DLE) 3

Technical Specialization Electives 14 to 18
8 to 14 credits of BREG or engineering courses at the 300-level or above from a department approved list. May include maximum of one course from BREG 306, 416, 417, and 420. A maximum of 6 credits from BREG 450 and BREG/UNIV 468 may be counted in Technical Specialization. With a science, technical, or business minor or an ET Associate’s degree, the requirements for Technical Specialization electives are reduced from 14 credits to a minimum of 8.

Technical Support
BREG 306 Cost Estimating 3
BREG 417 Project Management 3
Technical Support Electives 3 to 9
3 to 9 credits of course work selected to support the student’s career interest. Requirement is 9 credits if Technical Specialization elective credits are reduced to 8 by virtue of a science, technical, or business minor or an ET Associate’s degree. Subject to the approval of the faculty.

CREDITS TO TOTAL A MINIMUM OF 124
Entomology and Wildlife Ecology

Students must earn at least a C- in all prerequisite courses to qualify for admission to the next course. Enrollment in BREG 300 and 400 level courses is limited to majors with Junior or Senior standing, or by permission of the instructor. To graduate with a major in engineering technology, a student must attain at least a 2.0 average in BREG courses. This requirement is in addition to the University requirement of an overall 2.0 grade point average.

MINOR IN ENGINEERING TECHNOLOGY

A minor in engineering technology may be earned by a student in any University bachelor degree program through successful completion of a minimum of 20 credits in engineering technology courses in accordance with the requirements listed here. Before taking each engineering technology course, the student must satisfy required prerequisites for the course. A grade point average of at least 2.0 is required in the 20 credits of engineering technology courses for the minor.

The required engineering technology courses are:

BREG 209  Technical and Computer Aided Drafting  3

One course from the following list:

BREG 215  Applied Fluid Mechanics  4
BREG 231  Fundamentals of Statics and Strength of Materials  4
BREG 244  Electricity for Engineering Technology  4

Furthermore, additional courses must be completed so that BREG credits total 20, of which at least 6 credits must be at the 300-level or above. All engineering technology courses shall be selected with the approval of an advisor in the Department of Bioresources Engineering to meet each student’s objectives. For students interested in natural resources and environmental issues, courses could include: BREG 103, BREG 113, BREG 215, BREG 223, BREG 321, BREG 328, BREG 421, and BREG 423. For students interested in construction technology, courses could include: BREG 113, BREG 215, BREG 223, BREG 231, BREG 312, BREG 321, BREG 416, BREG 417, BREG 420, BREG 454, BREG 455 and BREG 456. Courses can also be chosen to give the student’s minor an emphasis in other areas such as manufacturing or management.

Entomology and Wildlife Ecology

Telephone: (302) 831-2526
E-mail: jlbowman@udel.edu
http://ag.udel.edu
Faculty Listing: http://ag.udel.edu/enwc/faculty/facultyStaff.htm

Entomology emphasizes the structure, physiology, behavior, development, ecology, classification, and management of insects. Wildlife ecology broadly includes the biology and ecology of all species and their conservation. Wildlife conservation is the broad effort to perpetuate free-living, breeding populations of species in their native habitats. The department views all non-domesticated species as wildlife. Ecology is a multidisciplinary science that incorporates sciences like geology, botany, microbiology, and organismal biology.

The Department offers three undergraduate majors. Students can focus their biological interest on insects in the Entomology major. This program requires basic sciences as well as specialty courses on insects. Flexibility in course selection permits students to emphasize pest management or insect biology. The Wildlife Conservation major is for students with interests in the biological aspects of environmental science, e.g., conservation, wildlife biology, or ecology. It requires basic sciences, specialty courses in vertebrates, insects, plants, and conservation and other supporting areas. The curriculum’s flexibility accommodates career goals ranging from research to nature education, conservation advocacy and wildlife management. Meeting the requirements for the Wildlife Conservation major should provide the student with the minimum educational requirements for certification as an Associate Wildlife Biologist by The Wildlife Society, a professional society. The Ecology major learn principles and relationships between all these sciences, including: 1. The movement of materials and energy through living communities, including the basic understanding of life processes, 2. The distribution and diversity of both producers (plants) and consumers (animals), 3. The ecological interactions among organisms at different trophic levels. The Ecology major is interdisciplinary, with the Department of Biological Sciences supplying training in the basic tenets of biology, and the Department of Entomology and Wildlife Ecology offering courses related to the diversity, behavior, and ecological interactions among organisms. An Honors Degree option is offered for all majors. The department also offers minors in both Entomology and Wildlife Conservation and co-
BACHELOR OF SCIENCE - ECOLOGY

offers Natural Resource Management and Plant Protection as interdisciplinary majors.

The faculty advisor and student jointly plan the course program according to the student’s interests and career objective. Course selection should be made in consultation with the academic advisor during the registration period of each term.

University of Delaware students in other majors who wish to transfer to or add entomology or wildlife conservation majors must have a UD grade point average of at least 2.25. In addition, completion of the major must be the stated intention of the student and a realistic possibility before the student's intended graduation date. Students with a GPA below 2.25 are invited to contact the department for advisement on course selection appropriate to the desired major while improving their GPA.

BACHELOR OF SCIENCE - ECOLOGY

See University and College requirements.

MAJOR REQUIREMENTS

A minimum grade of C- is required for all ENWC credits used to satisfy departmental requirements.

Foundation Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>MATH 241</td>
<td>Analytic Geometry and Calculus A (bio section available and preferable)</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 103</td>
<td>General Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 104</td>
<td>General Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>BISC 207</td>
<td>Introductory Biology I</td>
<td>4</td>
</tr>
<tr>
<td>BISC 208</td>
<td>Introductory Biology II</td>
<td>4</td>
</tr>
<tr>
<td>FREC 408</td>
<td>Statistical Research Methods</td>
<td>3</td>
</tr>
<tr>
<td>or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STAT 200</td>
<td>Basic Statistical Practice</td>
<td>3</td>
</tr>
<tr>
<td>or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BISC 643</td>
<td>Biological Data Analysis</td>
<td>3</td>
</tr>
</tbody>
</table>

1. The movement of materials and energy through living communities including basic understanding of life processes

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 321</td>
<td>Organic Chemistry</td>
<td>4</td>
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<tr>
<td>CHEM 322</td>
<td>Organic Chemistry</td>
<td>4</td>
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<tr>
<td>PHYS 201</td>
<td>Introductory Physics I</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 202</td>
<td>Introductory Physics II</td>
<td>4</td>
</tr>
<tr>
<td>BISC 403</td>
<td>Genetic and Evolutionary Biology</td>
<td>3</td>
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<td>BISC 495</td>
<td>Evolution</td>
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</table>

Earth Processes - Select 2 of the following: 6-8 credit hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>GEOG 101</td>
<td>Physical Geography: Climatic Processes</td>
<td></td>
</tr>
<tr>
<td>GEOG 106</td>
<td>Physical Geography: Land Surface Processes</td>
<td></td>
</tr>
<tr>
<td>GEOG 220</td>
<td>Meteorology</td>
<td></td>
</tr>
<tr>
<td>GEOG 342</td>
<td>Bioclimatology</td>
<td></td>
</tr>
<tr>
<td>GEOL 107</td>
<td>General Geology</td>
<td></td>
</tr>
<tr>
<td>GEOL 113</td>
<td>Earth Science</td>
<td></td>
</tr>
<tr>
<td>PLSC 204</td>
<td>Introduction to Soil Science</td>
<td></td>
</tr>
</tbody>
</table>

2. The distribution and diversity of both producers and consumers

Producers

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLSC 201</td>
<td>Botany II</td>
<td>4</td>
</tr>
<tr>
<td>PLSC 214</td>
<td>Indigenous Woody Plants of the Eastern U.S.</td>
<td></td>
</tr>
<tr>
<td>or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PLSC 404</td>
<td>Plant Taxonomy</td>
<td>3-4</td>
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</table>

Consumers - Select 2 of the following: 6 credit hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENWC 406</td>
<td>Insect Identification</td>
<td></td>
</tr>
<tr>
<td>ENWC 418</td>
<td>Ornithology</td>
<td></td>
</tr>
<tr>
<td>ENWC 424</td>
<td>Herpetology</td>
<td></td>
</tr>
<tr>
<td>ENWC 425</td>
<td>Mammalogy</td>
<td></td>
</tr>
<tr>
<td>MAST 630</td>
<td>Ichthyology</td>
<td></td>
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</table>

3. Ecological interactions among organisms at different trophic levels

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BISC 302</td>
<td>General Ecology</td>
<td>3</td>
</tr>
<tr>
<td>BISC/ENWC 312</td>
<td>Field Ecology</td>
<td>3</td>
</tr>
<tr>
<td>ENWC/BISC 635</td>
<td>Population Ecology</td>
<td>3</td>
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</tbody>
</table>

Select 2 of the following: 6-7 credit hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>BISC 306</td>
<td>General Physiology</td>
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<tr>
<td>BISC 317</td>
<td>Tropical Ecology</td>
<td></td>
</tr>
<tr>
<td>BISC 318</td>
<td>Tropical Amphibians and Reptiles</td>
<td></td>
</tr>
<tr>
<td>BISC 321</td>
<td>Environmental Biology</td>
<td></td>
</tr>
<tr>
<td>BISC 415/615</td>
<td>Vertebrate Developmental Morphology</td>
<td></td>
</tr>
<tr>
<td>BISC 442</td>
<td>Vertebrate Morphology</td>
<td></td>
</tr>
<tr>
<td>BISC 480</td>
<td>Vertebrate Natural History</td>
<td></td>
</tr>
<tr>
<td>BISC 641</td>
<td>Microbial Ecology</td>
<td></td>
</tr>
<tr>
<td>ENWC 419</td>
<td>Biological Control</td>
<td></td>
</tr>
<tr>
<td>ENWC 444/BISC 440</td>
<td>Conservation of Tropical Biodiversity</td>
<td></td>
</tr>
<tr>
<td>ENWC 452</td>
<td>Conservation of African Wildlife</td>
<td></td>
</tr>
<tr>
<td>ENWC 453</td>
<td>Community-Based Conservation</td>
<td></td>
</tr>
<tr>
<td>ENWC 456</td>
<td>Conservation Biology</td>
<td></td>
</tr>
<tr>
<td>ENWC 620</td>
<td>Behavioral Ecology</td>
<td></td>
</tr>
<tr>
<td>ENWC/MAST 314</td>
<td>Comparative Terrestrial and Marine Ecology</td>
<td></td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credits</td>
</tr>
<tr>
<td>-------------</td>
<td>--------------------------------------------------</td>
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</tr>
<tr>
<td>MAST 421/621</td>
<td>Coastal Field Biology</td>
<td>3</td>
</tr>
<tr>
<td>MAST 427/627</td>
<td>Marine Biology</td>
<td>3</td>
</tr>
<tr>
<td>MAST 442</td>
<td>Ecology and Evolution of Coral Reefs</td>
<td>3</td>
</tr>
<tr>
<td>MAST 451/651</td>
<td>Marine Invertebrate Diversity</td>
<td>3</td>
</tr>
<tr>
<td>MAST 618</td>
<td>Marine Microbial Ecology</td>
<td>3</td>
</tr>
<tr>
<td>ENWC 465</td>
<td>Senior Capstone Experience</td>
<td>1</td>
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<tr>
<td>ENWC 405</td>
<td>Insect Structure and Function</td>
<td>3</td>
</tr>
<tr>
<td>ENWC 406</td>
<td>Insect Identification-Taxonomy</td>
<td>3</td>
</tr>
<tr>
<td>ENWC 408</td>
<td>Field Taxonomy</td>
<td>3</td>
</tr>
<tr>
<td>ENWC 465</td>
<td>Senior Capstone Experience</td>
<td>1</td>
</tr>
<tr>
<td>ENWC courses</td>
<td>(may include 3 credits maximum of Independent Study, Research, and must include one regularly scheduled course with content focused on insects; Field Experience.)</td>
<td>6</td>
</tr>
<tr>
<td>ENGL 301</td>
<td>Expository Writing</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 307</td>
<td>News Writing &amp; Editing</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 312</td>
<td>Written Com. in Business</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 410</td>
<td>Technical Writing</td>
<td>3</td>
</tr>
<tr>
<td>UNIV 402</td>
<td>Senior Thesis (thesis must be completed)</td>
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<tr>
<td>AGRI 212</td>
<td>Oral Com. in Ag &amp; Natural</td>
<td>3</td>
</tr>
<tr>
<td>COMM 212</td>
<td>Oral Com. in Business</td>
<td>3</td>
</tr>
<tr>
<td>COMM 350</td>
<td>Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>LEAD 209</td>
<td>Presentation Strategies</td>
<td>3</td>
</tr>
<tr>
<td>THEA 204</td>
<td>Intro to Voice and Speech</td>
<td>3</td>
</tr>
<tr>
<td>ENWC 165</td>
<td>New Student Seminar</td>
<td>1</td>
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<tr>
<td>ENWC 205</td>
<td>Elements of Entomology</td>
<td>3</td>
</tr>
<tr>
<td>ENWC 215</td>
<td>Entomology Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>ENWC 300</td>
<td>Principles of Animal and Plant</td>
<td>8</td>
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</tbody>
</table>

Credits to total minimum of 124

**BACHELOR OF SCIENCE - ENTOMOLOGY**

See University and College requirements.

**MAJOR REQUIREMENTS**

A minimum grade of C- is required for all ENWC credits used to satisfy departmental requirements.

**Professional Studies**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FREC 135</td>
<td>Intro to Data Analysis (or equivalent)</td>
<td>3</td>
</tr>
<tr>
<td>MATH 115</td>
<td>Pre-Calculus or higher level</td>
<td>3</td>
</tr>
<tr>
<td>BISC 207</td>
<td>Introductory Biology I</td>
<td>4</td>
</tr>
<tr>
<td>BISC 208</td>
<td>Introductory Biology II</td>
<td>4</td>
</tr>
<tr>
<td>BISC 302</td>
<td>General Ecology</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 101/102</td>
<td>or</td>
<td></td>
</tr>
<tr>
<td>CHEM 103/104</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENWC 165</td>
<td>New Student Seminar</td>
<td>1</td>
</tr>
<tr>
<td>ENWC 205</td>
<td>Elements of Entomology</td>
<td>3</td>
</tr>
<tr>
<td>ENWC 215</td>
<td>Entomology Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>ENWC 300</td>
<td>Principles of Animal and Plant</td>
<td>8</td>
</tr>
</tbody>
</table>

**BACHELOR OF SCIENCE - WILDLIFE CONSERVATION**

See University and College requirements.

**MAJOR REQUIREMENTS**

A minimum grade of C- is required for all ENWC credits used to satisfy departmental requirements.

**Professional Studies**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>FREC 135</td>
<td>(or equivalent) Intro to Data Analysis</td>
<td>3</td>
</tr>
<tr>
<td>MATH 115, MATH 221, or MATH 241</td>
<td>3-4</td>
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</tr>
<tr>
<td>BISC 207/208</td>
<td>Introductory Biology I and II</td>
<td>8</td>
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<tr>
<td>BISC 302</td>
<td>General Ecology</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 101/102</td>
<td>or</td>
<td></td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credits</td>
</tr>
<tr>
<td>-------------</td>
<td>-------------------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>CHEM 103/CHEM 104</td>
<td>General Chemistry</td>
<td>8</td>
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<tr>
<td>ENWC 165</td>
<td>New Student Seminar</td>
<td>1</td>
</tr>
<tr>
<td>ENWC 201</td>
<td>Wildlife Conservation and Ecology</td>
<td>3</td>
</tr>
<tr>
<td>ENWC 205</td>
<td>Elements of Entomology</td>
<td>3</td>
</tr>
<tr>
<td>ENWC 300</td>
<td>Principles of Animal and Plant Genetics</td>
<td>3</td>
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<tr>
<td>ENWC 325</td>
<td>Wildlife Management</td>
<td>3</td>
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<tr>
<td>ENWC 406</td>
<td>Insect Identification-Biology</td>
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<tr>
<td>ENWC 415</td>
<td>Wildlife Research Techniques</td>
<td>3</td>
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<td>ENWC 418</td>
<td>Ornithology</td>
<td>3</td>
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<td>ENWC 425</td>
<td>Mammalogy</td>
<td>3</td>
</tr>
<tr>
<td>ENWC 465</td>
<td>Senior Capstone Experience</td>
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<td>ENWC credit (may include UNIV 400 or any ENWC course 200-level)</td>
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<tr>
<td>or ECON 151</td>
<td>Introduction to Microeconomics: Prices and Markets</td>
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<tr>
<td>or FREC 150</td>
<td>Economics of Agriculture and Natural Resources</td>
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<tr>
<td>or FREC 408</td>
<td>Research Methods I</td>
<td>3</td>
</tr>
<tr>
<td>or STAT 200</td>
<td>Basic Statistical Practice</td>
<td>3</td>
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<tr>
<td>PLSC 101</td>
<td>Botany I</td>
<td>4</td>
</tr>
<tr>
<td>PLSC 204</td>
<td>Introduction to Soil Science</td>
<td>3</td>
</tr>
<tr>
<td>PLSC 212</td>
<td>Woody Landscape Plants</td>
<td>4</td>
</tr>
<tr>
<td>or PLSC 214</td>
<td>Indigenous Woody Plants of Eastern United States</td>
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<td>or PLSC 404</td>
<td>Plant Taxonomy</td>
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<td>GROUP I: 10 credits from the following</td>
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<tr>
<td>ANSC 140</td>
<td>Functional Anatomy of Domestic Animals</td>
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<tr>
<td>BISC 300</td>
<td>Introduction to Microbiology</td>
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</tr>
<tr>
<td>BISC 305</td>
<td>Cell Physiology</td>
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<tr>
<td>BISC 306</td>
<td>General Physiology</td>
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<tr>
<td>BISC 442</td>
<td>Vertebrate Morphology</td>
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</tr>
<tr>
<td>BISC 480</td>
<td>Vertebrate Natural History</td>
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</tr>
<tr>
<td>BISC 495</td>
<td>Evolution</td>
<td></td>
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<tr>
<td>BISC 637</td>
<td>Population Ecology</td>
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<tr>
<td>ENWC 310</td>
<td>Animal and Plant Genetics Laboratory</td>
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<tr>
<td>ENWC 408</td>
<td>Insect FieldTaxonomy</td>
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</tr>
<tr>
<td>ENWC 424</td>
<td>Herpetology</td>
<td></td>
</tr>
<tr>
<td>ENWC 444</td>
<td>Conservation of Tropical Biodiversity</td>
<td></td>
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<tr>
<td>ENWC 452</td>
<td>Conservation of African Wildlife</td>
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<tr>
<td>MAST 627</td>
<td>Marine Biology</td>
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<td>MAST 629</td>
<td>Ichthyology</td>
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<td>GROUP II: 9 credits from the following</td>
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<tr>
<td>AGRI 212</td>
<td>Oral Communication in Agriculture and Natural Resources</td>
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<tr>
<td>COMM 212</td>
<td>Oral Communication in Business</td>
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</tr>
<tr>
<td>COMM 350</td>
<td>Public Speaking</td>
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</tr>
<tr>
<td>ENGL 301</td>
<td>Expository Writing</td>
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<tr>
<td>ENGL 307</td>
<td>News Writing and Editing</td>
<td></td>
</tr>
<tr>
<td>ENGL 309</td>
<td>Feature and Magazine Writing</td>
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</tr>
<tr>
<td>ENGL 312</td>
<td>Written Communications in Business</td>
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</tr>
<tr>
<td>ENGL 410</td>
<td>Technical Writing</td>
<td></td>
</tr>
<tr>
<td>THEA 204</td>
<td>Introduction to Voice and Speech</td>
<td></td>
</tr>
<tr>
<td>UNIV 402</td>
<td>Senior Thesis (requires completed thesis)</td>
<td></td>
</tr>
</tbody>
</table>

GROUP III: 6 credits from the following 6
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENWC 413</td>
<td>Wildlife Policy and Administration</td>
</tr>
<tr>
<td>ENWC 450</td>
<td>Debates in Conservation Biology</td>
</tr>
<tr>
<td>ENWC 453</td>
<td>Community-based Conservation</td>
</tr>
<tr>
<td>FREC 444</td>
<td>Economics of Environmental Management</td>
</tr>
<tr>
<td>FREC 450</td>
<td>Topics in Environmental Law</td>
</tr>
<tr>
<td>GEOG 236</td>
<td>Conservation: Global Issues</td>
</tr>
<tr>
<td>PHIL 448</td>
<td>Environmental Ethics</td>
</tr>
<tr>
<td>POSC 350</td>
<td>Politics and the Environment</td>
</tr>
</tbody>
</table>

ELECTIVES
Beyond required courses, sufficient credits must be taken to meet the minimum credits required for the degree. Calculus, organic chemistry, biochemistry, geographic information systems, and physics are strongly recommended. Only two credits of BHAN 120 activity or performing music may be counted toward the degree.

CREDITS TO TOTAL A MINIMUM OF 124

HONORS BACHELOR OF SCIENCE - ECOLOGY, ENTOMOLOGY OR WILDLIFE CONSERVATION

The recipient of this degree must complete:

- All requirements for the Bachelor of Science: Ecology, Entomology or Wildlife Conservation.
- All of the University's requirements for the Honors Baccalaureate degree. Courses with the ENWC prefix taken at the 600-level or higher may be counted as Honors courses in the major.
- One 3- or 4-credit course in ANFS, PLSC, or BISC will, if taken as Honors, count toward the 12 Honors credits required in the major and/or in collateral disciplines.

MINOR IN ENTOMOLOGY

The minor in entomology requires 16 credits of ENWC courses including ENWC 205, ENWC 215, ENWC 406, and at least 6 additional credits from courses focused primarily on insects. A minimum grade of C- is required in all courses counting toward the minor. Credits for Special Problem, Independent Study, Research, and Field Experience do not count toward the minor.
Food and Resource Economics

MINOR IN WILDLIFE CONSERVATION

The minor in wildlife conservation requires 18 credits of ENWC courses including ENWC 201, ENWC 205, ENWC 325 and one course from among ENWC 418, ENWC 424, and ENWC 425. Any substitutions require prior approval of the Department Chair. A minimum grade of C- is required in all courses counting toward the minor. Credits for Special Problem, Independent Study, Research, and Field Experience do not count toward the minor. Admission to the Minor in Wildlife Conservation requires: (1) a minimum GPA of 2.75; (2) prior completion or current enrollment in ENWC 201; and (3) at least 45 credits of coursework remaining to complete the BS or BA, independent of the minor. Students should note that WC majors have priority and sometimes may fill some courses required for the minor. Therefore, the Department cannot guarantee that a student will be able to complete all courses necessary or desired for the minor.

Food and Resource Economics
Telephone: (302) 831-1318
E-mail: hastings@udel.edu
http://ag.udel.edu
Faculty Listing: http://ag.udel.edu/frec/faculty/
facultyStaff.htm

Food and Resource Economics is concerned with agribusiness management, education, food marketing, and the economics of resource management and production. Courses are designed to provide a thorough background in the principles of organization and management of agribusiness firms, and includes study of financing agricultural business firms, marketing and international trade of agricultural products, price analyses, economics of land use, and agricultural and environmental policies.

Undergraduate majors are offered in Agricultural Education, Food and Agribusiness Marketing and Management, Resource Economics, and Statistics. The curricula differ in the amount of emphasis given to agricultural production, business and economics. All the curricula may qualify the student for graduate work. The department also co-offers Natural Resource Management, an interdisciplinary major. Minors in Food and Agribusiness Marketing and Management, Resource Economics, Statistics, and Operations Research are also available.

The Agricultural Education major prepares the individual for teacher certification in agricultural and natural resources education. It provides students with an opportunity to gain broad understanding and professional preparation in animal science, plant and soil sciences, food science, engineering technology, entomology and wildlife conservation, resource economics, agribusiness and natural resource management. Students develop and practice their leadership skills through participation in FFA activities and other student organizations. Additionally, it provides pedagogical skills in a pragmatic hands-on program that uses an investigative, scientific, design-and-construct, and problem-solving approach to teaching. The curriculum is designed to allow students to teach in classroom and laboratory settings using modern technology and techniques.

The major in Food and Agribusiness Marketing and Management is offered cooperatively with the Alfred Lerner College of Business and Economics. This curriculum prepares the student for a career in agribusiness sales and marketing, food wholesaling and retailing, international trade, resource management, market analysis, finance and banking, or commodity marketing (futures and options).

Natural Resource Management, an interdisciplinary major, emphasizes an understanding of the economic, physical, legal, and political problems of managing and protecting the environment and related natural resources in today's world. It teaches the skills and capabilities to address those problems in public or private forums. It combines education in economics, and basic and applied biological and physical sciences with the fundamentals of public policy formulation. This major is co-offered by the Departments of Food and Resource Economics, Entomology and Wildlife Ecology, and Plant and Soil Sciences. The curriculum includes courses to help students understand the natural sciences, mathematics and statistics, economics and public policy; appreciate the world's biodiversity; communicate effectively; use computers to manage information; and solve “real world” problems. Students also will have a broad interdisciplinary education in the arts, humanities, social science and environmental ethics. Graduates can continue their education in a variety of graduate areas or seek employment in engineering and environmental consulting firms, and state and federal agencies responsible for environmental protection and natural resource use.

The major in Resource Economics emphasizes theory, quantitative methods, and policy, and provides a solid foundation in economics and business. It prepares the student to work in
the fields of agriculture, government, teaching, extension and research. Concentrations in environmental economics and sustainable development are offered as options in the resource economics major.

The Statistics major teaches the collection, management, analysis and interpretation of data. Statistical methodology is used in virtually every professional field as a way to conduct research and make important decisions. These include the pure sciences, such as biology, chemistry and physics, as well as engineering, business, medicine, and the social sciences (economics, political science, psychology, and sociology).

**BACHELOR OF SCIENCE - AGRICULTURAL EDUCATION**

This program offers a Bachelor of Science degree that prepares the individual for teacher certification in agricultural and natural resources education. It provides students with an opportunity to gain broad understanding and professional preparation in animal science, plant and soil sciences, food science, engineering technology, entomology and wildlife conservation, resource economics, agribusiness and natural resource management. Students develop and practice their leadership skills through participation in FFA activities and other student organizations. Additionally, it provides pedagogical skills in a pragmatic hands-on program that uses an investigative, scientific, design-and-construct, and problem-solving approach to teaching. The curriculum is designed to allow students to teach in classroom and laboratory settings using modern technology and techniques.

See University and College Requirements

**MAJOR REQUIREMENTS**

**Communications (COMM 212)** 3

**Mathematics (MATH 115 or higher)** 3

**Physical Sciences** 8

Minimum of eight credits selected from one of the following two-course sequences:

CHEM 101/CHEM 102 or CHEM 103/CHEM 104

PHYS 201/PHYS 202 or PHYS 207/PHYS 208

**Professional Studies**

AGED 180 Introduction to Agricultural Education 3

AGED 280 FFA and Supervised Agricultural Experiences 3

AGED 448 Student Teaching Seminar 3

AGED 480 Methods of Teaching Agricultural Education I 3

AGED 481 Methods of Teaching Agricultural Education II 3

EDUC 413 Adolescent Development & Educational Psychology 4

EDUC 414 Teaching Exceptional Adolescents 3

EDUC 419 Diversity in Secondary Education 3

EDUC 400 Student Teaching 9  

EDUC 420 Reading in the Content Area 1

Technical Agriculture 30

Thirty credits of agriculture and natural resource courses from at least three departments in the college are required. Three credits must be FREC 135. A minimum overall GPA of 2.75 is required in these courses. Students are to meet with their Agricultural Education advisor before selecting these courses.

A maximum of three credits of independent study in Food and Resource Economics and a maximum of six credits in all areas, including Food and Resource Economics, may be counted toward the degree.

The Agricultural Education program requires a 2.5 minimum overall GPA and passing scores on the Praxis I test for all three subtests (reading, passing score=175; writing, passing score=173; and mathematics, passing score=174) prior to enrollment in AGED 480 and AGED 481, and proof of having taken the Praxis II test in the appropriate academic content area. A copy of the official score report must be submitted to the Delaware Center for Teacher Education, 200 Academy Street, during enrollment in EDUC 400 Student Teaching or no later than November 1 for January graduates and May 1 for June or summer graduates. An institutional recommendation for certification will not be issued until the candidate has presented the official score report. The teacher education program advisor should be consulted for other policies concerning qualifications for student teaching. A minimum GPA of 2.5 is required in all AGED and EDUC courses.

**ELECTIVES**

After required courses are completed, sufficient credits must be taken to meet the minimum credits required for the degree. Only four credits of activity-type Physical Education or performing Music credit may be counted toward the degree.

CREDITS TO TOTAL A MINIMUM OF 124
MAJOR REQUIREMENTS

Physical Sciences  8
Minimum of eight credits of lab science selected from Chemistry, Physics, Geology, or Physical Science.

Professional Studies
MATH 115 Pre-Calculus or higher level (MATH 221*, MATH 230, and MATH 201 are strongly recommended) 3
ACCT 207/ACCT 208 Accounting I and II 6
COMM 212 Oral Communication in Business 3
ENGL 312 Written Communications in Business 3
ECON 151 Microeconomics: Prices and Markets 3
ECON 152 Introduction to Macroeconomics: National Economy 3
BUAD 301 Introduction to Marketing 3
Two additional courses offered by the College of Business and Economics at the 300 or 400 level 6
One foreign language course 3-4
FREC 212 Food Retailing and Consumer Behaviour 3
FREC 135 Introduction to Data Analysis 3
FREC 150 Economics of Agriculture and Natural Resources 3
FREC 240 Quantitative Methods in Agricultural Economics 3
FREC 305 Management and Leadership Development 3
FREC 316 Economics of Biotechnology & New Technologies 3
FREC 345 Strategic Selling and Buyer Communication 3
FREC 404 Food and Fiber Marketing 3
FREC 408 Research Methods I 3
FREC 409 Research Methods II 3
FREC 410 International Agricultural Trade and Marketing 3
FREC 430 Establishing and Managing a Food and Agribusiness Enterprise 3

A maximum of three credits of Independent Study in Food and Resource Economics and a maximum of six credits of Independent Study in all areas, including Food and Resource Economics, may be counted toward a degree.

* MATH 221 or higher (with a minimum grade of C+) can be used as a substitute course for MATH 115 and FREC 240.

ELECTIVES

After required courses are completed, sufficient credits must be taken to meet the minimum credits required for the degree. Only four credits of BHAN 120 activity or four credits of performing Music credit may be counted toward the degree.

Suggested Food and Agribusiness Management Electives:
- FREC 335 Advanced Data Management
- FREC 427 Agribusiness Financial Management
- FREC 464 Agribusiness Internship
- FREC 471 Futures and Options Markets

Suggested Resource Management Electives:
- FREC 406 Agriculture and Natural Resource Policy
- FREC 424 Resource Economics
- FREC 429 Community Economic Development
- FREC 444 Economics of Environmental Management
- FREC 480 Geographic Information Systems in Natural Resource Management

Suggested Communications and Writing Electives:
- ENGL 301 Expository Writing
- ENGL 410 Technical Writing

CREDITS TO TOTAL A MINIMUM OF 124

HONORS BACHELOR OF SCIENCE - FOOD AND AGRIBUSINESS MARKETING AND MANAGEMENT

The recipient of this degree must complete:

1. All requirements for the Bachelor of Science: Food and Agricultural Business Management.

2. All the University requirements for the Honors degree. Courses at the 600-level that satisfy requirements for the major will be considered to be honors courses for the degree.

MINOR IN FOOD AND AGRIBUSINESS MARKETING AND MANAGEMENT

The minor in Food and Agribusiness Management requires 18 credits with the FREC prefix, including FREC 150 - Economics of Agriculture and Natural Resources. Students must take five of the nine FREC courses listed below with a minimum of two courses in each area:
BACHELOR OF SCIENCE - NATURAL RESOURCE MANAGEMENT

Marketing/International Trade Area:
FREC 316 Economics of Biotechnology and New Technologies 3
FREC 345 Strategic Selling and Buyer Communication 3
FREC 404 Food and Fiber Marketing 3
FREC 410 International Trade and Marketing 3
FREC 471 Futures and Options Markets 3

Management/Decision in Analysis Area:
FREC 305 Management and Leadership Development 3
FREC 408 Research Methods I 3
FREC 409 Research Methods II 3
FREC 430 Establishing and Managing a Food and Agribusiness Enterprise 3

Seven courses at the 400-level or above with at least two in each of the following three areas: 21-22

1. Theory
FREC 404 Food and Fiber Marketing 3
FREC 410 International Agricultural Trade and Marketing 3
FREC 424 Resource Economics 3
FREC 444 Economics of Environmental Management 3
FREC 471 Futures and Options Markets 3

2. Methods
FREC 408 Research Methods I 3
FREC 409 Research Methods II 3
FREC 427 Agribusiness Financial Management 3
FREC 480 Geographic Information Systems in Natural Resource Management 3

3. Policy
FREC 406 Agriculture and Natural Resource Policy 3
FREC 420 Agriculture in Economic Development 3
FREC 429 Community Economic Development 3
FREC 450 Topics in Environmental Law 3

A minimum grade of C- is required in all courses counting toward the minor.

BACHELOR OF SCIENCE - NATURAL RESOURCE MANAGEMENT

HONORS BACHELOR OF SCIENCE - NATURAL RESOURCE MANAGEMENT

See University and College requirements.

MAJOR REQUIREMENTS

Physical Sciences 8
Minimum of eight credits of lab science selected from Chemistry, Physics, Geology, or Physical Science.

Professional Studies
MATH 115 Pre-Calculus (MATH 221* or higher is strongly recommended) 3
COMM 212 Oral Communication in Business 3
ENGL 312 Written Communications in Business 3
One foreign language course 3-4
ECON 151 Introduction to Microeconomics: Prices and Markets 3
ECON 152 Introduction to Macroeconomics: National Economy 3
ECON 300 Intermediate Microeconomic Theory 3
ECON 302 Banking and Monetary Policy 3
ECON 303 Intermediate Macroeconomic Theory 3
Two additional courses offered by the College of Business and Economics at the 300-level or higher 6
(Students interested in an Economics minor should see the College of Business and Economics section in this catalog.)

*Math 221 or higher (with a minimum grade of C+) can be used to substitute for MATH 115 and FREC 471.

ELECTIVES

After required courses are completed, sufficient credits must be taken to meet the minimum credits required for the degree. Only four credits of BHAN 120 activity or four credits of performing Music credit may be counted toward the degree.

CREDITS TO TOTAL A MINIMUM OF 124

HONORS BACHELOR OF SCIENCE - RESOURCE ECONOMICS

The recipient of this degree must complete:

Marketing/International Trade Area:
FREC 316 Economics of Biotechnology and New Technologies 3
FREC 345 Strategic Selling and Buyer Communication 3
FREC 404 Food and Fiber Marketing 3
FREC 410 International Trade and Marketing 3
FREC 471 Futures and Options Markets 3

Seven courses at the 400-level or above with at least two in each of the following three areas: 21-22

1. Theory
FREC 404 Food and Fiber Marketing 3
FREC 410 International Agricultural Trade and Marketing 3
FREC 424 Resource Economics 3
FREC 444 Economics of Environmental Management 3
FREC 471 Futures and Options Markets 3

2. Methods
FREC 408 Research Methods I 3
FREC 409 Research Methods II 3
FREC 430 Establishing and Managing a Food and Agribusiness Enterprise 3
FREC 480 Geographic Information Systems in Natural Resource Management 3

3. Policy
FREC 406 Agriculture and Natural Resource Policy 3
FREC 420 Agriculture in Economic Development 3
FREC 429 Community Economic Development 3
FREC 450 Topics in Environmental Law 3

A maximum of three credits of Independent Study in Food and Resource Economics and a maximum of six credits of Independent Study in all areas may be counted toward the degree.

*Math 221 or higher (with a minimum grade of C+) can be used to substitute for MATH 115 and FREC 471.

ELECTIVES

After required courses are completed, sufficient credits must be taken to meet the minimum credits required for the degree. Only four credits of BHAN 120 activity or four credits of performing Music credit may be counted toward the degree.

CREDITS TO TOTAL A MINIMUM OF 124

HONORS BACHELOR OF SCIENCE - RESOURCE ECONOMICS

The recipient of this degree must complete:
All requirements for the Bachelor of Science: Resource Economics.

All the University requirements for the Honors degree. Courses at the 600-level that satisfy requirements for the major will be considered to be honors courses for the degree.

**BACHELOR OF SCIENCE - RESOURCE ECONOMICS (ENVIRONMENTAL ECONOMICS)**

The requirements for the major in Resource Economics must be met.

In addition, five of the following FREC courses must be taken: 15-16
FREC 406 Agriculture and Natural Resource Policy
FREC 424 Resource Economics-Theory and Policy
FREC 429 Community Economic Development
FREC 444 Economics of Environmental Management
FREC 450 Environmental Law and Policy
FREC 480 Geographic Information Systems in Natural Resource Management

FREC courses required for the Resource Economics major may be used to satisfy requirements for the Environmental Economics concentration.

Two additional courses from the College of Business and Economics as required for the Resource Economics major, plus an additional course (three courses total) must be taken from the following courses: 9
ECON 306 Economic Theory of Politics
ECON 408 Economics of Law
ECON 415 Economic Forecasting
ECON 422 Econometric Methods and Models I
ECON 423 Econometric Methods and Models II
ECON 426 Mathematical Economic Analysis
ECON 433 Economics of the Public Sector
ECON 475 Economics of Natural Resources
ECON 477 Benefit-Cost Analysis

CREDITS TO TOTAL A MINIMUM OF 124

**BACHELOR OF SCIENCE - RESOURCE ECONOMICS (SUSTAINABLE DEVELOPMENT)**

The requirements for the major in Resource Economics must be met.

In addition, the following six courses must be taken: 18
FREC 100 Sustainable Development
FREC 410 International Agricultural Trade and Marketing
FREC 424 Resource Economics
FREC 429 Community Economic Development
FREC 444 Economics of Environmental Management
ENWC 201 Wildlife Conservation and Ecology

In addition, one of the following courses must be taken: 3
ANTH 330 Development and Underdevelopment
ECON 311 Economics of Developing Countries
GEOG 422 Resources, Development, and the Environment
POSC 311 Politics of Developing Nations
SOCI 460 Women in International Development

CREDITS TO TOTAL A MINIMUM OF 124

**MINOR IN RESOURCE ECONOMICS**

The minor in Resource Economics requires 18 credits. Students must take FREC 150 and five of the FREC courses listed below, with a minimum of one course in each area:

1. **Theory**
FREC 404 Food and Fiber Marketing
FREC 410 International Agricultural Trade and Marketing
FREC 424 Resource Economics
FREC 444 Economics and Environmental Management
FREC 471 Futures and Options Markets

2. **Methods**
FREC 408 Research Methods I
FREC 409 Research Methods II
FREC 427 Agribusiness Financial Management
FREC 480 Geographic Information Systems in Natural Resource Management

3. **Policy**
FREC 406 Agriculture and Natural Resource Policy
FREC 420 Agriculture in Economic Development
FREC 429 Community Economic Development
FREC 450 Topics in Environmental Law

A minimum grade of C- is required in all courses counting toward the minor.
BACHELOR OF SCIENCE - STATISTICS

See University and College requirements.

MAJOR REQUIREMENTS

Communications 6
AGRI 212 or COMM 212 3

Any three credit course satisfying the College of Arts and Sciences Second Writing Course requirement. Recommended courses are:

ENGL 301 Expository Writing
ENGL 312 Written Communications in Business
ENGL 410 Technical Writing
ENGL 415 Writing in the Professions

Physical Sciences 8
Minimum of eight credits of lab science selected from Chemistry, Physics, Geology, or Physical Science.

Professional Studies
MATH 210 Discrete Mathematics I 3
MATH 242 Analytic Geometry and Calculus B 4
MATH 243 Analytic Geometry and Calculus C 4
MATH 245 An Introduction to Proof 3
MATH 349 Elementary Linear Algebra 3
MATH 401 Introduction to Real Analysis 3
MATH 426 Introduction to Numerical Analysis and Algorithmic Computation 3
STAT 200 or STAT 408 3
STAT 470 Introduction to Statistical Analysis I 3
STAT 471 Introduction to Statistical Analysis II 3
FREC 409 Research Methods II 3
STAT 409 Regression and Experimental Design 3

One of the following: 3
STAT 611 Regression Analysis
STAT 615 Design and Analysis of Experiments
FREC 615 Advanced Prices and Statistics
STAT 674 Applied Data Base Management

One of the following options (A, B, or C): 6-9
Option A (for students with previous experience with a programming language)
CISC 181 Introduction to Computer Science
and
CISC 220 Data Structures

Option B (for students with no previous experience with a programming language)
CISC 105 General Computer Science
and
CISC 181 Introduction to Computer Science

CISC 220 Data Structures

Option C (for students with no previous experience with a programming language)
CISC 105 General Computer Science
and
CISC 120 Object Oriented Programming in C++
and
CISC 220 Data Structures

Area of application 15
This program requires a fifteen-credit area of application outside Statistics. Students must meet regularly with the advisor to develop it.

Students lacking adequate preparation for MATH 242 should begin with MATH 241. A grade of C- or better is required for all courses under Professional Studies. A maximum of three credits of independent study in Food and Resource Economics and a maximum of six credits in all areas, including Food and Resource Economics, may be counted toward a degree.

ELECTIVES
After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF 124

MINOR IN STATISTICS

A student seeking a minor in statistics must obtain permission from the chairperson or his/her designee in the Department of Food and Resource Economics. Course requirements include STAT 470, STAT 471, STAT 611 Regression Analysis, and FREC 674 cross-listed as STAT 674 Applied Data Base Management. Three additional credit hours in statistics are required above STAT 371. Credit toward the minor will not be given for STAT 475. A minimum grade of C is required in all courses counting toward the minor.

MINOR IN OPERATIONS RESEARCH

The Operations Research Minor is designed to provide students with quantitatively based decision-making skills as well as exposure to a broad variety of applications. A student seeking a minor in Operations Research must obtain permission from the chair or his/her designee in the Department of Food and Resource Economics. 18 credit hours are required for the minor.
Required courses: (6 hours)
ORES 401  An Introduction to Operations Research  
STAT 470  Introduction to Statistical Analysis I  

Remaining four courses are to be selected from the following list:
STAT 471  Introduction to Statistical Analysis II  
FREC 335  Advanced Data Management  
FREC 409  Research Methods II  
FREC 674  Applied Data Base Management  
MATH 389  Graph Theory  
MATH 529  Linear Programming-Applications and Methods  
ECON 415  Economic Forecasting  
BUAD 306  Operations Management  
CIEG 482  Systems Design and Operation  
CIEG 486*  Engineering Management  
BREG 401  Introduction to Quality Control  
BREG 402  Quality Control Applications  
BREG 416*  Project Economic Analysis  
BREG 417  Project Management  

*Only 1 of CIEG 486 and BREG 416 can be counted towards the minor. A minimum grade of C is required in all courses counting toward the minor.

GROUP I: Communications:
Written Communication (ENGL 301-Expository Writing, ENGL 312-Written Communications in Business, ENGL 410-Technical Writing, ENGL 415-Writing in the Professions, UNIV 401/UNIV 402 - Senior Thesis, or any course satisfying the College of Arts and Sciences second writing course requirement.)  
Oral Communication (COMM 212 or FREC 345)  

GROUP II: Statistics:
6 credits from  
FREC 408/FREC 409  Research Methods I and II  
or  
MATH 201/MATH 202  Introduction to Statistics I and II  

GROUP III: Ecosystems:
6 credits from the following:  
BISC 302  General Ecology  
ENWC 325  Wildlife Management  
ENWC 411  Insect Pest Management  
ENWC 416  Wildlife Habitat Management  
ENWC 419  Biological Control  
ENWC 435  Population Ecology  
ENWC 456  Conservation Biology  
PLSC 305  Soil Fertility and Plant Nutrition  

GROUP IV: Plants and Animals:
6 credits from the following:  
BISC 300  Introduction to Microbiology  
ENWC 205  Elements of Entomology  
ENWC 215  Entomology Laboratory  
ENWC 406  Insect Identification - Taxonomy  
ENWC 418  Ornithology  
ENWC 425  Mammalogy  
ENWC 426  Aquatic Insects  
PLSC 212  Woody Landscape Plants  
PLSC 214  Indigenous Woody Plants of the Eastern U.S.  
PLSC 303  Introductory Plant Pathology  
PLSC 404  Plant Taxonomy  

GROUP V: Land and Water Management:
6 credits from the following:  
BREG 103  Land and Water Management
BACHELOR OF SCIENCE - ENVIRONMENTAL SOIL SCIENCE

BREG 113 Introduction to Land Surveying
BREG 328 Wastewater Treatment Systems
GEOL 107 General Geology
GEOG 101 Physical Geography: Climatic Processes
GEOG 106 Physical Geography: Land Surface Processes
GEOG 210 Economic Geography
GEOG 220 Meteorology
GEOG 320 Water and Society

GROUP VI: Natural Resource/Environmental Policy:
9 credits from the following (including a minimum of three credits from FREC):
ECON 311 Economics of Developing Countries
ECON 332 Economics of Government Spending and Taxation
ECON 360 Government and Business
ENWC 413 Wildlife Policy and Administration
FREC 406 Agriculture and Natural Resource Policy
FREC 429 Community Economic Development
POSC 220 Introduction to Public Policy

GROUP VII: Ethics:
3 credits from the following:
PHIL 200 Business Ethics
PHIL 202 Contemporary Moral Problems
PHIL 203 Ethics
PHIL 340 Cross Cultural Environmental Ethics
PHIL 448 Environmental Ethics

ELECTIVES
After required courses are completed, sufficient credits must be taken to meet the minimum credits required for the degree. Only four credits of BHAN 120 activity or four credits of performing Music credit may be counted toward the degree.

CREDITS TO TOTAL A MINIMUM OF 124

HONORS BACHELOR OF SCIENCE - NATURAL RESOURCE MANAGEMENT

The recipient of this degree must complete:

All requirements for the Bachelor of Science: Natural Resource Management.
All of the University’s requirements for the Honors Baccalaureate degree. Courses at the 600-level that satisfy requirements in the major will be considered to be Honors courses for the degree.

Plant and Soil Sciences
Telephone: (302) 831-2531
E-mail: dfrey@udel.edu
http://ag.udel.edu
Faculty Listing: http://ag.udel.edu/plsc/faculty/facultyStaff.htm

Plant and Soil Sciences includes disciplines of study that apply chemical, biological, and physical principles toward insuring adequate food supplies in a safe and aesthetic environment. Faculty in the department have teaching and research programs in plant molecular biology, botany, anatomy, physiology, taxonomy, genetics, plant breeding, cell and tissue culture, pathology, ornamental horticulture, landscape design, crop and vegetable science, soil chemistry, soil management, soil physics, and soil microbiology. Undergraduate students often are involved in some aspect of these research programs, which strengthens and broadens their understanding of science.

Students can major in Environmental Soil Science, Plant Science, or Landscape Horticulture and Design with a concentration in Landscape Horticulture, Landscape Design or Public Horticulture. Minors are offered in Environmental Soil Science and Landscape Horticulture and Design. The department also co-offers the interdisciplinary majors Natural Resource Management and Plant Protection.

BACHELOR OF SCIENCE - ENVIRONMENTAL SOIL SCIENCE

See University and College requirements.

MAJOR REQUIREMENTS
CHEM 101/CHEM 102
or
CHEM 103/CHEM 104
General Chemistry I and II 8
CHEM 213 Organic Chemistry 4
CHEM 220/CHEM 221 Quantitative Analysis with Lab 4
ENGL 410 Technical Writing 3
GEOG 220 Meteorology 3
GEOL 107 General Geology I 4
MATH 221 Calculus I 3
PHYS 201 Introductory Physics I 4
PLSC 101 Botany I 4
PLSC 151 Introduction to Crop Science 3
PLSC 204 Introduction to Soil Science 3
PLSC 205 Introduction to Soil Science Lab 1
PLSC 305 Soil Fertility and Plant
MINOR IN ENVIRONMENTAL SOIL SCIENCE

The minor in Environmental Soil Science is open to students in any major and requires a total of 17-18 credits, as follows:

- PLSC 204 Introduction to Soil Science 3
- PLSC 205 Introduction to Soil Science Lab 1
- PLSC 305 Soil Fertility and Plant Nutrition 4

Three of the following courses: 9-10
- PLSC 151 Introduction to Crop Science
- PLSC 319 Environmental Soil Microbiology
- PLSC 401 Agronomic Crop Science
- PLSC 603 Soil Physics
- PLSC 608 Environmental Soil Chemistry

### ELECTIVES

After required courses are completed, sufficient credits must be taken to meet the minimum credits required for the degree. May include the following suggested courses or other electives.

- BISC 321 Environmental Biology
- FREC 444 Economics of Environmental Management
- GEOG 235 Conservation of Natural Resources
- GEOL 415 General Geomorphology
- GEOL 421 Environmental and Applied Geology
- GEOL 428 Hydrogeology
- PLSC 303 Introductory Plant Pathology
- PLSC 603 Soil Physics
- PLSC 607 Plant and Soil Water Relations
- PLSC 619 Soil Microbiology
- POSC 350 Politics and the Environment

Only two credits of BHAN 120 activity or performing music credit may be counted toward the degree.

### CREDITS TO TOTAL A MINIMUM OF 124

HONORS BACHELOR OF SCIENCE - ENVIRONMENTAL SOIL SCIENCE

The recipient of this degree must complete:

- All requirements for the Bachelor of Science: Environmental Soil Science.
- All of the University's requirements for the Honors Baccalaureate degree. Courses at the 600-level that satisfy requirements in the major will be considered to be Honors courses for the degree.

### LANDSCAPE HORTICULTURE AND DESIGN

See University and College Requirements.

MAJOR REQUIREMENTS

- CHEM 101 General Chemistry 4
- MATH 114 or higher College Mathematics and Statistics 3
- PLSC 101 Botany I 4
- PLSC 133 Ornamental Horticulture 3
- PLSC 171 New Student Colloquium 1
- PLSC 201 Botany II 4
- PLSC 204 Introduction to Soil Science 3
- PLSC 205 Introduction to Soil Science Lab 1
- PLSC 211 Herbaceous Landscape Plants 3
- PLSC 212 Woody Landscape Plants 4
- PLSC 214 Indigenous Woody Plants of Eastern US 4

In addition to completing the above requirements, one of the following concentrations must be completed:

- Landscape Horticulture, Landscape Design, Public Horticulture

### Landscape Horticulture Concentration

In addition to fulfilling the Major requirements, the following requirements also must be completed:

- Concentration Requirements
  - BREG 113 Introduction to Surveying 3
  - ENWC 201 Wildlife Conservation and Ecology 3
  - ENWC 205 Elements of Entomology 3
  - FREC 150 Economics of Ag and Natural Resources 3
Students will be admitted to the concentration upon successful completion of 45 credit hours of undergraduate study (cumulative grade point average of 2.5 or higher) and submission of an acceptable portfolio of their own work. The Landscape Design Concentration candidate is required to attend their portfolio review. No student will be admitted to the concentration without a successful portfolio review.

Prior to review, a candidate must have successfully completed Landscape and Field Sketching (PLSC 103), a course that will help students prepare a portfolio for the review process; History of Landscape Design (PLSC 202); Basic Landscape Design (PLSC 232); and one of the ART courses listed below. Students should submit 15 to 20 images or examples of their creative work, along with a writing sample, that will offer insight into their creative problem solving skills and experiences in visual arts.

Examples of projects acceptable for the portfolio include (but are not limited to) figure and landscape drawing and/or painting, ceramics, photography, digital design work and written projects. A minimum of one project from each of the required courses must be included in the portfolio.

The candidate's portfolio will be reviewed by a committee comprised of PLSC faculty and professionals in the landscape design field. Students will be reviewed on individual merit and not compared to other applicants. For each review, the portfolios are ranked into two categories: admissible and not admissible. If a student receives a “not admissible” portfolio review, academic advising is provided to help the student choose an alternate concentration based on the talents and strengths of the student.
Three credits from the following Art courses:
ART 129  Design in Visual Arts
ART 130  Drawing I: Tools and Techniques
ART 138  Elementary Drawing and Painting I

Three credits from the following business-related courses:
ACCT 207  Accounting
ACCT 352  Law and Social Issues in Business
ECON 151  Introduction to Microeconomics
ECON 152  Introduction to Macroeconomics
FREC 201  Records and Accounts
FREC 212  Food Retailing and Product Management
FREC 302  Management of Agribusiness Firms
FREC 404  Food and Fiber Marketing
FREC 406  Agricultural and Natural Resource Policy
FREC 430  Establishing and Managing a Food and Agribusiness Enterprise
PHIL 200  Business Ethics
PLSC 403  Nursery and Garden Center Management
POSC 220  Introduction to Public Policy
POSC 301  State and Local Government

ELECTIVES
After required courses are completed, sufficient credits must be taken to meet the minimum credits required for the degree. Only two credits of BHAN 120 activity or performing music credit may be counted toward the degree.

CREDITS TO TOTAL A MINIMUM OF 124

Public Horticulture Concentration
In addition to fulfilling the Major requirements, the following requirements also must be completed:

Concentration Requirements:
ENWC 205  Elements of Entomology 3
FREC 150  Economics of Ag and Natural Resources 3
LEAD 100  Leadership, Integrity, and Change 3
LEAD 404  Leadership in Organizations 3
PLSC 202  History of Landscape Design 3
PLSC 253  Triad Internship 3
PLSC 313  Turf Establishment and Maintenance 4
PLSC 433  Public Garden Management 3
PLSC 453  Capstone Public Horticulture Practicum 3
PLSC 465  Seminar: Public Horticulture 1

Three credits from the following Communication courses:
COMM 212  Oral Communication in Business
COMM 350  Public Speaking
ENGL 312  Written Communications in Business

Six credits from the following Business courses:
ACCT 207  Accounting
ACCT 352  Law and Social Issues in Business
FREC 201  Records and Accounts
FREC 406  Agricultural and Natural Resource Policy
PHIL 200  Business Ethics
POSC 220  Introduction to Public Policy
POSC 301  State and Local Government
PLSC 403  Nursery and Garden Center Management

Three credits from the following Related Issues in Management courses:
UAPP 602  Intro. to Comprehensive Planning
UAPP 616  Volunteer Management
UAPP 621  Conflict Resolution
UAPP 642  Strategic Planning: Public & Nonprofits
UAPP 644  Grantsmanship and Proposal Writing
UAPP 670  Fund Dev.: Fundraising from Individuals
UAPP 671  Fund Dev.: Fundraising from Institutions

ELECTIVES
After required courses are completed, sufficient credits must be taken to meet the minimum credits required for the degree. Only two credits of BHAN 120 activity or performing music credit may be counted toward the degree.

CREDITS TO TOTAL A MINIMUM OF 124

HONORS BACHELOR OF SCIENCE - LANDSCAPE HORTICULTURE AND DESIGN

The recipient of this degree must complete:

All requirements for the Bachelor of Science: Landscape Horticulture and Design.

All of the University’s requirements for the Honors Baccalaureate degree. Courses at the 600-level that satisfy requirements in the major will be considered to be Honors courses for the degree.

MINOR IN LANDSCAPE HORTICULTURE AND DESIGN

The minor in Landscape Horticulture and Design is open to students in any major and requires a total of 17-18 credits, as follows:
PLSC 101  Botany I 4
PLSC 133  Ornamental Horticulture 3
PLSC 211  Herbaceous Landscape Plants 3
BAChelor of science - plant science/ bachelor of science - plant protection

PLSC 212  Woody Landscape Plants  4
One of the following five courses:  3-4
PLSC 204  Introduction to Soil Science
PLSC 232  Landscape Design
PLSC 313  Turf Establishment and Maintenance
PLSC 331  Landscape Construction
PLSC 422  Plant Propagation

Bachelor of science - plant science

See University and college requirements.

MAJOR REQUIREMENTS

Mathematics
Mathematics course  3

Professional Studies
CHEM 101/CHEM 102  General Chemistry I and II
or
CHEM 103/CHEM 104  General Chemistry I and II  8
CHEM 213  Elementary Organic Chemistry  4

One of the following:  3-4
PHYS 201  Introduction to Physics
GEOL 107  General Geology
CHEM 214  Elementary Biochemistry
GEOG 255  Applied Climatology

PLSC 101  Botany I  4
PLSC 201  Botany II  4
PLSC 204  Introduction to Soil Science  3
PLSC 205  Introduction to Soil Science Lab  1
PLSC 300  Principles of Animal and Plant Genetics  3
PLSC 303  Introductory Plant Pathology  4
PLSC 305  Soil Fertility and Plant Nutrition  4
PLSC 410  Introduction to Plant Physiology  3

ELECTIVES
After required courses are completed, sufficient credits must be taken to meet the minimum credits required for the degree. Only two credits of BHAN 120 activity or two credits of performing music credit may be counted toward the degree.

CREDITS TO TOTAL A MINIMUM OF 124

Honors bachelor of science - plant science

The recipient of this degree must complete:
All requirements for the Bachelor of Science: Plant Science.

All of the University’s requirements for the Honors Baccalaureate degree. Courses at the 600-level that satisfy requirements in the major will be considered to be Honors courses for the degree.

Bachelor of science - plant protection

Telephone: (302) 831-2526 or (302) 831-2531
email: jhough@udel.edu or tomevans@udel.edu
http://ag.udel.edu

Because of mutual interests and problems in the field of pest management, the Department of Entomology and Wildlife Ecology and the Department of Plant and Soil Sciences offer a joint major, Plant Protection. In a world of expanding human population and increasing pressure on supplies of food and fiber, studies in plant pathology, entomology, and weed science can lead to a challenging and satisfying career that contributes to human welfare. This combined major allows students to study applied and basic aspects of insects, plant diseases, and weeds. Courses and field experience emphasize recognition of pests and their symptoms and strategies for pest management compatible with agriculture and the environment.

See University and College requirements.

MAJOR REQUIREMENTS

FREC 135  Introduction to Data Analysis  3
MATH 115  Pre-Calculus or higher level  3
BISC 207/BISC 208  Introductory Biology I and II  8

CHEM 101/CHEM 102  General Chemistry I and II
or
CHEM 103/CHEM 104  General Chemistry I and II  8
CHEM 213  Elementary Organic Chemistry  4

One of the following:

PHYS 201  Introduction to Physics
GEOL 107  General Geology
CHEM 214  Elementary Biochemistry
GEOG 255  Applied Climatology

PLSC 101  Botany I  4
PLSC 201  Botany II  4
PLSC 204  Introduction to Soil Science  3
PLSC 205  Introduction to Soil Science Lab  1
PLSC 300  Principles of Animal and Plant Genetics  3
PLSC 303  Introductory Plant Pathology  4
PLSC 305  Soil Fertility and Plant Nutrition  4
PLSC 410  Introduction to Plant Physiology  3

ELECTIVES
After required courses are completed, sufficient credits must be taken to meet the minimum credits required for the degree. Only two credits of BHAN 120 activity or two credits of performing music credit may be counted toward the degree.

CREDITS TO TOTAL A MINIMUM OF 124

ELECTIVES
Beyond required courses, sufficient credits must be taken to meet the minimum credits required for the degree. Courses in agriculture,
biology, statistics, and the physical sciences and additional writing courses are recommended. Only two credits of BHAN 120 or performing music may be counted toward the degree.

The choice of department in which to complete the remaining credits provides the student with the opportunity to emphasize applied entomology, plant pathology, or weed science in his or her program. Students should consult with their advisor on course selection to choose electives that will provide an education best suited to their goals.

CREDITS TO TOTAL A MINIMUM OF 124

The Associate In Science Degree

The College of Agriculture and Natural Resources offers a two-year Associate in Science (AS) degree in Newark. This degree is ideal for students interested in agriculture who desire to spend only two years working toward a degree or who are unsure of their plans for higher education. Admission requirements for the associate degree are the same as for the baccalaureate degree.

The Associate in Science offers an extremely flexible curriculum. The student must complete a minimum of 62 credit hours, with at least 30 of the credits earned within at least four of the five departments in the college. A minimum of 32 credits for the degree must be earned at the University of Delaware. In addition, the recipient must have a minimum GPA of 2.0. A candidate must apply for the associate degree during the academic term in which all requirements for the degree are to be completed and must, at the time of application, be enrolled in the college.

Although not recommended, a student could take all 62 credits in agricultural courses. A better approach would be for the student to take some course work in the areas of physical science, social science, English, and mathematics, along with his or her courses in agriculture. This approach would allow the student to more easily complete a BS degree program at a later date.
preregistration for the spring and fall semesters. All other students are strongly encouraged to meet at least once each semester with their academic advisors.

Preprofessional advisement committees are available to advise students who plan to study dentistry, law, medicine, social work, or veterinary medicine. Dean's Office personnel will be glad to direct students to appropriate faculty members.

General Degree Requirements Information

Pass/Fail Grade Option. Courses to fulfill degree requirements may not be taken pass/fail unless they are offered only on a pass/fail basis. Students may elect to take one course per semester pass/fail. A total of no more than 24 credits may be taken pass/fail for a Bachelor’s degree and no more than 12 credits for an Associate's degree. For more detailed information on the pass/fail grade option, see the chapter on Academic Regulations.

Physical Education. A maximum of two credits of HESC 120 may be counted toward the required minimum credits of all degrees in the college.

Duplicate Credits. Credits may be counted only once toward a degree. Courses repeated to improve a passing grade may not be counted a second time toward the minimum total credit hours required. Certain courses offered in a sequence will not be counted toward a degree if taken in reverse order of difficulty, e.g., FREN 105 course would not be counted if taken after FREN 107; similarly, MATH 115 would not be acceptable if taken after MATH 221.

Certain other courses have sufficient overlap of content, although taught at different degrees of difficulty, that credit would not be offered for both courses regardless of the order taken. For instance, credit will be offered only once for the following pairs of courses: MATH 221 and MATH 241, MATH 222 and MATH 242.

Course of Study Options

Single Major. A departmental major consists of at least 30 credits with the specified and elective courses determined by the individual department.

Several departments, e.g., English and History, have a number of internal options or specializations. To round out the departmental major, students may be required to take a
designated number of credits of related work determined in consultation with a faculty advisor.

The faculty of the college have ruled that for the Bachelor of Arts degree, a maximum of 45 credits with the same departmental prefix may be applied to the total number of credits required for the degree. A cross-listed course will be considered a part of the 45 credit total, regardless of which prefix a student used to register for the course.

Students who choose a single major will normally have a number of “free elective” credits. Considerable thought should be given to the best use of these elective credits.

Double Major. This involves fulfilling the major requirements of two Bachelor of Arts or two Bachelor of Science majors. The advantage of a double major is that the student is able to develop and demonstrate strength in each area covered in the undergraduate program. Admission to double major status requires the approval of both departments and the dean(s) of the college(s). The minimum grade necessary in all courses required for the double major is the same as that needed for a single major in that degree program.

Interdepartmental Major. Students whose goals and interests heavily involve materials from two departments but do not extend to all aspects of each subject area may work out and submit for the approval of both departments and the dean of the college an interdepartmental proposal. More detailed instructions on the Interdepartmental Major are available in the Dean's Office, but basically this major involves a minimum of 21 credits from each department with another nine credits that may be distributed in a number of ways. Examples of departments frequently combined in such programs are Communication and English or Political Science and Economics. With the approval of the other college or department, one area of the interdepartmental major may be outside the College of Arts and Sciences. The interdepartmental major always leads to the Bachelor of Arts degree.

A minimum grade of C- is normally required in all courses constituting the 21 credits of each area, and a C average is necessary for all the 51 credits in the interdepartmental major.

Area Study. Opportunity is provided for students interested in pursuing a broader field of study such as Comparative Literature, International Relations or Latin American Studies. Students majoring in International Relations are required to take 51 credits distributed among appropriate departments. Thirty of the 51 credits must be earned with at least a C- grade, and a C average is required for the total of the 51 credits.

Minors. In addition to the major, students may also elect to complete one or two minor programs. Departments offering a minor set their own requirements, but these always include at least 15 credits of course work. A minimum grade of C- is required in all courses for a minor. (See the Synopsis of minors.)

BACHELOR OF ARTS

This degree, offered by all departments of the College of Arts and Sciences is awarded to those students who follow a broad course of study and is designed to provide a liberal education. For this degree, students must complete a minimum of 124 credits composed of requirements for general education, college skills and breadth requirements, required courses in a major, and elective courses. A grade of C- is required in all major courses. No more than 45 credits with the same departmental prefix (including cross-listed courses) may be counted toward the total required for the degree.

CORE CURRICULUM:
CREDITS

UNIVERSITY REQUIREMENTS

ENGL 110 Critical Reading and Writing (minimum grade C-) 3

ENGL 110 will be taken by all students as freshmen. ENGL 110 must be completed by the time a student has earned 60 credits. Students who transfer into the College of Arts and Sciences with 45 credits or more must complete this requirement within two semesters. Transfer students who have completed college-level courses in research writing should check the English Department website to see if they qualify for exemption: http://www.english.udel.edu/transfer.htm.

First Year Experience (FYE) 0-4

University Breadth Requirement

Up to 3 credits from each of the University Breadth Requirement categories may be used to simultaneously satisfy the College of Arts and Sciences Breadth Requirements. 12
Completion of the intermediate-level course (107 or 112 or 214) in an ancient or modern language. The number of credits needed and initial placement will depend on the number of years of high school study of foreign language. Students with four or more years of high school work in a single foreign language, or who have gained proficiency in a foreign language by other means, may attempt to fulfill the requirement in that language by taking an exemption examination through the Foreign Languages and Literatures Department.

BREADTH

COLLEGE OF ARTS AND SCIENCES BREADTH REQUIREMENTS: (minimum grade C-)
These Breadth requirements apply to all Bachelor of Arts degrees. The College Breadth requirements are in addition to the University Breadth requirement. Up to 3 credits from each of the University Breadth Requirement categories may be used to simultaneously satisfy these College of Arts and Sciences Breadth Requirements.

Group A Creative Arts and Humanities 9
These courses provide students with an understanding and appreciation of the visual and performing arts, of aesthetic forms, designs, or craftsmanship, or of literary, philosophical, and intellectual traditions. Courses may focus on a single aesthetic form or intellectual tradition, or cross-cultural comparisons. Nine credits of courses representing at least two departments or appropriate instructional units.

Group B History and Cultural Change 9
These courses provide students with an understanding of the sources and forces of historical changes in ideas, beliefs, institutions, and cultures. Courses may address social, cultural, intellectual, economic, technological, artistic, scientific, and political development, changes in a discipline, or globalization and its effects. Nine credits of courses representing at least two departments or appropriate instructional units.

Group C Social and Behavioral Sciences 9
These courses provide students with an understanding of the behavior of individuals and social groups in the context of their human and natural environments. Courses emphasize the empirical findings, applications, and methods of the social and behavioral sciences. Nine credits of courses representing at least two departments or appropriate instructional units.
Group D Mathematics, Natural Sciences and Technology 10
These courses provide students with an understanding of fundamental and/or applied concepts and phenomena from mathematics, logic, natural or physical sciences, and technology including quantitative reasoning and methods used to approach and solve problems. Ten credits of courses representing at least two departments or appropriate instructional units and including a minimum of one course with an associated laboratory. The laboratory component provides exposure to the working methods of science.

If the grade earned is sufficient, a course may be applied toward more than one requirement (e.g., breadth and major requirements), but the credits are counted only once toward the total credits for graduation. If all but one course in a group has been taken in one department or program, a course cross-listed with that program will not satisfy the distribution requirement.

Bachelor Of Science, Bachelor Of Fine Arts, Bachelor Of Music

Students whose goals indicate a high level of concentration or specialization may elect to fulfill requirements for the Bachelor of Science degree offered in a number of majors. Similar degrees are the Bachelor of Fine Arts, with a heavy concentration on studio work, and the Bachelor of Music, with its own areas of specialization. Curricular details for all of these degree programs can be found in the sections devoted to the individual departments.

Bachelor Of Arts In Liberal Studies

An option that offers a great deal of flexibility is the Bachelor of Arts in Liberal Studies (BALS). The degree is designed for students who have need and justification for developing their own undergraduate major program within the 124-credit minimum. For requirements, see the Liberal Studies section.

Associate Degrees

The nonterminal degrees of Associate in Arts (AA) and Associate in Science (A.S.) may be awarded upon application; students must apply before completing 75 credit hours. Information regarding admission requirements and eligibility for the associate degree programs may be found in the Undergraduate Admissions section of this catalog. Academic advisement is coordinated by the College of Arts and Sciences Undergraduate Academic Services office at 219 Mitchell Hall (302-831-3020).

The Associate in Arts represents completion of the first half of a Bachelor of Arts program; the Associate in Science, the first half of a Bachelor of Science program. Specific requirements follow:

Associate In Arts Requirements

If any of the course requirements are satisfied through proficiency tests or exams, elective credits must be substituted to make up 60 hours. Courses taken to fulfill specific group, math, or language proficiency or multicultural requirements must be taken for a regular grade, not pass/fail.

CURRICULUM CREDITS

UNIVERSITY REQUIREMENTS
Writing
ENGL 110 (minimum grade C-) 3
or
Exemption 0
First Year Experience (FYE) 0-4

University Breadth Requirement
Up to 3 credits from each of the University Breadth Requirement categories may be used to simultaneously satisfy the College of Arts and Sciences Breadth Requirements. 12

Multi-cultural Courses (MCC) 3

SKILL REQUIREMENTS
Mathematics (one of the following) 0-4
MATH 113 or
MATH 127 or
MATH 114 or
MATH 115 or

Successful completion of any mathematics course at or above the 200-level except MATH 201, MATH 202, MATH 250, MATH 251, MATH 252, MATH 253, MATH 266, or MATH 450.

or
Proficiency Test

Foreign Language (one of the following) 0-4
Elementary Level or
Proficiency Test (0 credits awarded)

COLLEGE OF ARTS AND SCIENCES BREADTH REQUIREMENTS

Courses in each of the groups A-D must be taken in at least two departments. If all but one course
in a group has been taken in one department or program, a course cross-listed with that department or program will not satisfy the distribution requirement.

Group A. Creative Arts and Humanities
These courses provide students with an understanding and appreciation of the visual and performing arts, of aesthetic forms, designs, or craftsmanship, or of literary, philosophical, and intellectual traditions. Courses may focus on a single aesthetic form or intellectual tradition, or cross-cultural comparisons. 9

Group B. History and Cultural Change
These courses provide students with an understanding of the sources and forces of historical changes in ideas, beliefs, institutions, and cultures. Courses may address social, cultural, intellectual, economic, technological, artistic, scientific, and political development, changes in a discipline, or globalization and its effects. 9

Group C. Social and Behavioral Sciences
These courses provide students with an understanding of the behavior of individuals and social groups in the context of their human and natural environments. Courses emphasize the empirical findings, applications, and methods of the social and behavioral sciences. 9

Group D. Mathematics, Natural Sciences and Technology
These courses provide students with an understanding of fundamental and/or applied concepts and phenomena from mathematics, logic, natural or physical sciences, and technology including quantitative reasoning and methods used to approach and solve problems. Ten credits of courses representing at least two departments or appropriate instructional units and including a minimum of one course with an associated laboratory. 10

ELECTIVES
After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree. Students may opt to take one free elective course per semester pass/fail, but the total number of credits taken on a pass/fail basis may not exceed 12, excluding courses that are graded pass/fail only. Courses numbered below 100-level do not count toward a degree.

CREDITS TO TOTAL A MINIMUM OF 60

Associate in Science Requirements

If any of the course requirements are satisfied through proficiency tests or exams, elective credits must be substituted to make up 60 hours. Courses taken to fulfill specific group, math, or language proficiency or multicultural requirements must be taken for a regular grade, not pass/fail.

UNIVERSITY REQUIREMENTS

Writing

ENGL 110  (minimum grade C-)  3
or
Exemption 0

First Year Experience (FYE)  0-4

University Breadth Requirements  12
Up to 3 credits from each of the University Breadth Requirement categories may be used to simultaneously satisfy the College of Arts and Sciences Breadth Requirements.

Multi-cultural Courses (MCC)  3

SKILL REQUIREMENTS

Mathematics (one of the following)  6-8
MATH 221-222
or
MATH 241-242

Foreign Language (one of the following)  0-4
Required if there is a language requirement for the corresponding Bachelor of Science degree.
One of the following:
Elementary Level
or
Proficiency Test (0 credits awarded)

COLLEGE OF ARTS AND SCIENCES BREADTH REQUIREMENTS

Courses in each of the groups A-D must be taken in at least two departments. If all but one course in a group has been taken in one department or program, a course cross-listed with that department or program will not satisfy the distribution requirement.

Group A. Creative Arts and Humanities  9
Group B. History and Cultural Change  9
Group C. Social and Behavioral Sciences  9
Group D. Mathematics, Natural Sciences and Technology  12

At least one course in Group D must be an approved laboratory science course.
ELECTIVES
After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree. Students may opt to take one free elective course per semester pass/fail, but the total number of credits taken on a pass/fail basis may not exceed 12, excluding courses that are graded pass/fail only. Courses numbered below 100-level do not count toward a degree.

CREDITS TO TOTAL A MINIMUM OF 60

Dean's Scholar Program
The Dean's Scholar Program exists to serve the needs of students whose clearly defined educational goals cannot be effectively achieved by pursuing the standard curricula for all existing majors, minors, and interdepartmental majors sponsored by the University. Driven by an overarching passion or curiosity that transcends typical disciplinary bounds and curricula, a Dean's Scholar's intellectual interests may lead to broad interdisciplinary explorations of an issue or to more intense, in-depth studies in a single field at a level akin to graduate work. In consultation with faculty advisors and the Program Director, Dean's Scholars design an imaginative and rigorous individual plan of study to meet the total credit hours required for graduation. Dean's Scholars in Arts and Sciences and in Agriculture and Natural Resources may qualify for Honors Degrees. Contact the Program Director or go to: www.udel.edu/deansscholar/ for more information and the application.

English Language Institute (ELI)
The University of Delaware English Language Institute (ELI) is an academic unit of the College of Arts and Sciences. The ELI provides English instruction to international students and business professionals who wish to improve their language skills for university study or for career enrichment. The ELI's intensive daytime program includes four tracks of study: business, academic, American culture, and general English classes. ELI services include university and college placement, housing, host family programs, language partners, and cultural activities.

Special offerings include a legal English program, a Pre-MBA program, an executive English program, and an EFL teacher training program. The Institute also provides individual tutoring, computer assisted learning, a testing preparation course focusing on skills and strategies for language proficiency sections of such tests as the TOEFL and the GMAT, and community evening classes. The ELI manages the ITA program, which provides testing and training for the University of Delaware International Teaching Assistants. The ELI administers the University's Master's Degree program in Teaching English as a Second Language through the School of Education. Graduate students in the program include both Americans seeking certification in Delaware and international students planning to return home to teach.

The ELI intensive language program is fully accredited by the Commission on English Program Accreditation, and is ranked among the top English as a Second Language (ESL) programs in the United States.

For more information, please see www.udel.edu/eli.

Liberal Arts/Engineering
These five-year programs combine work in liberal arts and engineering and lead to the simultaneous awarding of a Bachelor’s degree in Arts and Sciences and a Bachelor’s degree in the appropriate engineering field. For complete details on these programs, see the Arts and Sciences-Engineering Curricula section.

Teacher Education Programs
The College of Arts and Sciences offers teacher education programs for students who wish to prepare themselves to be certified teachers in Delaware or in other states and the overseas dependency schools. For secondary certification (high school, junior high school, middle school), programs are offered in biology, chemistry, English, foreign languages (French, German, Italian, Latin, Spanish), mathematics, physics, and social studies (anthropology, geography, history, political science, psychology, and sociology). For K-12 certification, teacher education programs are offered in music (instrumental, keyboard, voice) and Foreign Languages.

Each degree program in teacher education requires a certain minimum GPA for enrollment in EDUC 400, StudentTeaching, a course required for the degree. The appropriate teacher education program advisor should be consulted for the exact GPA requirements and other policies concerning qualifications for student teaching.
preprofessional curriculum requirements are met. The Health Sciences Advisory and Evaluation Committee coordinates advisory services for all students preparing for admission to health-related professional schools. Call (302) 831-2282 for information or consult the Preprofessional Programs website at: www.udel.edu/Biology/premed/home.html

The University participates in a cooperative medical education program with the Medical Center of Delaware and the Jefferson Medical College of Philadelphia, sponsored by the Delaware Institute for Medical Education and Research. Under the terms of this program, up to twenty students who are Delaware residents will be accepted for admission to Jefferson Medical College. A portion of the clinical training of these students takes place in the Medical Center of Delaware. Information on application to this program may be obtained from the office of the Associate Chair of the Department of Biological Sciences.

The University of Delaware and the Thomas Jefferson University College of Health Professions sponsor a joint program leading to a Bachelor of Science degree at the University of Delaware and a graduate degree in pharmacy at Thomas Jefferson University.

The University of Delaware also participates with Jefferson Medical College in the Medical Scholars Program which permits selected students to begin their medical education while undergraduates at the University.

Medical Scholars Program

This unique premedical program is jointly sponsored by the University of Delaware and the Jefferson Medical College in Philadelphia and serves to prepare students to deal with society’s changing health care needs. Providing for a balanced education in liberal arts, sciences and professional studies, the curriculum includes traditional courses in science and mathematics as well as in the humanities, ethics, social sciences, economics, political sciences and health policy. Problem-based instruction, group discussions and practica in clinical settings are unique aspects of the program. Medical Scholars work toward a Bachelor of Arts in Liberal Studies degree and receive conditional acceptance to the Jefferson Medical College as early as their sophomore year at Delaware after completing at least a year in an interest group.

For more information contact the faculty
Courses Approved for Second Writing Requirement

NOTE: The following is a list of courses eligible to be taught as Arts and Sciences Second Writing courses. These courses are not, however, always taught to fulfill the second writing requirement. Only the specific sections designated within each academic term will satisfy the second writing requirement. Please check the UDSIS registration system to ascertain whether a particular course section will be offered as as second writing course. Only a limited number of courses, when transferred from another institution, will satisfy the second writing requirement.

Anthropology (ANTH)
ANTH 486 Tutorial in Social and Cultural Anthropology
ANTH 487 Tutorial in Archaeology
ANTH 488 Tutorial in Physical Anthropology

Art (ART)
ART 315 Issues in Contemporary Art

Art History (ARTH)
ARTH 213 Art of the Northern Renaissance
ARTH 250 Rulers’ Images: Augustus to Washington
ARTH 301 Research and Methodology in Art History
ARTH 302 Prints and Society
ARTH 310 The Role of the Artist in Society
ARTH 311 Renaissance Women, Society and Art
ARTH 402 Undergraduate Seminar: History of Art
ARTH 405 Seminar in Greek and Roman Art
ARTH 406 Seminar in Medieval Art
ARTH 408 Seminar in Northern Renaissance Art
ARTH 413 Seminar in Renaissance Art and Architecture
ARTH 417 Seminar in Northern Baroque Art
ARTH 423 Seminar in Twentieth Century Art
ARTH 429 Seminar in Modern Architecture
ARTH 431 Seminar in American Architecture
ARTH 435 Seminar in American Art
ARTH 445 Seminar in East Asian Art
ARTH 456 Seminar in Contemporary Architecture

Arts and Sciences (ARSC)
ARSC 316 Honors: Peer Tutoring/Advanced Composition (cross-listed with ENGL 316)

Biology (BISC)
BISC 452 Undergraduate Thesis II
BISC 498 Topics in Biology

Black American Studies (BAMS)
BAMS 415 Race, Class and Gender (cross-listed with SOCI 415 and WOMS 415)
BAMS 416 Psychological Perspectives; Black American
BAMS 418 Race, Gender and Poverty (cross-listed with SOCI 418)

Chemistry (CHEM)
CHEM 410 History of Chemistry

Communication (COMM)
COMM 311 Public Relations Writing
COMM 329 Broadcast Newswriting
COMM 418 Topics in Mass Communication
COMM 423 Comm/Advertising/The Consumer
COMM 424 Media Message Analysis

Cognitive Science (CGSC)
CGSC 420 Research Methods in Cognitive Science
CGSC 485 Seminar in Cognitive Science

Criminal Justice (CRJU)
CRJU 312 History of Crime and Criminal Justice (cross-listed with HIST 312)
CRJU 415 Sex Crimes and Punishments
CRJU 428 Corporate Crime (cross-listed with SOCI 428)
CRJU 452 Drugs and the Criminal Justice System (cross-listed with SOCI 452)
CRJU 456 Lawyers and Society (cross-listed with SOCI 456)
CRJU 460 Criminal Justice Policy
CRJU 489 Crime Victims and Victims’ Rights

English (ENGL)
ENGL 280 Approaches to Literature
ENGL 301 Expository Writing
ENGL 302 Advanced Composition
ENGL 304 Poetry Writing
ENGL 305 Fiction Writing
ENGL 306 Topics in Writing
ENGL 307 News Writing and Editing
ENGL 309 Feature and Magazine Writing
ENGL 312 Written Communications in Business
ENGL 316 Honors: Peer Tutoring/Advanced Composition (cross-listed with RSC 316)
ENGL 317 Film History
ENGL 318 Studies in Film
ENGL 320 The Bible as Literature
ENGL 321 Medieval Literature and Culture
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<td>Chaucer</td>
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<td>American Literature Since World War II</td>
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<td>Studies in American Literature</td>
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<td>Contemporary Jewish-American Literature</td>
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<td>Introduction to Irish Literature</td>
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<td>ENGL 352</td>
<td>Studies in 19th-Century Literature</td>
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<td>ENGL 356</td>
<td>Studies: Modern/Contemporary Literature</td>
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<tr>
<td>ENGL 365</td>
<td>Studies: Literature Type, Genres, and Movements</td>
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<td>Literature and Science</td>
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<td>Studies: Fiction</td>
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<td>Studies: Drama</td>
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<td>ENGL 382</td>
<td>Studies: Multicultural Literature in Engl</td>
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<td>Rhetoric for Business and Technical Writers</td>
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<td>Business and Technical Publication</td>
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<td>Topics: Chinese Literature in Translation</td>
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<td>Method and Theory in Geography</td>
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<td>Islamic Near East: 1500 to the Present</td>
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<td>The World in Our Time</td>
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<td>The United States, 1877-1914</td>
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<td>HIST 318</td>
<td>Colonial America</td>
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<tr>
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<td>Revolutionary America</td>
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<tr>
<td>HIST 323</td>
<td>The Old South</td>
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<td>American Industrial Society: 1815 to Present</td>
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<td>Peasants and Revolution in Africa</td>
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<td>Ancient Rome</td>
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<td>Age of Louis XIV</td>
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<td>The French Revolution and Napoleon</td>
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<td>History of Spain: 1479 to Present</td>
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<td>HIST 349</td>
<td>Modern Latin America: 1800 to Present</td>
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<td>Contemporary European Society</td>
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<td>Germany in 20th Century: 1914 to Present</td>
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<td>Soviet Russia: 1917 to 1990</td>
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<td>Twentieth Century France</td>
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<td>China Since 1900</td>
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<td>Political Leadership</td>
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<td>African Politics</td>
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<td>Drugs and the Brain</td>
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<td>Race, Class and Gender (cross-listed with BAM5 415 and WOM5 415)</td>
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<td>Corporate Crime (cross-listed with CRJU 428)</td>
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<td>Approaches to Qualitative Inquiry</td>
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<td>Sociology of Art and Culture</td>
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<td>Politics and Society</td>
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<td>Lawyers and Society (cross-listed with CRJU 456)</td>
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<td>Honors Tutorial: Natural/Social Science</td>
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### Courses Approved for College of Arts and Sciences Breadth Requirements

#### Women's Studies (WOMS)

- **WOMS 300** Women in American History (cross-listed with HIST 300)
- **WOMS 321** Topics: Chinese Literature in Translation
- **WOMS 328** Topics in Japanese Literature in Translation (cross-listed with FLLT 328)
- **WOMS 329** Topics in Italian Literature in Translation (cross-listed with FLLT 329)
- **WOMS 415** Race, Class and Gender (cross-listed with BAMS 415 and SOCI 415)
- **WOMS 439** Women and Revolution in Africa (cross-listed with HIST 439)
- **WOMS 472** Seminar in Medieval History (cross-listed with HIST 471)
- **WOMS 480** Seminar (cross-listed with CMLT 480 and ENGL 480)

#### Courses Approved for College of Arts and Sciences Breadth Requirements

**Group A: Creative Arts And Humanities**

- **Anth 201** Visualizing Humanity: Ethnographic Film
- **Anth 205** Anthropology And Human Nature (X-Listed W/Cgsc 205)
- **Anth 216** Introduction To Material Culture Studies (X-Listed W/Mcst 216)
- **Anth 227** American Culture
- **Anth 239** Arts And Crafts Of Native North America
- **Anth 251** Introduction To The Ethnic Arts
- **Anth 328** Mayan Art And Architecture
- **Anth 338** Arts And Crafts Of Native South America
- **Anth 381** Visions Of Native Americans
- **Anth 344** Anthropology Of Clothing
- **Anth 457** Survey Of African Art (X-Listed W/Arth 457)
- **Art 129** Design And Visual Art
- **Art 138** Painting Approaches
- **Art 180** Photographic Approaches
- **Art 204** Media/Design/Culture
- **Art 212** Drawing Approaches
- **Art 231** Introduction To Painting
- **Art 243** Introduction To Printmaking
- **Art 246** Screenprinting
- **Art 250** Introduction To Sculpture
- **Art 280** Introduction To Photo And Video
- **Art 290** Introduction To Ceramics
- **Arth 101** Visual Culture
- **Arth 150** Monuments And Method In The History Of Art
- **Arth 151** Myth, Religion, And Art
- **Arth 153** Intro To Art History I
- **Arth 154** Intro To Art History II
- **Arth 162** History Of Architecture
- **Arth 198** Studies In World Art And Architecture
- **Arth 199** Topics In Art History
- **Arth 213** Art Of The Northern Renaissance
- **Arth 219** Art Of The Italian Renaissance
- **Arth 229** Contemporary Art
- **Arth 237** Art Of Tibet
- **Arth 248** American Decorative Arts, 1700-1900 (X-Listed W/ Mcst 243)
- **Arth 249** African American Art
- **Arth 302** Prints And Society
- **Arth 307** Seurat To Matisse: Art In France
- **Arth 319** Photography In The Us
- **Arth 445** Seminar In East Asian Art And Architecture
- **Arth 446** Seminar In Contemproary Architecture
- **Arth 457** Survey Of African Art (X-Listed W/ Anth 457)
- **Bams 206** Survey Of Afro-American Culture
- **Bams 327** Race, Gender, Science (X-Listed W/ Cgsc 327, Phil 327, Woms 327)
- **Bams 373** Psychosocial Elements Of Hip-Hop In The Black Community
- **Cgsc 205** Anthropology And Human Nature (X-Listed W/Anth 205)
- **Cgsc 320** Theory Of Knowledge (X-Listed W/Phil 320)
- **Cgsc 327** Race, Gender, Science (X-Listed W/ Bams 327, Phil 327, Woms 327)
- **Cgsc 421** Philosophy, Biology, Society (X-Listed Phil 421)
- **Cgsc 450** Recent Topics In Philosophy Of Mind (X-Listed W/Phil 450)
- **Cisc 355** Computers, Ethics, And Society
- **Comm 486** Multimedia Literacy (X-Listed W/ Educ 485)
- **Cmlt 320** Varying Authors And Genres (X-Listed W/Flit 320)
- **Crju 335** Crime And Justice In Film And Literature
- **Crju 336** The Detective In Film And Fiction
- **Danc 101** Introduction To The Art Of Dance
- **Danc 202** Beginning Ballet
- **Danc 203** Beginning Modern Dance
- **Danc 204** Beginning Jazz Dance
- **Danc 206** Dance In Culture And Society
- **Danc 207** Dance Improvisation
- **Danc 208** Dance Composition I
- **Danc 302** Intermediate Ballet
- **Danc 303** Intermediate Modern Dance
- **Danc 304** Intermediate Jazz Dance
- **Danc 305** Hip Hop
- **Danc 306** Musical Theatre Styles
- **Danc 307** Ethnic Dance Styles
- **Danc 309** Repertory
- **Danc 310** Methods Of Teaching Dance
- **Danc 311** Dance, Drama, And Learning
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<td>Tools Of Textual Analysis</td>
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<td>Intro To Drama</td>
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<td>Approaches To Literature</td>
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<td>Biblical &amp; Classical Literature</td>
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<td>Flit 322</td>
<td>Topics: Classical Literature In Translation: (X-Listed W/ Cmlt 322)</td>
</tr>
<tr>
<td>Flit 326</td>
<td>Hispanic Literature In Translation</td>
</tr>
<tr>
<td>Flit 327</td>
<td>Topics: Russian Literature In Translation</td>
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<tr>
<td>Flit 328</td>
<td>Topics: Japanese Literature In Translation</td>
</tr>
<tr>
<td>Flit 329</td>
<td>Topics: Italian Literature In Translation</td>
</tr>
<tr>
<td>Flit 331</td>
<td>Introduction To Chinese Films</td>
</tr>
<tr>
<td>Flit 337</td>
<td>Brazil Through Film</td>
</tr>
<tr>
<td>Flit 338</td>
<td>Light And Shadow: Japanese Films</td>
</tr>
<tr>
<td>Flit 380</td>
<td>Japanese Culture In Translation</td>
</tr>
<tr>
<td>Flit 436</td>
<td>Politics And Literature: (X-Listed W/ Posc 436, Woms 436)</td>
</tr>
<tr>
<td>Fren 211</td>
<td>French Reading And Composition</td>
</tr>
<tr>
<td>Geog 203</td>
<td>Intro To Cultural Geography</td>
</tr>
<tr>
<td>Geog 345</td>
<td>Cultural Geography</td>
</tr>
<tr>
<td>Geog 346</td>
<td>Urban Cultural Geography</td>
</tr>
<tr>
<td>Grek 301</td>
<td>Ancient Prose: Advanced</td>
</tr>
<tr>
<td>Grek 302</td>
<td>Ancient Poetry: Advanced</td>
</tr>
<tr>
<td>Grmn 211</td>
<td>German Reading And Composition: Short Fiction</td>
</tr>
<tr>
<td>Hist 216</td>
<td>Introducton To Material Culture Studies</td>
</tr>
<tr>
<td>Hlth 241</td>
<td>Ethical Aspects Of Health Care</td>
</tr>
<tr>
<td>Ital 211</td>
<td>Italian Reading And Composition: Short Fiction</td>
</tr>
<tr>
<td>Ital 212</td>
<td>Italian Reading And Composition: Drama And Prose</td>
</tr>
<tr>
<td>Japn 204</td>
<td>The Art Of Japanese Calligraphy</td>
</tr>
<tr>
<td>Jwst 202</td>
<td>Biblical And Classical Literature: (X-Listed W/ Engl 202)</td>
</tr>
<tr>
<td>Jwst 208</td>
<td>Intro To Jewish Philosophy: (X-Listed W/ Phil 208)</td>
</tr>
<tr>
<td>Jwst 348</td>
<td>Contemporary Jewish American Literature: (X-Listed W/ Engl 348)</td>
</tr>
<tr>
<td>Jwst 350</td>
<td>Studies In Jewish Literature: (X-Listed W/ Engl 350)</td>
</tr>
<tr>
<td>Jwst 365</td>
<td>Studies In Literary Genres, Types, And Movements: (X-Listed W/ Engl 365)</td>
</tr>
<tr>
<td>Latn 301</td>
<td>Advanced Intermediate Latin Prose</td>
</tr>
<tr>
<td>Latn 302</td>
<td>Advanced Intermediate Latin Poetry</td>
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<tr>
<td>Mcst 243</td>
<td>American Decorative Arts, 1700-1900: (X-Listed W/ Arth 243)</td>
</tr>
<tr>
<td>Musc 101</td>
<td>Appreciation Of Music</td>
</tr>
<tr>
<td>Musc 102</td>
<td>Appreciation Of Music</td>
</tr>
<tr>
<td>Musc 103</td>
<td>Introduction To Italian Opera</td>
</tr>
<tr>
<td>Musc 104</td>
<td>Introduction To Opera</td>
</tr>
<tr>
<td>Musc 105</td>
<td>Fundamentals Of Music I</td>
</tr>
<tr>
<td>Musc 106</td>
<td>Fundamentals Of Music II</td>
</tr>
<tr>
<td>Musc 108</td>
<td>University Singers</td>
</tr>
<tr>
<td>Musc 109</td>
<td>Schola Cantorum</td>
</tr>
<tr>
<td>Musc 110</td>
<td>Chorale</td>
</tr>
<tr>
<td>Musc 111</td>
<td>Concert Choir</td>
</tr>
<tr>
<td>Musc 112</td>
<td>University Strings</td>
</tr>
<tr>
<td>Musc 113</td>
<td>Marching Band</td>
</tr>
<tr>
<td>Musc 114</td>
<td>Symphonic Band</td>
</tr>
<tr>
<td>Musc 115</td>
<td>Wind Ensemble</td>
</tr>
<tr>
<td>Musc 116</td>
<td>Jazz Ensemble</td>
</tr>
<tr>
<td>Musc 117</td>
<td>Symphony Orchestra</td>
</tr>
<tr>
<td>Musc 118</td>
<td>Percussion Ensemble</td>
</tr>
<tr>
<td>Musc 120</td>
<td>Pep Band</td>
</tr>
<tr>
<td>Musc 123</td>
<td>Steel Band</td>
</tr>
<tr>
<td>Musc 124</td>
<td>Advanced Steel Band</td>
</tr>
<tr>
<td>Musc 125</td>
<td>Collegium Musicum</td>
</tr>
<tr>
<td>Musc 126</td>
<td>Chamber Orchestra</td>
</tr>
<tr>
<td>Musc 150</td>
<td>Freshman Honors Private Study</td>
</tr>
<tr>
<td>Musc 177</td>
<td>Class Guitar I</td>
</tr>
<tr>
<td>Musc 178</td>
<td>Class Guitar li</td>
</tr>
<tr>
<td>Musc 179</td>
<td>Organ Class</td>
</tr>
<tr>
<td>Musc 181</td>
<td>Private Study For Applied Jazz Styles And Techniques I</td>
</tr>
<tr>
<td>Musc 182</td>
<td>Private Study For Applied Jazz Styles And Techniques ii</td>
</tr>
<tr>
<td>Musc 197</td>
<td>Jazz Harmony</td>
</tr>
<tr>
<td>Musc 209</td>
<td>History Of Spanish Music</td>
</tr>
<tr>
<td>Musc 213</td>
<td>French Musical Culture</td>
</tr>
<tr>
<td>Musc 281</td>
<td>Private Study For Applied Jazz Styles And Techniques iii</td>
</tr>
<tr>
<td>Musc 301</td>
<td>Churches And Cathedrals Of London</td>
</tr>
<tr>
<td>Phil 100</td>
<td>Philosophies Of Life</td>
</tr>
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<td>Course Code</td>
<td>Course Title</td>
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<tr>
<td>Phil 102</td>
<td>Intro To Philosophy</td>
</tr>
<tr>
<td>Phil 105</td>
<td>Critical Thinking</td>
</tr>
<tr>
<td>Phil 125</td>
<td>Topics: Philosophy In Popular Culture</td>
</tr>
<tr>
<td>Phil 200</td>
<td>Business Ethics</td>
</tr>
<tr>
<td>Phil 201</td>
<td>Social And Political Philosophy</td>
</tr>
<tr>
<td>Phil 202</td>
<td>Contemporary Moral Problems</td>
</tr>
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<td>Phil 203</td>
<td>Ethics</td>
</tr>
<tr>
<td>Phil 204</td>
<td>World Religions</td>
</tr>
<tr>
<td>Phil 208</td>
<td>Intro To Jewish Philosophy (X-Listed W/ Jwst 208)</td>
</tr>
<tr>
<td>Phil 209</td>
<td>Philosophy Of Religion</td>
</tr>
<tr>
<td>Phil 216</td>
<td>Intro To Feminist Theory</td>
</tr>
<tr>
<td>Phil 241</td>
<td>Ethical Issues In Healthcare</td>
</tr>
<tr>
<td>Phil 244</td>
<td>Philosophy Of Art</td>
</tr>
<tr>
<td>Phil 246</td>
<td>Philosophical Perspectives Of Medicine</td>
</tr>
<tr>
<td>Phil 306</td>
<td>Philosophy Of Science</td>
</tr>
<tr>
<td>Phil 307</td>
<td>Black Thought And Philosophy</td>
</tr>
<tr>
<td>Phil 308</td>
<td>Topics In Jewish Theology</td>
</tr>
<tr>
<td>Phil 309</td>
<td>Indian Religion And Philosophy</td>
</tr>
<tr>
<td>Phil 310</td>
<td>Chinese Religion And Philosophy</td>
</tr>
<tr>
<td>Phil 313</td>
<td>Killing And Letting Die</td>
</tr>
<tr>
<td>Phil 315</td>
<td>Metaphysics</td>
</tr>
<tr>
<td>Phil 316</td>
<td>Time Travel</td>
</tr>
<tr>
<td>Phil 317</td>
<td>American Philosophy</td>
</tr>
<tr>
<td>Phil 320</td>
<td>Theory Of Knowledge (X-Listed W/ Cgsc 320)</td>
</tr>
<tr>
<td>Phil 322</td>
<td>Existentialism</td>
</tr>
<tr>
<td>Phil 327</td>
<td>Race, Gender, Science (X-Listed W/ Cgsc 327, Bams 327, Woms 327)</td>
</tr>
<tr>
<td>Phil 340</td>
<td>Cross Cultural Environmental Ethics</td>
</tr>
<tr>
<td>Phil 341</td>
<td>Ethics Of Engineering Profession</td>
</tr>
<tr>
<td>Phil 344</td>
<td>Science And Religion</td>
</tr>
<tr>
<td>Phil 389</td>
<td>Topics: Women And Health Issues</td>
</tr>
<tr>
<td>Phil 421</td>
<td>Philosophy, Biology, Society</td>
</tr>
<tr>
<td>Phil 448</td>
<td>Environmental Ethics</td>
</tr>
<tr>
<td>Phil 450</td>
<td>Recent Topics In Philosophy Of Mind (X-Listed W/Cgsc 450)</td>
</tr>
<tr>
<td>Plsc 103</td>
<td>Landscape And Field Sketching</td>
</tr>
<tr>
<td>Plsc 232</td>
<td>Basic Landscape Design</td>
</tr>
<tr>
<td>Posc 285</td>
<td>Currents In Political Theory</td>
</tr>
<tr>
<td>Posc 333</td>
<td>Contemporary Political Ideologies</td>
</tr>
<tr>
<td>Posc 436</td>
<td>Politics And Literature (X-Listed W/ Flt 436, Woms 436)</td>
</tr>
<tr>
<td>Russ 211</td>
<td>Russian Reading And Composition: Short Fiction</td>
</tr>
<tr>
<td>Soci 220</td>
<td>Sociology Of Popular Culture</td>
</tr>
<tr>
<td>Soci 350</td>
<td>Social Inequality And Film</td>
</tr>
<tr>
<td>Span 201</td>
<td>Spanish Reading And Composition</td>
</tr>
<tr>
<td>Thea 102</td>
<td>Intro To Performance</td>
</tr>
<tr>
<td>Thea 104</td>
<td>Intro To Theatre And Drama</td>
</tr>
<tr>
<td>Thea 106</td>
<td>Theatrical Experience Abroad</td>
</tr>
<tr>
<td>Thea 200</td>
<td>Intro To Theatre Production</td>
</tr>
<tr>
<td>Thea 202</td>
<td>Intro To Theatre Design</td>
</tr>
<tr>
<td>Thea 203</td>
<td>Intro To Costuming</td>
</tr>
<tr>
<td>Thea 204</td>
<td>Intro To Voice And Speech</td>
</tr>
<tr>
<td>Thea 205</td>
<td>Intro To Stage Movement</td>
</tr>
<tr>
<td>Thea 206</td>
<td>Intro To Dance</td>
</tr>
<tr>
<td>Thea 226</td>
<td>Fundamentals Of Acting I</td>
</tr>
<tr>
<td>Thea 227</td>
<td>Fundamentals Of Acting II</td>
</tr>
<tr>
<td>Thea 236</td>
<td>Fundamentals Of Jazz Dance</td>
</tr>
<tr>
<td>Thea 242</td>
<td>Page To Stage: Making Theatre</td>
</tr>
<tr>
<td>Thea 200</td>
<td>Intro To Theatre Production</td>
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<td>Intro To Theatre Design</td>
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<td>Thea 203</td>
<td>Intro To Costuming</td>
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<td>Thea 204</td>
<td>Intro To Voice And Speech</td>
</tr>
<tr>
<td>Thea 205</td>
<td>Intro To Stage Movement</td>
</tr>
<tr>
<td>Woms 205</td>
<td>Women In The Arts And Humanities</td>
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<tr>
<td>Woms 319</td>
<td>French Literature In Translation (X-Listed W/ Flt 319)</td>
</tr>
<tr>
<td>Woms 326</td>
<td>Hispanic Literature In Translation (X-Listed W/ Flt 326)</td>
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<td>Race, Gender, Science (X-Listed W/ Cgsc 327, Phil 327, Bams 327)</td>
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<td>Woms 332</td>
<td>Women, Race, And Ethnicity</td>
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<td>Feminist Cultural Studies</td>
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<td>Woms 436</td>
<td>Politics And Literature (X-Listed W/ Posc 436, Flt 436)</td>
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Group B: History And Cultural Change

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>Anth 101</td>
<td>Introduction To Social And Cultural Anthropology</td>
</tr>
<tr>
<td>Anth 105</td>
<td>Introduction To Historical Archaeology</td>
</tr>
<tr>
<td>Anth 210</td>
<td>Peoples And Cultures Of Southeast Asia</td>
</tr>
<tr>
<td>Anth 211</td>
<td>Peoples And Cultures Of East Asia</td>
</tr>
<tr>
<td>Anth 212</td>
<td>Peoples And Cultures Of The Muslim World</td>
</tr>
<tr>
<td>Anth 225</td>
<td>Peasant Societies</td>
</tr>
<tr>
<td>Anth 228</td>
<td>Peoples And Cultures Of The Southwest</td>
</tr>
<tr>
<td>Anth 261</td>
<td>Peoples And Cultures Of The Middle East (X-Listed W/Jwst 261)</td>
</tr>
<tr>
<td>Anth 265</td>
<td>High Civilizations Of The Americas</td>
</tr>
<tr>
<td>Anth 269</td>
<td>Early Civilizations Of The Old World</td>
</tr>
<tr>
<td>Anth 275</td>
<td>Delaware Prehistoric Archaeology</td>
</tr>
<tr>
<td>Anth 278</td>
<td>Historic Cultures Of The Mid-Atlantic Region (X-Listed Hist 278)</td>
</tr>
<tr>
<td>Anth 312</td>
<td>Asian Women In The Globalized Workplace</td>
</tr>
<tr>
<td>Anth 314</td>
<td>Immigrant Islam: The Muslim</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
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<tr>
<td>Bams 203</td>
<td>Art, Power, And Architecture In Africa (X-Listed With Arth 204)</td>
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<td>Bams 204</td>
<td>History Of Black Americans To The Civil War (X-Listed W/Hist 325)</td>
</tr>
<tr>
<td>Bams 206</td>
<td>History Of Black Americans Since The Civil War (X-Listed W/Hist 326)</td>
</tr>
<tr>
<td>Bams 300</td>
<td>Issues In American Culture: Archaeological Perspectives</td>
</tr>
<tr>
<td>Bams 320</td>
<td>Slave Testimony As Historical Artifact (X-Listed W/Hist 320)</td>
</tr>
<tr>
<td>Bams 331</td>
<td>History Of Caribbean I (X-Listed W/Hist 331)</td>
</tr>
<tr>
<td>Bams 332</td>
<td>History Of Caribbean II (X-Listed W/Hist 332)</td>
</tr>
<tr>
<td>Bams 334</td>
<td>African American Women's History (X-Listed W/Hist 334, Woms 334)</td>
</tr>
<tr>
<td>Bams 335</td>
<td>History Of Blacks In The American West (X-Listed W/Hist 333)</td>
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<td>Chem 410</td>
<td>History Of Chemistry</td>
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<td>Cmlt 330</td>
<td>Varying Authors, Themes, And Movements (X-Listed Woms 330/Fllt 330)</td>
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<tr>
<td>Crju 312</td>
<td>History Of Crime And Criminal Justice (X-Listed W/Hist 312)</td>
</tr>
<tr>
<td>Crju 322</td>
<td>Crowds, Cults, And Revolutions (X-Listed W/Soci 322)</td>
</tr>
<tr>
<td>Crju 324</td>
<td>American Constitutional History (X-Listed W/Hist 324)</td>
</tr>
<tr>
<td>Crju 351</td>
<td>Comparative Criminal Justice Systems</td>
</tr>
<tr>
<td>Crje 352</td>
<td>International Criminal Justice</td>
</tr>
<tr>
<td>Csc 382</td>
<td>History Of Western Medicine (X-Listed W/Hist 382)</td>
</tr>
<tr>
<td>Engl 204</td>
<td>American Literature</td>
</tr>
<tr>
<td>Engl 205</td>
<td>British Literature To 1660</td>
</tr>
<tr>
<td>Engl 206</td>
<td>British Literature 1660-Present</td>
</tr>
<tr>
<td>Engl 211</td>
<td>Great Writers Of The Western World</td>
</tr>
<tr>
<td>Engl 212</td>
<td>Great Writers Of The Western World li</td>
</tr>
<tr>
<td>Engl 281</td>
<td>British Literature To 1660 For Non-Majors</td>
</tr>
<tr>
<td>Engl 282</td>
<td>British Literature 1660-Present For Non-Majors</td>
</tr>
<tr>
<td>Engl 283</td>
<td>American Literature For Non-Majors</td>
</tr>
<tr>
<td>Engl 317</td>
<td>Film History</td>
</tr>
<tr>
<td>Engl 321</td>
<td>Medieval Literature And Culture</td>
</tr>
<tr>
<td>Engl 330</td>
<td>The Detective In Film And Fiction (X-Listed W/Crju 336)</td>
</tr>
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<td>Fash 213</td>
<td>Twentieth Century Design: Ethnic Influences</td>
</tr>
<tr>
<td>Fash 214</td>
<td>Costume History Before 1600</td>
</tr>
<tr>
<td>Fash 224</td>
<td>Clothing Design: 1600-Edwardian</td>
</tr>
<tr>
<td>Fash 319</td>
<td>Dress And Culture</td>
</tr>
<tr>
<td>Fash 322</td>
<td>Intro To Historic Preservation</td>
</tr>
<tr>
<td>Fash 334</td>
<td>History Of Africa (X-Listed W/Hist 334, Woms 334)</td>
</tr>
<tr>
<td>Code</td>
<td>Course Title</td>
</tr>
<tr>
<td>--------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Hist 313</td>
<td>The US, 1877-1914</td>
</tr>
<tr>
<td>Hist 315</td>
<td>History For Teachers</td>
</tr>
<tr>
<td>Flit 330</td>
<td>Varying Authors, Themes, And Movements(X-Listed Woms 330/Cmlt 330)</td>
</tr>
<tr>
<td>Flit 345</td>
<td>Modern Israel: Culture And Identity (X-Listed W/ Jwst 345)</td>
</tr>
<tr>
<td>Fren 207</td>
<td>The Contemporary Caribbean World: French Caribbean Past And Present Approved</td>
</tr>
<tr>
<td>Hist 318</td>
<td>Slaves Testimony As Historical Artifact (X-Listed W/ Bams 320)</td>
</tr>
<tr>
<td>Hist 320</td>
<td>Civil War And Reconstruction</td>
</tr>
<tr>
<td>Hist 322</td>
<td>American Industrial Society From 1815-Present</td>
</tr>
<tr>
<td>Geog 226</td>
<td>Geography Of Latin America</td>
</tr>
<tr>
<td>Geog 310</td>
<td>Social Geography</td>
</tr>
<tr>
<td>Grmn 255</td>
<td>Germany InThe News</td>
</tr>
<tr>
<td>Hist 101</td>
<td>Western Civilization To 1648</td>
</tr>
<tr>
<td>Hist 103</td>
<td>World History I</td>
</tr>
<tr>
<td>Hist 130</td>
<td>Islamic Near East: 600-1500</td>
</tr>
<tr>
<td>Hist 134</td>
<td>History Of Africa (X-Listed W/ Bams 134)</td>
</tr>
<tr>
<td>Hist 136</td>
<td>Topics In East Asia In Film (1-Credit Course)</td>
</tr>
<tr>
<td>Hist 138</td>
<td>East Asian Civilization: Japan</td>
</tr>
<tr>
<td>Hist 200</td>
<td>History And Government Of Delaware</td>
</tr>
<tr>
<td>Hist 205</td>
<td>Us History I</td>
</tr>
<tr>
<td>Hist 210</td>
<td>Intro To Military History</td>
</tr>
<tr>
<td>Hist 212</td>
<td>Film And American Society</td>
</tr>
<tr>
<td>Hist 241</td>
<td>Ancient Religion And Civilization</td>
</tr>
<tr>
<td>Hist 243</td>
<td>Jewish Holocaust: 1933-1945 (X-Listed W/Jwst 243)</td>
</tr>
<tr>
<td>Hist 278</td>
<td>Historic Cultures Of The Mid-Atlantic Region(X-Listed With Anth 278)</td>
</tr>
<tr>
<td>Hist 300</td>
<td>Women In American History (X-Listed W/Woms 300)</td>
</tr>
<tr>
<td>Hist 307</td>
<td>The Us In The Early National Period</td>
</tr>
<tr>
<td>Hist 309</td>
<td>Us Business And Political Economy</td>
</tr>
<tr>
<td>Hist 311</td>
<td>Postwar America Ii: 1963-Present</td>
</tr>
<tr>
<td>Hist 376</td>
<td>England: The Formative Years, 1648-1798</td>
</tr>
<tr>
<td>Hist 377</td>
<td>Radicalism And Revolution: Islamic Movement/Modern Middle East</td>
</tr>
<tr>
<td>Hist 378</td>
<td>Nationalism In The Modern Middle East</td>
</tr>
<tr>
<td>Hist 380</td>
<td>History Of The Arab-Israeli Conflict - (X-Listed W/Jwst 381)</td>
</tr>
<tr>
<td>Hist 381</td>
<td>Islam And The West: The History Of Mutual Perceptions</td>
</tr>
<tr>
<td>Hist 382</td>
<td>History Of Western Medicine (X-Listed W/ Csc 382)</td>
</tr>
<tr>
<td>Hist 384</td>
<td>Early Irish History: From Strongbow To Cromwell, 1169-1659</td>
</tr>
<tr>
<td>Hist 386</td>
<td>Asian America: Culture And History</td>
</tr>
<tr>
<td>Hist 387</td>
<td>History Of Sexuality In The Us</td>
</tr>
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<td>Music Of China, Korea And Japan</td>
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<td>History Of Liturgy And Hymns</td>
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Group C: Social And Behavioral Sciences
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<td>Comm 204</td>
<td>Gender And Communication</td>
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<td>Topics In Communication And Politics</td>
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<td>Adult Development And Aging</td>
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<td>Wellness: A Way Of Life</td>
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<td>Sport, Recreation, And Leisure Abroad</td>
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<td>Social Problems</td>
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<td>Men And Women In American Society</td>
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<td>Race In Society</td>
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<td>Families And Developmental Disabilities</td>
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<td>Social Deviance</td>
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<td>Criminology</td>
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<td>Social Class And Inequality</td>
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<td>Sociology Of Health And Illness</td>
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<td>Disasters And Society</td>
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<td>World Population: Profiles And Trends</td>
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<td>Society, Politics And Healthcare</td>
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<td>Aging And Society</td>
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<td>Sociology Of Religion</td>
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<td>Men, Conflict And Social Change</td>
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<td>Motherhood In Culture And Politics</td>
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<td>Women, Biology And Medicine</td>
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<td>Women And Violence</td>
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<td>Woms 301</td>
<td>Gay And Lesbian Film</td>
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<td>Women In Cross-Cultural Perspective</td>
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<td>Human Evolution And The Fossil Record</td>
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<td>Chemistry And The Human Environment</td>
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<tr>
<td>Chem 101*</td>
<td>General Chemistry</td>
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<tr>
<td>Chem 102*</td>
<td>General Chemistry</td>
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<tr>
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<td>Chem 111</td>
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<tr>
<td>Chem 112</td>
<td>General Chemistry</td>
</tr>
<tr>
<td>Cisc 101</td>
<td>Computer &amp; Information Systems</td>
</tr>
<tr>
<td>Cisc 103</td>
<td>Intro To Computer Science W/ Web Applications</td>
</tr>
<tr>
<td>Cisc 106</td>
<td>General Computer Science For</td>
</tr>
</tbody>
</table>

*Laboratory Course
Majors And Minors/African Studies

Phys 207* Fundamentals Of Physics I
Phys 208* Fundamentals Of Physics II
Plsc 101* Botany I
Plsc 140 People And Plants: Feast Or Famine
Plsc 204 Intro To Soil Science
Plsc 212 Woody Landscape Plants
Plsc 214 Indigenous Woody Plants Of The Eastern Us
Psyc 314 Brain And Behavior
Psyc 320 Intro To Neuroscience (X-Listed W/ Nsci 320)
Scen 101* Physical Science
Scen 102* Physical Science
Stat 200 Basic Statistical Practice

Majors And Minors

Every attempt has been made to present an accurate description of the curriculum requirements in the programs that follow. However, programs and policies may be changed during the academic year, and students are advised to check with the department concerned or the College of Arts and Sciences Undergraduate Academic Services Office, Room 219, Mitchell Hall, 831-3020, for the most current information.

African Studies

Telephone: 302-831-1858
http://www.udel.edu/AreaStudies/africa.html
Faculty Listing: http://www.udel.edu/AreaStudies/africa_faculty.html

The African Studies Minor has been designed to provide an intellectually coherent program of study based upon regularly offered courses in several different fields in the humanities and social sciences. This program is intended to enhance a student's undergraduate major.

MINOR IN AFRICAN STUDIES

The minor requires eighteen credit hours drawn from the courses below. Students must take six of the following courses selected from at least four different departments. In addition, in consultation with the program director, students may count toward the minor courses taken during the UD winter session programs in Ghana and South Africa.

ANTH 333/BAMS 333 Peoples of Africa
ANTH 457/ARTH 457 Survey of African Art
ARTH 204 Art, Power and Architecture in Africa
holistic comparative research on communities throughout the world, investigating their economic and political institutions, social organizations, religions, and art forms. Biological anthropology addresses the evolutionary differentiation of primates, the emergence of hominid populations, primate behavior, human biology, and processes of adaptation in modern populations. Archaeologists recover the physical remains of prehistoric and historic communities and reconstruct their associated cultures through time.

The undergraduate program at the University emphasizes a variety of subspecialties in social and cultural anthropology, and also provides a broad perspective on the fields of archaeology and biological anthropology. Because the department is devoted primarily to undergraduate instruction, students can take advantage of many opportunities to work closely with faculty and to participate in small seminar classes. Courses are enriched by work with departmental collections, visits to museums and special exhibits in neighboring cultural centers, films, and local fieldwork opportunities.

BACHELOR OF ARTS - ANTHROPOLOGY

See University and College requirements.

MAJOR REQUIREMENTS

All students must complete 33 credits in anthropology. These courses include:

ANTH 200 Introduction to the History of Anthropological Theory 3
Social and cultural anthropology course credits (minimum) 9
Archaeology course credits (minimum) 6
Biological anthropology course credits (minimum) 6
Elective in Anthropology 3
Tutorial (ANTH 486, ANTH 487, ANTH 488 or ANTH 489) 3

Capstone (see alternative options below):
A second tutorial, or
A senior thesis (UNIV 401), or
Independent study (ANTH 466), or
Anthropology study abroad (ANTH 466), or Internship 3

(Except for the first-listed choice (a second tutorial), all of the Capstone options must be approved by the department chair; and each must be closely supervised by a department member.)
Numerical Levels of Courses
In addition to the tutorial and capstone, all students must take a minimum of 18 credits at or above the 200 level, of which 12 credits must be at or above the 300 level. The minimal acceptable standard for a major course is C-.

The maximum number of credits allowed for the major is 45. Credits beyond 45 are disregarded for the major and for the 124 needed for the degree.

ELECTIVES
After required courses are completed sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF 124

BACHELOR OF ARTS - ANTHROPOLOGY EDUCATION

University and College requirements.

MAJOR REQUIREMENTS

The Anthropology Education major requires 83 credits.
All students must complete 33 credits in anthropology. These courses include:
ANTH 200 Introduction to the History of Anthropological Theory 3
Social and cultural anthropology course credits (minimum) 9
Archaeology course credits (minimum) 6
Biological anthropology course credits (minimum) 6
Elective in anthropology 3
Tutorial (ANTH 486, ANTH 487, ANTH 488 or ANTH 489) 3

Capstone (see alternative options below):
A second tutorial, or
A senior thesis (UNIV 401), or
Independent study (ANTH 466), or
Anthropology Study Abroad (ANTH 466), or
Internship 3

(Except for the first-listed choice (a second tutorial), all of the Capstone options must be approved by the department chair; and each must be closely supervised by a department member.)

Numerical Levels of Courses
In addition to the tutorial and capstone, all students must take a minimum of 18 anthropology credits at or above the 200 level, of which 12 credits must be at or above the 300 level.

All students must also complete 24 credits in social sciences other than anthropology and 26 credits in education. These courses include:

Social Sciences:
PSYC 100 General Psychology 3
Economics course 3
Geography course 3
History course 3
Political Science course 3
Sociology course 3
Six additional credits selected from the departments listed above 6

Education:
EDUC 413 Adolescent Development and Educational Psychology 4
EDUC 414 Teaching Exceptional Adolescents 3
EDUC 419 Diversity in Secondary Education 3
HIST 491 Planning a Course of Instruction 3
HIST 493 Seminar: Problems in Teaching History and Social Sciences 3
EDUC 420 Reading in the Content Areas 1
EDUC 400 Student Teaching 9

Grade of C- or better required in major, major related, and professional studies courses.

To be eligible to student teach, Anthropology Education majors must have a GPA of 3.0 in their major and an overall GPA of 2.75. They must also complete the portfolio requirement in February of their junior year and pass a teacher competency test as established by the University Council on Teacher Education. Students must consult with the teacher education program coordinator to obtain the student teaching application and other information concerning student teaching policies.

ELECTIVES
After required courses are completed sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF 124
All Honors Degree Candidates must complete the following:

- All requirements for the BA in Anthropology or Anthropology Education.
- All of the University's generic requirements for the Honors Baccalaureate degree.

**INTERDEPARTMENTAL MAJORS**

An interdepartmental major, for students having interests in two areas, requires 21 credits each in anthropology and in one other department as well as 9 credits of related work. The following areas are required by the Anthropology Department:

- 3 credits in biological anthropology
- 3 credits in archaeology
- 9 credits in social and cultural anthropology
- 3 credits of any 48X Tutorial
- 12 credits at the 300 level or above

A 48X Tutorial satisfies a 300+ requirement as well as any three credits in a subdiscipline (e.g. ANTH 486 would also satisfy three of the nine credit hours required in social and cultural anthropology).

The minimum acceptable grade for an interdepartmental major course is C-.

Students should consult with their advisors for additional information on interdepartmental majors.

**ELECTIVES**

After required courses are completed sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

**MINOR IN ANTHROPOLOGY**

Students wishing to minor in anthropology must complete 18 credits in anthropology courses distributed as follows: 6 credits at the 100 or 200 level, of which only 3 credits may be at the 100 level, and 12 credits in 300 or 400 level.

Minimum acceptable grade for minor courses is C-.
BACHELOR OF ARTS - ART

Communications majors are required to receive a grade of C- or better in all required courses to continue in the degree path.

The department enjoys an excellent reputation. Our facilities, including a large computer lab, digital and electronic equipment and spacious studios, support a variety of artistic and design practices. The proximity of the University to major cultural centers of the northeastern United States provides students with easy access to important museums, galleries, internships, field trip options and allows for an outstanding program of visiting artists.

BACHELOR OF ARTS - ART

UNIVERSITY REQUIREMENTS

ENGL 110  Critical Reading and Writing (minimum grade C-)  3
First Year Experience (FYE)  0-4
University Breadth Requirement (minimum grade C-)  12
Discovery Learning Experience (DLE)  3
Multi-cultural Course (MCC)  3

COLLEGE REQUIREMENTS

Second Writing Requirement: (minimum grade C-)  3
A second writing course involving significant writing experience including two papers with a combined minimum of 3,000 words to be submitted for extended faculty critique of both composition and content. This course must be taken after completion of 60 credit hours. Appropriate writing courses are designated in the semester’s Registration Booklet.

Mathematics: (one of the following)  0-4
MATH 113  Contemporary Mathematics (designed for students who do not intend to continue the study of mathematics)
MATH 114  College Mathematics and Statistics (designed for students who do not intend to continue the study of mathematics)
MATH 115  Pre-Calculus (designed for students who do intend to continue the study of mathematics)
OR
Successful performance on the college proficiency exam.  0

Foreign Language: (minimum grade D-)  0-12
Completion of the intermediate-level course (107 or 112 or 214) in an ancient or modern language. The number of credits needed and initial placement will depend on the number of years of high school study of foreign language. Students with four or more years of high school work in a single foreign language, or who have gained proficiency in a foreign language by other means, may attempt to fulfill the requirement in that language by taking an exemption examination through the Foreign Languages and Literature Department.

COLLEGE BREADTH REQUIREMENTS: (minimum grade C-)

Group A Creative Arts and Humanities  9
Nine credits of courses representing at least two departments or appropriate instructional units.

Group B History and Cultural Change  9
Nine credits of courses representing at least two departments or appropriate instructional units.

Group C Social and Behavioral Sciences  9
Nine credits of courses representing at least two departments or appropriate instructional units.

Group D Mathematics, Natural Sciences and Technology  10
Ten credits of courses representing at least two departments or appropriate instructional units and including a minimum of one course with an associated laboratory.

MAJOR REQUIREMENTS

ART 110  Drawing I  3
ART 111  Design I  3
ART 116  Introduction to Digital Media  3
ART 118  Foundations Colloquium (1 in fall, 1 in spring)  2
ART 112  Drawing II  3
ART 113  Design II  3
ART 117  Research Studio: Practice and Product  3

Art Electives  24
Courses to be selected in consultation with Advisor. No more than 12 credits in any one studio area. Studio areas include Design & Illustration, Painting, Ceramics, Printmaking, Lens Media and Sculpture.

Art History courses  12

ELECTIVES

After required courses are completed sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF  124
BACHELOR OF FINE ARTS - FINE ARTS

UNIVERSITY REQUIREMENTS
ENGL 110 Critical Reading and Writing (minimum grade C-) 3
First Year Experience (FYE) 0-4
University Breadth Requirement 12
Discovery Learning Experience (DLE) 3
Multi-cultural Course (MCC) 3

COLLEGE REQUIREMENTS
Writing: (minimum grade C-) 3
A second writing course involving significant writing experience including two papers with a combination of 3,000 words to be submitted for extended faculty critique of both composition and content. This course must be taken after completion of 60 credit hours. Appropriate writing courses are normally designated in the semester’s Registration Booklet. (See list of courses approved for second writing requirement)

Mathematics (one of the following) 0-4
MATH 113 Contemporary Mathematics (designed for students who do not intend to continue the study of mathematics)
MATH 114 College Mathematics and Statistics (designed for students who do not intend to continue the study of mathematics)
MATH 115 Pre-Calculus (designed for students who intend to continue the study of mathematics)
MATH 221 Calculus I (designed for students who intend to continue the study of mathematics)
MATH 241 Analytic Geometry and Calculus A (designed for students who intend to continue the study of mathematics)
or Successful performance on the college proficiency exam. (0 credits awarded)

COLLEGE OF ARTS AND SCIENCES BREADTH REQUIREMENTS (minimum grade C-)
The College Breadth requirements are in addition to the University Breadth requirement. Up to 3 credits from each of the University Breadth Requirement categories may be used to simultaneously satisfy these College of Arts and Sciences Breadth Requirements

Group B History and Cultural Change 9
Nine credits of courses representing at least two departments or appropriate instructional units.

Group C Social and Behavioral Sciences 9
Nine credits of courses representing at least two departments or appropriate instructional units.

Group D Mathematics, Natural Sciences and Technology 7
Seven credits of courses representing at least two departments or appropriate instructional units and including a minimum of one course with an associated laboratory.

If the grade earned is sufficient, a course may be applied toward more than one requirement (e.g., breadth and major requirements), but the credits are counted only once toward the total credits for graduation. If all but one course in a group has been taken in one department or program, a course cross-listed with that program will not satisfy the distribution requirement

MAJOR REQUIREMENTS
NOTE: The BFA degree requires 77 credit hours minimum of art courses and 86 credit hours maximum. All grades in art courses must be C- or better.

Freshman Foundation Requirements
ART 100 Drawing I 3
ART 111 Design I 3
ART 116 Introduction to Digital Media 3
ART 118 Foundations Colloquium 2 (1 in fall, 1 in spring)
ART 112 Drawing II 3
ART 113 Design II 3
ART 117 Research Studio: Practice and Product 3
Total Freshman Foundation 20

Sophomore Year Requirements
Fine Arts Core: 15
ART 231 Introduction to Painting
ART 243 Introduction to Printmaking
ART 250 Introduction to Sculpture
ART 290 Introduction to Ceramics
ART 280 introduction to Photo and Video
Fine Arts Elective 3
Total Sophomore Year 18

Junior and Senior Year Requirements
Fine Arts Electives 36
(To be taken from all Department of Art offerings at the 200-, 300-, and 400-levels)
ART 416 Senior Seminar 3
ART 417 BFA Exhibition 0
Total Junior and Senior Years 39

Art History Requirement
Four classes from Art History or
Three classes from Art History and ART 315 Contemporary Issues
Total Art History Requirement 12
(A student may double count ART 315 as an upper division studio elective course and as an Art History course.)

ELECTIVES
After required courses are completed sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

TOTAL BFA/FINE ARTS MINIMUM DEGREE CREDITS 77
CREDITS TO TOTAL A MINIMUM OF 124

BACHELOR OF FINE ARTS - VISUAL COMMUNICATIONS

UNIVERSITY REQUIREMENTS
ENGL110 Critical Reading and Writing (minimum grade C-) 3
First Year Experience (FYE) 0-4
University Breadth Requirement 12
Discovery Learning Experience (DLE) 3
Multi-cultural Courses (MCC) 3

COLLEGE OF ARTS AND SCIENCES REQUIREMENTS

Writing: (minimum grade C-) 3
A second writing course involving significant writing experience including two papers with a combined minimum of 3,000 words to be submitted for extended faculty critique of both composition and content. This course must be taken after completion of 60 credit hours. Appropriate writing courses are normally designated in the semester’s Registration Booklet. (See list of courses approved for second writing requirement.)

Mathematics (one of the following): 0-4
MATH 113 Contemporary Mathematics (designed for students who do not intend to continue the study of mathematics)
MATH 127 Mathematics and Quantitative Reasoning (designed for students who do not intend to continue the study of mathematics)
MATH 114 College Mathematics and Statistics (designed for students who do not intend to continue the study of mathematics)
MATH 115 Pre-Calculus (designed for students who do intend to continue the study of mathematics)
MATH 221 Calculus I (designed for students who do intend to continue the study of mathematics)
MATH 241 Analytic Geometry and Calculus A (designed for students who do intend to continue the study of mathematics)
or
Successful performance on the college proficiency exam. (0 credits awarded)

Breadth:
COLLEGE OF ARTS AND SCIENCES BREADTH REQUIREMENTS (minimum grade C-)
The College Breadth Requirements are in addition to the University Breadth Requirement. Up to 3 credits from each of the University Breadth Requirement categories may be used to simultaneously satisfy these College of Arts and Sciences Breadth Requirements

Group A Creative Arts and Humanities. Nine credits representing at least two areas.

Group B History and Cultural Change. Nine credits representing at least two areas.

Group C Social and Behavioral Sciences. Nine credits representing at least two areas.

Group D Mathematics, Natural Sciences and Technology. A minimum of seven credits representing at least two areas including a minimum of one course with an associated laboratory.

If the grade earned is sufficient, a course may be applied toward more than one requirement (e.g., breadth and major requirements), but the credits are counted only once toward the total credits for graduation. If all but one course in a group has been taken in one department or program, a course cross-listed with that program will not satisfy the distribution requirement.

MAJOR REQUIREMENTS
NOTE: The BFA in Visual Communications degree requires a minimum of 75 credit hours minimum of art courses and 86 credit hours maximum. All grades in art courses must be a C or better.
**Art History Requirement**

Of the total credits required for the degree, 12 credits must be of Art History, or 9 credits of Art History and 3 of ART 315: Issues in Contemporary Art.

**Total BFA/VC Minimum Degree Credits**

75

**CREDITS TO TOTAL A MINIMUM OF**

124

**MINOR IN FINE ARTS**

ART 129 or ART 138 (minimum grade of B) 3 credits

(Students take this class before being admitted to the minor. Students may then apply for the minor and enter with the Chairperson's approval.)

Four studio ART classes at the 200-, 300-, or 400-level in any studio art courses for which they meet the prerequisites. 12 credits

(Students may choose from one or more areas. Students must follow prerequisites for all courses. Enrollment is based on class availability. Classes will not be guaranteed in any one area to complete the minor.)

Art History or ART 204 or ART 215 or ART 315 3 credits

**TOTAL CREDITS 18**

**MINOR IN INTERACTIVE MEDIA**

For more information contact the imm-committee@udel.edu.
Website: http://interactivemedia.udel.edu/degree_requirements.html

The minor requires a minimum of four semesters to complete following the recommended sequence of classes. The minor requires 18 credits taken as follows:

ART 307 Interactive Media 3
CISC 103 Introduction to Computer Science with Web Applications 3
ENGL 416 Designing Online Information 3
COMM 408 New Media Project Development 3

Two elective courses 6

Note about Elective Courses:
Students must take two additional courses from existing University courses approved by the Governance and Admissions Committee. These courses are approved by the student's advisor and the Governance and Admissions Committee.
The Art Conservation Department offers an undergraduate major leading to a Bachelor of Arts degree. The Art Conservation major involves interdisciplinary study in chemistry, studio arts, anthropology, art history and history with a focus on preventive conservation studies. This major gives students a strong background for applying to graduate programs in Art Conservation, Historic Preservation, Library and Archival Preservation and Museum Studies. An Honors Degree option is available.

Working closely with an advisor, students elect courses in the departments of anthropology, art, art conservation, art history, chemistry and biochemistry, history and others. We encourage students to minor or double major in another discipline. During the junior or senior year, majors are required to participate in two on- or off-site internships. Also, specialized materials and techniques of art and preservation courses are required. Students in this program must earn a minimum of a C- in all required courses.

**BACHELOR OF ARTS - ART CONSERVATION**

University and College requirements.

**MAJOR REQUIREMENTS (65 or 69 credits)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ARTC 101</td>
<td>Freshman Conservation Experience</td>
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<tr>
<td>ARTC 301</td>
<td>Care and Preservation of Cultural Property I</td>
<td>3</td>
</tr>
<tr>
<td>ARTC 302</td>
<td>Care and Preservation of Cultural Property II</td>
<td>3</td>
</tr>
<tr>
<td>ARTC 464</td>
<td>Conservation Internship (two semesters)</td>
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(Junior and/or Senior status only)

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<tbody>
<tr>
<td>ARTC 495</td>
<td>Senior Capstone</td>
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One of the following

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<tr>
<td>ARTC 485</td>
<td>Color Mixing and Matching</td>
<td>3</td>
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<tr>
<td>ARTC 210</td>
<td>Science of Color Phenomena</td>
<td>4</td>
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One of the following

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<tr>
<td>ARTC 488</td>
<td>Studio in the Materials and Techniques of Painting I</td>
<td>3</td>
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<tr>
<td>ARTC 489</td>
<td>Studio in the Materials and Techniques of Painting II</td>
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</tr>
<tr>
<td>ARTC 480</td>
<td>Studio in the Materials Techniques of Drawing in the West</td>
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</tr>
<tr>
<td>ARTC 490</td>
<td>Studio in the Materials and Techniques of Printmaking I</td>
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Three of the following

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<tr>
<td>ART 110</td>
<td>Drawing I</td>
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<tr>
<td>ART 130</td>
<td>Drawing I: Tools and Techniques</td>
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<tr>
<td>ART 138</td>
<td>Painting Approaches</td>
<td></td>
</tr>
<tr>
<td>ART 231</td>
<td>Introduction to Painting</td>
<td></td>
</tr>
<tr>
<td>ART 243</td>
<td>Introduction to Printmaking</td>
<td></td>
</tr>
<tr>
<td>ART 250</td>
<td>Beginning Sculpture</td>
<td></td>
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<tr>
<td>ART 281</td>
<td>Darkroom Photography</td>
<td></td>
</tr>
<tr>
<td>ART 290</td>
<td>Beginning Ceramics</td>
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Two courses from the following

<table>
<thead>
<tr>
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<th>Credits</th>
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<tbody>
<tr>
<td>ANTH 103</td>
<td>Introduction to Prehistoric Archaeology</td>
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<tr>
<td>ANTH 104</td>
<td>Introduction to Archaeology and Biological Anthropology</td>
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</tr>
<tr>
<td>ANTH 105</td>
<td>Introduction to Historical Archaeology</td>
<td></td>
</tr>
<tr>
<td>ARTH 153</td>
<td>Introduction to Art History I</td>
<td></td>
</tr>
<tr>
<td>ARTH 154</td>
<td>Introduction to Art History II</td>
<td></td>
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<tr>
<td>ARTH 162</td>
<td>History of Architecture</td>
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</table>

One of the following (A or B) chemistry sequences

<table>
<thead>
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<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 103</td>
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<tr>
<td>CHEM 104</td>
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<tr>
<td>CHEM 321</td>
<td>Organic Chemistry</td>
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<tr>
<td>CHEM 322</td>
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</table>

Option A (16 credits)

<table>
<thead>
<tr>
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<tbody>
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<td>CHEM 111</td>
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<tr>
<td>CHEM 115</td>
<td>Introduction to Chemical Sciences</td>
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<tr>
<td>CHEM 112</td>
<td>General Chemistry</td>
<td></td>
</tr>
<tr>
<td>CHEM 120</td>
<td>Quantitative Chemistry II</td>
<td></td>
</tr>
<tr>
<td>CHEM 321</td>
<td>Organic Chemistry</td>
<td></td>
</tr>
<tr>
<td>CHEM 322</td>
<td>Organic Chemistry</td>
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</tbody>
</table>

Option B (for Chemistry majors or minors) (19 credits)

<table>
<thead>
<tr>
<th>Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 111</td>
<td>General Chemistry</td>
<td></td>
</tr>
<tr>
<td>CHEM 115</td>
<td>Introduction to Chemical Sciences</td>
<td></td>
</tr>
<tr>
<td>CHEM 112</td>
<td>General Chemistry</td>
<td></td>
</tr>
<tr>
<td>CHEM 120</td>
<td>Quantitative Chemistry II</td>
<td></td>
</tr>
<tr>
<td>CHEM 321</td>
<td>Organic Chemistry</td>
<td></td>
</tr>
<tr>
<td>CHEM 322</td>
<td>Organic Chemistry</td>
<td></td>
</tr>
</tbody>
</table>
Four courses of upper division Anthropology, Art Conservation, Art History, History, Black American Studies, Museum Studies, and/or Fashion and Apparel Studies courses with a strong material culture basis with approval by an Art Conservation academic advisor prior to enrollment in the course.

**ELECTIVES**

After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

**CREDITS TO TOTAL A MINIMUM OF** 124

**HONORS BACHELOR OF ARTS - ART CONSERVATION**

Students wishing to receive an Honors BA in Art Conservation must complete:

- All requirements for the Bachelor of Arts degree in Art Conservation.
- All of the University's generic requirements for the Honors Baccalaureate degree.

The Honors credits required in Art Conservation include ARTC 301 and ARTC 302 and courses in such collateral disciplines as Anthropology, Art History, and Chemistry.

The Art Conservation Department will offer ARTC 301 and ARTC 302 for Honors credit in conjunction with the regular section. Students enrolled for Honors credit will be responsible for additional assignments and activities, including in-depth investigation of art and artifact technology and deterioration using visual and microscopic analysis, individual meetings with the instructor and local conservation professionals focused on current issues relating to the care and preservation of cultural property, and on-site assessment of the condition and collection care practices of local cultural institutions.

Students seeking an Honors degree will be expected to take two from ARTH 153/ARTH 154/ANTH104, plus ARTC301/ARTC302, and they are encouraged to take CHEM 103/CHEM 104 or (at least some of) CHEM 111/CHEM 112 and CHEM 119/CHEM 120 for Honors credit. For the Honors Degree with Distinction, the Honors Thesis (UNIV 401/UNIV 402) will involve 6 credits of advanced-level research in Art Conservation studies.

**Art History**

Telephone: (302) 831-8415
http://www.udel.edu/ArtHistory
Faculty Listing: http://www.udel.edu/ArtHistory/faculty/

The Department of Art History offers programs of study for majors and minors. Although majors may concentrate on the art of a particular time period or region, the program is designed to provide broad experience spanning many centuries and cultures. Because art history is an interdisciplinary field that extends into other areas of culture, the major includes work in such related disciplines as anthropology, studio art, English, history, languages and literature, music, philosophy, and theater.

Art History is concerned with the historical development of visual artifacts in relation to cultures and societies. The Department offers courses in nearly every area of art history, including European and American painting, photography, sculpture, and architecture from antiquity to the present, as well as African, Islamic, Asian, and Latin American art. The faculty of the Department collaborates with the Winterthur Programs in Early American Culture and Art Conservation, as well as with faculty in Museum Studies and Material Culture. Visits to museums from New York to Washington are scheduled in connection with many art history courses. The University Gallery houses a collection of original works of art and offers internship, research, and exhibition opportunities for students.

**BACHELOR OF ARTS - ART HISTORY**

University and College requirements.

MAJOR REQUIREMENTS (33 credits minimum; 45 credits maximum)

Two (maximum) 100-level ARTH courses 6
We recommend either ARTH 153 or ARTH 154 or both.

Four courses at the 200-level or above, one each in 4 of the 5 following areas: 12
- Before the year 1400
- 1400-1700
- 1700-1900
- 1900-present
- African, Asian, Islamic, or Latin American art

ARTH 301 Research and Methodology in Art History 3
The Asian Studies Program at the University of Delaware is an intellectually rigorous, interdisciplinary program that provides students the opportunity to learn about Asia from a variety of perspectives and fields, as well as various ways that the different local, national and regional cultures and systems interact within Asia and with the world. Students may major or minor in Asian Studies with different language options. The program also offers students an Honors option. An Asian Studies major or minor is also considered highly complementary to a host of other majors, including foreign language, history, international relations, political science and international business.

Students majoring in Asian Studies take courses on Asia in several academic disciplines and are encouraged to develop language proficiency and to pursue study abroad opportunities in Asia. Knowledge of Asia - its cultures, peoples, histories, languages and politics - is considered an important resource for any career in our global economy and society. Included among the career paths open to Asian Studies majors are careers in government, the foreign service, international agencies, business, education, journalism and international law. Asian Studies majors also often choose to pursue advanced degrees in some aspect of Asian Studies.

BACHELOR OF ARTS - ASIAN STUDIES

University and College Requirements.

MAJOR REQUIREMENTS (33 or 36 credit hours)

A minimum grade of C- is required in all courses.

Complete one of the following options (A or B), the core and nine credit hours of additional work.

Option A: Three credit hours at the 200-level or above in Chinese or in Japanese (including CHIN 200, CHIN 205, CHIN 206/JAPN 200, JAPN 205, JAPN 206) 3 OR

Option B: Three credit hours in both Chinese and Japanese at 200-level or above (total 6 credit hours) 6

The core consists of 21 hours of course work:

HIST 137 East Asian Civilization: China 3
HIST 138 East Asian Civilization: Japan 3

One course from:

PHIL 309 Indian Philosophy and Religion 3
PHIL 310 Chinese Religion and Philosophy 3

MINOR IN ART HISTORY

The minor in art history requires 18 credits of course work, including at least four courses at or above the 200-level. Students must distribute their courses among at least three different key areas of art history according to the areas for the major requirements: Before the year 1400; 1400-1700; 1700-1900; 1900-present; African, Asian, Islamic, or Latin American art.

Several courses in art history may be applied toward fulfilling Group A and B requirements in the College of Arts and Sciences.

Asian Studies

Professor Alice Ba, 461 Smith Hall
Email: aliceba@udel.edu
Telephone: (302) 831-1937
http://www.udel.edu/AreaStudies/asia.html
One course from: 3
ANTH 210 Peoples and Cultures of Southeast Asia
ANTH 211 Peoples and Cultures of East Asia
ANTH 310 Asian Women's Lives

One course from: 3
POSC 312 Politics of East Asian Development
POSC 429 Southeast Asia and the World

Two courses from: 6
ARTH 237 Art of Tibet
ARTH 455 Seminar in East Asian Art & Architecture
ARTH 456 Contemporary Architecture, Cross Cultural Dialogues, Transnational Practices
FLLT 321 Topics: Chinese Literature in Translation
FLLT 328 Topics: Japanese Literature in Translation
FLLT 331 Introduction to Chinese Film
FLLT 338 Introduction to Japanese Film
MUSC 206 Music of China
ENGL 381 Asian American Women: Culture and History
ENGL 386 Literature and History of Asian America

Nine Credit Hours of Additional Course Work:
These nine credit hours must come from AT LEAST TWO different departments. Note that all cross-listed courses are tied to the instructor’s home department, e.g. a HIST/WOMS course, if taught by a History instructor, counts as a History course. If uncertain, students should consult with the program director. Any course taken to meet one of the core requirements noted above will not count here. (e.g. POSC429, if chosen to satisfy the core requirement above will not count for the “nine credit hours of additional course work.”) The course options include, but are not limited to: 9

ANTH 210 Peoples and Cultures of Southeast Asia
ANTH 211 Peoples and Cultures of East Asia
ANTH 310 Asian Women's Lives
ANTH 312 Asian Women in the Globalized Workplace
ANTH 313 New Rich in Asia
ARSC 130 East Asia in Film (1-3 cr.)
ARSC 296 Honors Colloquium (only when Asia related)
ARTH 233 Art of China
ARTH 237 Art of Tibet
ARTH 445 Seminar in Asian Art and Architecture
ARTH 456 Contemporary Architecture, Cross Cultural Dialogues & Transnational Practices
CRJU 467 Crime and Criminal Justice in East Asia
ENGL 381 Asian American Women: Culture and History
ENGL 386 Asian America: Culture and History
FLLT 321 Topics: Chinese Literature in Translation
FLLT 328 Topics: Japanese Literature in Translation
FLLT 330 Chinese Women Writers
FLLT 331 Introduction to Chinese Films
FLLT 360 Japanese Visual Culture
FLLT 338 Introduction to Japanese Film
FLLT 380 Topics: Japanese Culture in Translation
FLLT 381 Topics: Chinese Culture in Translation
HESC 120/BHAN 120 Taiji (Tai Chi) or Chinese Wushu (1 cr.)
HIST 137 East Asian Civilization: China
HIST 138 East Asian Civilization: Japan
HIST 268 Seminar (only when Asia related)
HIST 270 History of Modern Asia
HIST 365 Topics in East Asian History
HIST 367 (when Asian content)*
HIST 368 Modern China: 1600-1920s
HIST 369 China Since 1900
HIST 370 History of Modern Japan
HIST 371 Post-war Japan
HIST 372 Popular Culture in Urban Japan
HIST 392 Buddhism and Politics in Modern Asia
HIST 393 History of Modern Vietnam
HIST 479 Seminar: Topics in Asian History
MUSC 206 Music of China
PHIL 309 Indian Religion and Philosophy
PHIL 310 Chinese Religion and Philosophy
POSC 312 Politics of East Asian Development
POSC 409 Contemporary Problems of World Politics
POSC 427 Politics in China
POSC 429 Southeast Asia and the World
POSC 443 China and the World
*May be repeated if topics vary.

For approval of independent studies and special problems, and for course substitutions in all the Asian Studies degree programs, contact the Asian Studies program director before registering for them.

ELECTIVES
After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF 124
**HONORS BACHELOR OF ARTS - ASIAN STUDIES**

The requirements for the Honors BA in Asian Studies include:

All requirements for the BA in Asian Studies. All the University's generic requirements for the Honors Degree. The Honors credits in the major shall come from at least two different participating departments, and shall include at least two courses at the 300-level or above.

The cumulative grade point average for all courses in major must be at least 3.400.

For the Honors Degree with Distinction in Asian Studies, the six credit hours of thesis would be in addition to the 33 or 36 credit hours required for the major, to yield a total of 39 or 42 credit hours.

**MINOR IN ASIAN STUDIES**

This interdisciplinary minor offers students the opportunity to enhance their major with 18 credit hours of Asia-related coursework. Students have the option of an Asian Studies Minor Without Language or Asian Studies Minor With Language.

**ASIAN STUDIES WITHOUT LANGUAGE**

Number of credits required: 18

Required courses:

A. Introductory Courses:

6 credits in two different disciplines from the following courses in the humanities. (NOTE: CHIN, FLLT, and JAPN courses are all from a single discipline/department).

- ARSC 130 East Asian Film*
- ARSC 296 Honors Colloquium (only when Asia related)
- ARTH 233 Art of China
- ARTH 237 Art of Tibet (if not selected as a required course)
- CHIN 208 Contemporary Chinese Culture I
- ENGL 381 Women in Literature (when Asian content)
- ENGL 386 Literature and History of Asian America
- FLLT 321 Topics: Chinese Literature in Translation
- FLLT 328 Topics: Japanese Literature in Translation
- FLLT 330 Chinese Women Writers
- FLLT 331 Introduction to Chinese Films
- FLLT 338 Introduction to Japanese Films
- FLLT 360 Japanese Visual Culture
- FLLT 380 Topics: Japanese Culture in Translation
- FLLT 381 Topics: Chinese Culture in Translation
- HESC 120/BHAN 120 Taiji (Tai Chi) or Wushu (Martial art)
- JAPN 208 Contemporary Japanese Culture I
- MUSC 206 Music of China
- 6 credits from two different disciplines in the following courses in the social sciences:
- ANTH 210 Peoples and Cultures of Southeast Asia
- ANTH 211 Peoples and Cultures of East Asia
- HIST 137 East Asian Civilizations: China
- HIST 138 East Asian Civilizations: Japan
- HIST 270 History of Modern Asia
- PHIL 309 Indian Philosophy and Religion
- PHIL 310 Chinese Religion and Philosophy
- POSC 312 East Asian Political Systems
- POSC 429 Southeast Asia and the World

B. Advanced Courses:

6 credits of advanced coursework that includes, among others:

- ANTH 310 Asian Women's Lives
- ANTH 312 Asian Women in the Globalized Workplace
- ANTH 313 New Rich in Asia
- ARTH 445 Seminar in Asian Art
- CHIN 455 Selected Authors and Works in Chinese
- CRJU 467 Crime & Criminal Justice in East Asia
- HIST 268 Seminar (only when Asia related/restricted to HIST majors)
- HIST 365 Topics in Asian History*
- HIST 367 (only when Asia related)*
- HIST 368 Modern China: 1600-1920s
- HIST 369 China Since 1900
- HIST 370 History of Modern Japan
- HIST 371 Post-war Japan
- HIST 372 Popular Culture in Urban Japan
- HIST 393 History of Modern Vietnam
- HIST 479 Seminar in Asian History*
- JAPN 455 Selected Authors, Works and Themes
- PHILO 309 Indian Religion and Philosophy
- PHIL 310 Chinese Religion and Philosophy
- POSC 427 Politics in China
- POSC 429 Southeast Asia and the World
- POSC 443 China and the World

*May be repeated if topics varied.

For approval of Independent Studies and Special Problems courses and for course substitutions in all the Asian Studies degree programs, please contact the Director of Asian Studies before registering for them. This course list will be
updated from time-to-time. A minimum of C- is required in all courses.

ASIAN STUDIES WITH LANGUAGE

The minor with language consists of the above listed 18 credits of requirements plus completion of either CHIN 107 or JAPN 107 or their equivalents in transfer credit or proficiency examination.

Biological Sciences

Telephone: (302) 831-2282
http://www.udel.edu/bio
Faculty Listing: http://www.udel.edu/bio/people/

The Department of Biological Sciences offers two degrees with five majors or concentrations. A BA degree may be earned in Biological Sciences, Biological Sciences Education and an Honors BA degree may be earned in Biological Sciences. A BS degree in Biological Sciences may be earned with a concentration in Biotechnology, Pharmaceutical Sciences, or Cellular & Molecular Biology & Genetics and an Honors BS degree may be earned in Biotechnology. In addition the department offers two minors: Biological Sciences and Computational Biology.

The department participates in an interdepartmental BS degree in Environmental Sciences. Students interested in marine biology should contact the College of Earth, Ocean, and Environment. Students interested in ecology should contact the department of Entomology and Wildlife Conservation in the College of Agriculture and Natural Resources.

BIOLOGICAL SCIENCES DEGREE PROGRAMS

During the freshman year, biological science majors for the BA, BS, and Biological Sciences Education degrees ordinarily take courses in biology, chemistry, English, foreign language, and mathematics through calculus. Students must consult with their faculty advisors to select wisely from the variety of advanced courses and electives available to sophomores, juniors and seniors.

Many opportunities exist for research experience with a faculty member. In addition, an opportunity for teaching experience exists. Up to 4 credits of research or independent study (BISC 366, BISC 466, or BISC 468) may be counted toward the 33 credits required for the majors in Biological Sciences or Biological Sciences Education. Some biology-related courses in other departments may be counted toward the major (limit 6 credits). See the Biology department website for the list of these courses.

A grade of C- or better must be obtained in all biology courses that are used to satisfy the requirements for the Biological Sciences BA, BS, and Biological Sciences Education degrees. A grade of D (not D-) or better must be obtained in chemistry, physics, and mathematics courses required for the Biological Sciences majors and minor. A grade of C or better is required for all required courses in the concentration in Pharmaceutical Sciences. Biology courses (other than BISC 100) at the 100-level may not be counted toward these degrees.

CONCENTRATIONS IN ECOLOGY & ORGANISMIC BIOLOGY AND IN CELLULAR & MOLECULAR BIOLOGY & GENETICS

Biology is an extraordinarily broad discipline and specialization in more focused areas has become desirable for increasing numbers of students. The BS concentrations in Ecology & Organismic Biology and in Cellular & Molecular Biology & Genetics maintain large portions of the traditional BA degree while offering the opportunity for highly motivated students to pursue a somewhat narrower curriculum. These concentrations require more credit hours in the major and there are two additional requirements. First, a student must have a GPA of 3.0 in selected courses for admission to the degree (see details at the beginning of the statement of requirements for each concentration). Students will typically apply in the spring of their sophomore year. Second, a senior thesis based on original research must be completed and defended. The thesis may also be used for the Degree with Distinction and Honors Degree programs.

CONCENTRATION IN BIOTECHNOLOGY

The Bachelor of Science degree in Biological Sciences with a concentration in Biotechnology is a four-year program that emphasizes laboratory courses/experiences in various aspects of molecular, cellular, and physical biosciences. It is intended for students who hope to be employed in a laboratory setting after graduation and for those who will be continuing their education at the graduate level in a related discipline.

During the first two years at the University, students interested in biotechnology generally take the same courses as those pursuing a BA degree in biological sciences. Students are not
BACHELOR OF ARTS - BIOLOGICAL SCIENCES

admitted into the program until the fall semester of the third year. Students apply for admission in the spring of the sophomore year. Admission is usually limited to 15 students per class. A minimum grade-point index of 2.5 is required for application.

Eligibility for admission to the junior year of the Biotechnology program will be based on the following criteria:

   Minimal cumulative index; first three semesters - 2.5
   Minimal index in the sciences; first three semesters - 2.5
   A grade of C or better in BISC 207, BISC 208, BISC 401 and BISC 300 (or other bio course if BISC 300 is not taken).

   Within the pool of eligible applicants, admission into the program will be determined by academic achievement, and priority will be given to full-time University sophomores with a stated interest in obtaining employment in biotechnology or in pursuing a graduate degree in a related discipline.

CONCENTRATION IN PHARMACEUTICAL SCIENCES

The Bachelor of Science (BS) degree in Biological Sciences, with a concentration in Pharmaceutical Sciences, is a joint program with Thomas Jefferson University College of Health Professions (TJU) toward the award of an undergraduate BS degree and a graduate degree in Pharmacy (PharmD degree). There are UD and TJU components to this program. The UD component of the program consists of the first three years (90 credits) of the Bachelor of Arts degree in Biological Sciences. Students must meet the requirement for Biology BS concentrations. During the fifth semester at UD, and upon final recommendation by the UD/Thomas Jefferson University (TJU) Joint Admissions Committee, students will be admitted to the TJU PharmD program and to the BS Biological Sciences degree with a concentration in Pharmaceutical Sciences. These students will then complete their sixth semester at UD and spend the remaining four years at TJU where they will complete their remaining undergraduate credits and graduate coursework leading to the PharmD degree. The undergraduate courses taken at TJU during the fourth and fifth years will replace courses students would normally take during their senior year in the Biological Sciences BS degree program. These courses must be formally transferred from TJU to UD via the transfer credit process. Furthermore, the curriculum allows students who opt not to continue into the PharmD component of the degree to complete the Biological Sciences BA requirements within one year upon their return to UD.

COOPERATIVE EDUCATION PROGRAM

Through the cooperation of area businesses, industry, and government agencies, students may integrate their academic study with practical work experience. Co-op positions are available during any semester, including winter and summer sessions, for academic credit. Students register for BISC 244 (1-9 credit hours). Credits earned in this pass/fail course count toward graduation but not toward the 33 credit hours needed for the major in biological sciences. Placements vary from part to full time and may be salaried or on a volunteer basis.

Information about this program may be obtained from the Career Services Center or the Biology Advisement Office, telephone (302) 831-2282.

BACHELOR OF ARTS - BIOLOGICAL SCIENCES

University and College requirements.

MAJOR REQUIREMENTS

Minimum grade C- required in all BISC courses for a total of at least 33 credits in biology.

BISC 207/BISC 208 Introductory Biology I and II 8
BISC 302 General Ecology 3
BISC 306 General Physiology 3
BISC 305 Cell Physiology
or
BISC 401 Molecular Biology of the Cell 3
BISC 403 Genetic and Evolutionary Biology 3

One of the following lab courses. The corresponding lecture is a prerequisite. (THE LECTURE AND THE LAB CANNOT BE TAKEN SIMULTANEOUSLY EXCEPT FOR BISC 312, WHICH MAY BE TAKEN CONCURRENTLY WITH BISC 302).

BISC 312 Quantitative Ecology 3
BISC 316 Experimental General Physiology 3
BISC 315 Experimental Cell Biology 3
BISC 411 Experimental Molecular Biology of the Cell 3
BISC 413 Experimental Genetic and Evolutionary Biology 3
A literature-based 600 level course chosen from a list on the department website 3-4

Biology electives at the 300-level or above to total 33 credit hours in Biological Sciences. BISC 100, BISC 207, and BISC 208 count towards the total of 33 credits.

RELATED COURSEWORK
CHEM 103/CHEM 104
General Chemistry 8
CHEM 321  Organic Chemistry 4
CHEM 322  Organic Chemistry 4
or
CHEM 213  Elementary Organic Chemistry 4
CHEM 214  Elementary Biochemistry 3
CHEM 216  Elementary Biochemistry Laboratory 1

PHYS 201/PHYS 202
Introductory Physics I and II 8

MATH 241  Analytic Geometry and Calculus A 4
A grade of D (not D-) or better must be obtained in Chemistry, Physics and Mathematics courses required for all Biological Sciences majors and minor.

ELECTIVES
After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF 124

BACHELOR OF ARTS - BIOLOGICAL SCIENCES EDUCATION

Students planning to major in biology with the purpose of teaching science in secondary schools must identify themselves and plan their programs with the faculty advisor for secondary education as early in their academic careers as possible. The following course of study is designed to prepare students for teacher certification.

University and College requirements.

MAJOR REQUIREMENTS
Minimum grade C- required in all BISC courses for a total of at least 33 credits in biology.

BISC 207/BISC 208
Introductory Biology I and II 8
BISC 302  General Ecology 3
BISC 306  General Physiology 3
BISC 305  Cell Physiology or

BISC 401  Molecular Biology of the Cell 3
BISC 403  Genetic and Evolutionary Biology 3

Two courses in experimental biology. The corresponding lecture is a prerequisite. (THE LECTURE AND THE LAB CANNOT BE TAKEN SIMULTANEOUSLY EXCEPT FOR BISC 312, WHICH MAY BE TAKEN CONCURRENTLY WITH BISC 302).

ONE of:
BISC 312  Quantitative Ecology 3
BISC 316  Experimental General Physiology 3

And ONE of:
BISC 315  Experimental Cell Biology 3
BISC 411  Experimental Molecular Biology of the Cell 3
BISC 413  Experimental Genetic and Evolutionary Biology 3

A literature-based 600 level course chosen from a list on the department website 3-4

Biology electives at the 300-level or above to total 33 credit hours in Biological Sciences. BISC 100, BISC 207, and BISC 208 count towards the total of 33 credits.

RELATED WORK
CHEM 103/CHEM 104
General Chemistry 8

CHEM 213  Elementary Organic Chemistry 4
or
CHEM 321  Organic Chemistry 4

CHEM 214  Elementary Biochemistry 3
CHEM 216  Elementary Biochemistry Laboratory 1

PHYS 201/PHYS 202
Introductory Physics I and II 8

MATH 221  Calculus I 3
or
MATH 241  Analytic Geometry and Calculus A 4

GEOL 107  General Geology 4
Geology Elective 3-4

EDUC 413  Adolescent Development and Educational Psychology 4
EDUC 414  Teaching Exceptional Adolescents 3
EDUC 419  Diversity in Secondary
COLLEGE REQUIREMENTS

Second Writing Requirement: (minimum grade C-) 3
A second writing course involving significant writing experience including two papers with a combined minimum of 3,000 words to be submitted for extended faculty critique of both composition and content. This course must be taken after completion of 60 credit hours. Appropriate writing courses are normally designated in the semester’s Registration Booklet. (See list of courses approved for second writing requirement).

Foreign Language: 0-12
Completion of the intermediate-level course (107 or 112 or 214) in a given language. The number of credits needed and initial placement will depend on number of years of high school study of foreign language. Students with four or more years of high school work in a single foreign language, or who have gain proficiency though other means, may attempt to fulfill the requirement in that language by taking an exemption examination.

ARTS & SCIENCES BREADTH REQUIREMENTS A total of twenty-one credits from Groups A, B and C is required with a minimum of six credits in each group (minimum grade C-) 21

The six credits from each group could be from the same area.

Group A: Understanding and appreciation of the creative arts and humanities.
Up to 3 credits from the University Breadth Requirement: Creative Arts and Humanities may be used to simultaneously satisfy this College of Arts and Sciences Breadth Requirements.

Group B: The study of culture and institutions over time.
Up to 3 credits from the University Breadth Requirement: History and Cultural Change may be used to simultaneously satisfy this College of Arts and Sciences Breadth Requirements.

Group C: Empirically based study of human beings and their environment.
Up to 3 credits from the University Breadth Requirement: Social and Behavioral Sciences may be used to simultaneously satisfy this College of Arts and Sciences Breadth Requirements.

CREDITS TO TOTAL A MINIMUM OF 124
BACHELOR OF SCIENCE - BIOLOGICAL SCIENCES

BACHELOR OF SCIENCE - BIOLOGICAL SCIENCES (PHARMACEUTICAL SCIENCES)

A faculty member advises students in the Program. Requirements for admission are:

Successful completion of all Thomas Jefferson University prerequisites
A cumulative grade point average of at least a 3.3 and at least a 3.0 in all science courses
Completion of prerequisite courses with at least a C in each course, and
Acceptable PCAT scores (scores in the 70th percentile or higher are highly desirable).

Students meeting the above requirements must also submit an application through PharmCAS.

University and College of Arts & Sciences Requirements for BS Degree in Biology with Concentration

I. Prerequisite courses for admission to the Pharmaceutical Sciences concentration
Biological Sciences courses
BISC 207/BISC 208 Introductory Biology I and II 8
BISC 300 Microbiology 4
BISC 306 General Physiology 3
BISC 316 Physiology Laboratory 3
BISC 442 Vertebrate Morphology 4

Physical, Chemical and Mathematical Science requirements
CHEM 103/CHEM 104 General Chemistry I and II 8
CHEM 321/CHEM 322 Organic Chemistry I and II 8
PHYS 201/PHYS 202 Introductory Physics I and II 8
MATH 241 Analytical Geometry and Calculus 4

Additional requirements outside the sciences
ENGL 110 Critical Reading and Writing 3
3 courses in languages, literature, philosophy, religion, arts 9*
3 courses in sociology, psychology, anthropology, political science 9*
*These courses fulfill the Thomas Jefferson University Social Sciences and Humanities required electives. In addition, these courses must be carefully selected to fulfill University Breadth (12 credits), Arts & Sciences Breadth for the BS degree (21 credits), the Multicultural Course Requirement (3 credits), and the Arts & Sciences Second Writing Requirement (3 credits). Courses may fulfill multiple requirements simultaneously. Up to 3 credits of each University Breadth area (Creative Arts and Humanities, History and Cultural Change, Social and Behavioral Sciences) may count towards each A&S Breadth Group (A, B, and C).

II. Required courses at Thomas Jefferson University
Biochemistry 3
Immunology 3
Molecular Biology 3
Biostatistics 3
Pathophysiology I and II 6
Pharmacology I and II 6
Biopharmaceutics and Principles of Clinical Pharmacokinetics 3

BACHELOR OF SCIENCE - BIOLOGICAL SCIENCES (CELL & MOLECULAR BIOLOGY & GENETICS)

A Cell and Molecular Biology & Genetics (CMG) admission committee advises students in the program. Requirements for admission are:
1) Successful completion of all Thomas Jefferson University prerequisites
2) A cumulative grade point average of at least a 3.3 and at least a 3.0 in all science courses
3) Completion of prerequisite courses with at least a C in each course, and
4) Acceptable PCAT scores (scores in the 70th percentile or higher are highly desirable).

Students meeting the above requirements must also submit an application through PharmCAS.

University and College of Arts & Sciences Requirements for BS Degree in Biology with Concentration

I. Prerequisite courses for admission to the CMG concentration
Biological Sciences courses
BISC 207/BISC 208 Introductory Biology I and II 8
BISC 300 Microbiology 4
BISC 306 General Physiology 3
BISC 316 Physiology Laboratory 3
BISC 442 Vertebrate Morphology 4

Physical, Chemical and Mathematical Science requirements
CHEM 103/CHEM 104 General Chemistry I and II 8
CHEM 321/CHEM 322 Organic Chemistry I and II 8
PHYS 201/PHYS 202 Introductory Physics I and II 8
MATH 241 Analytical Geometry and Calculus 4

Additional requirements outside the sciences
ENGL 110 Critical Reading and Writing 3
3 courses in languages, literature, philosophy, religion, arts 9*
3 courses in sociology, psychology, anthropology, political science 9*
*These courses fulfill the Thomas Jefferson University Social Sciences and Humanities required electives. In addition, these courses must be carefully selected to fulfill University Breadth (12 credits), Arts & Sciences Breadth for the BS degree (21 credits), the Multicultural Course Requirement (3 credits), and the Arts & Sciences Second Writing Requirement (3 credits). Courses may fulfill multiple requirements simultaneously. Up to 3 credits of each University Breadth area (Creative Arts and Humanities, History and Cultural Change, Social and Behavioral Sciences) may count towards each A&S Breadth Group (A, B, and C).

II. Required lecture courses:
BISC 305 Cell Physiology 3
BISC 401 Molecular Biology of the Cell 3
BISC 403 Genetic and Evolutionary Biology 3
CHEM 527 Introductory Biochemistry (or equivalent) 3
III. Required courses in experimental biology:
The corresponding lecture is a prerequisite. (THE LECTURE AND THE LAB CANNOT BE TAKEN SIMULTANEOUSLY).

- BISC 315 Experimental Cell Biology
- OR
- BISC 411 Experimental Molecular Biology of the Cell 3
- BISC 413 Experimental Genetic and Evolutionary Biology 3

IV. Senior Thesis 6
- BISC 451 - BISC 452 Senior Thesis (3+3 credit hours)
- OR
- UNIV 401 - BISC 402 Senior Thesis (3+3 credit hours)

V. Electives from the following groups to total 43 credit hours in the major. Note that many courses have prerequisites. Courses must be taken from a minimum of two of the groups and have approval of the faculty research advisor. One of the elective courses must be from the list of approved 600 level courses based on the primary literature.

A. GENETICS
- BISC 491 Human Molecular Cytogenetics 3
- BISC 654 Biochemical Genetics 3
- BISC 656 Evolutionary Genetics 3
- BISC 658 Developmental Genetics 3
- BISC 693 Human Genetics 3

B. MOLECULAR BIOLOGY AND BIOCHEMISTRY
- BISC 602 Molecular Biology of Animal Cells 3
- BISC 679 Virology 3
- CHEM 642 Biochemistry 3

C. CELL BIOLOGY
- BISC 471 Immunology 3
- BISC 408 Histology (or BISC 617 Electron Microscopy) 4
- BISC 612 Advanced Cell Biology 3

D. PHYSIOLOGY
- BISC 605/BISC 606 Advanced Mammalian Physiology 8
- BISC 626/BISC 627 Neuroscience I and II 7
- BISC 660 Environmental Physiology 3
- BISC 675 Cardiopulmonary Physiology 3

E. BIOINFORMATICS
- ANSC 644 Bioinformatics 3

A computer science course beyond the introductory level

F. APPROVED Electives FROM OTHER DEPARTMENTS
A total of six credits from a list of approved courses can be applied towards the credits required for the major. Courses on this list are approved by the Undergraduate Programs Committee of the Department of Biological Sciences.

A grade of D (not D-) or better must be obtained in Chemistry, Physics and Mathematics courses required for all Biological Sciences majors and minor.

VI. Additional requirements outside the Department of Biological Sciences

Credit Hours
- PHYS 201 / PHYS 202 General Physics 8
- CHEM 322 Organic Chemistry 4
- A course in Statistics (STAT) 3

BACHELOR OF SCIENCE - BIOLOGICAL SCIENCES (BIOTECHNOLOGY(BBT))

University and College Requirements for BS degree in Biology with Concentration.

I. Required lower level Biology courses
- BISC 207 Introductory Biology I 4
- BISC 208 Introductory Biology II 4
- BISC 280 Fundamentals of Biotechnology 1
- BISC 300 Introduction to Microbiology 4
- BISC 305 Cell Physiology 3
- BISC 401 Molecular Biology of the Cell 3
- BISC 403 Genetic and Evolutionary Biology 3

II. Required lower-level Biology Laboratory courses
Note that for all the two credit labs, the lecture is a prerequisite. (THE LECTURE AND THE LAB CANNOT BE TAKEN SIMULTANEOUSLY.)

- BISC 411 Experimental Molecular Biology of the Cell 3
- BISC 315 Experimental Cell Biology 3

III. Biology Breadth Requirement
Choose at least one from the following courses:
- BISC 306 General Physiology 3
- BISC 408 Mammalian Histology 4
- BISC 471 Immunobiology 3
- BISC 492 Human and Mammalian Cytogenetics 3

IV. Laboratory Classes
Choose three of the following courses:
BISC 468 Independent Research* 4
BISC 484 Computer-Based Genetics Laboratory 3
BISC 601 Immunochemistry Laboratory 4
BISC 604 Nucleic Acids Laboratory 4
BISC 619 Gene Expression Laboratory 4
*The four credits of BISC 468 must be taken with the same professor and must be over at least two semesters. An approved summer experience, such as University-sponsored summer research, can be substituted for one semester. UNIV 401 plus UNIV 402 or BISC 451 plus BISC 452 (6 credits total) can also substitute for BISC 468.

V. Required Courses from Other Departments
Chemistry
CHEM 103/CHEM 104 General Chemistry 8
CHEM 321/CHEM 322 Organic Chemistry 8

One of the following options:
CHEM 527 Introductory Biochemistry 3
or
CHEM 641 Biochemistry and CHEM 643 Intermediary Metabolism 6

Physics
PHYS 201/CHEM 202 Fundamentals of Physics 8

Math
MATH 241 Analytic Geometry and Calculus A 3

VI. Upper Division Requirements
Choose two courses from the following list. (At least one must be a BISC course.)
ANSC 670 Principles of Molecular Genetics
BISC 600 Biotechnology and Molecular Medicine
BISC 602 Molecular Biology of Animal Cells
BISC 605 Advanced Mammalian Physiology
BISC 612 Advanced Cell Biology
BISC 615 Vertebrate Developmental Biology
BISC 654 Biochemical Genetics
BISC 656 Evolutionary Genetics
BISC 665 Eukaryotic Molecular Biology and Genetics
BISC 671 Advances in Immunology
BISC 679 Virology
BISC 693 Human Genetics
CHEM 645 Proteins: Structure and Function
CHEM 646 DNA-Protein Interactions
CHEM 648 Membrane Biochemistry

Any additional laboratory class (IV) taken above the minimum of three may also count towards the upper division requirements (VI).

Other upper division classes may also be approved at the discretion of the Undergraduate Program Director.

A grade of D (not D-) or better must be obtained in Chemistry, Physics and Mathematics courses required for all Biological Sciences majors and minor.

HONORS BACHELOR OF SCIENCE - BIOLOGICAL SCIENCES - BIOTECHNOLOGY AND CELL & MOLECULAR BIOLOGY & GENETICS

The recipient must complete:

All requirements for the Bachelor of Science degree in Biological Sciences - Biotechnology and Cell & Molecular Biology & Genetics.
All of the University’s generic requirements for the Honors degree.

MINOR IN BIOLOGY

The required courses for the Minor in Biological Sciences are:
BISC 207 and BISC 208

Two courses from:
BISC 300
BISC 302 (or BISC 321)
BISC 306 (or BISC 276)
BISC 401
BISC 403

Additional BISC courses at the 300 level or above to total 19 credits in biology, (including BISC 207 and BISC 208).

CHEM 103 and CHEM 104 (or CHEM 101 and CHEM 102)
CHEM 213 (or CHEM 321)

The requirements include any of the necessary prerequisites for the required courses. A grade of C- or better is required in all biology courses taken for the minor, and a D (not a D-) is required for all non-biology courses for the minor.

MINOR IN COMPUTATIONAL BIOLOGY

The minor in Computational Biology consists of 21 credit hours in the Life and Computing Sciences. A grade of C- or better must be earned in all required courses. Besides required courses, students wishing to minor in Computational Biology must complete a senior thesis, either by registering for UNIV401 and UNIV 402, or through department sponsored research (e.g. BISC 466, independent study). One Life
Science and one Computing Science faculty member must direct the research. The senior thesis committee must be composed of the two research directors and one additional member chosen in consultation with the two research directors. At least one of the members of the committee must be a faculty member in the Department of Biological Sciences. The course requirements for the minor including all prerequisites for the courses are as follows:

BISC 401 Molecular Biology of the Cell 3
(Prerequisites: BISC 207, CHEM 103, CHEM 104, one semester of organic chemistry)

ANSC 644 Bioinformatics 3

CISC 220 Data Structures 3
(Prerequisites: CISC 181 or CISC 120 and CISC 105)
(Corequisites: MATH 210 or MATH 242)

CISC 437 Database Systems 3
(Prerequisite: CISC 220)

MAST 634 Marine Biochemistry 3
(Prerequisite: Permission of the Instructor)

Senior Thesis 6

Black American Studies
Telephone: (302) 831-2897
Program Office: 417 Ewing Hall
http://www.bams.udel.edu
Faculty Listing: http://www.udel.edu/bams/faculty/

Black American Studies (BAS) is a multidisciplinary department offering courses that address historic, cultural, and social phenomena of people of African descent. The department is designed to present a comprehensive study of the origins, conditions, and experiences of Black Americans using the perspectives and techniques of various disciplines in the arts, humanities, social and behavioral sciences. It explores the social, political, economic and cultural roots of contemporary problems, seeking to relate them to the major value systems in the country and the world. The department serves as a catalyst for multiethnic and cultural understanding.

Students from diverse disciplines take Black American Studies courses to fulfill general university requirements as well as to supplement their majors. The interdisciplinary and multidisciplinary nature of the department allows flexibility for students seeking the relationships between their respective majors in other areas and Black American Studies.

Students may choose to pursue a major or a minor in Black American Studies. The major may be completed without a concentration or students may choose to specialize in one of three concentrations.

To declare a major in Black American Studies, a student with a GPA of cumulative 2.0 or higher will be admitted to the major. A grade of C- or better is required for a course to count towards the B.A. degree in Black American Studies. Although some courses are listed in more than one category, a course may only receive credit towards the major in one category.

BACHELOR OF ARTS - BLACK AMERICAN STUDIES

University and College requirements.

REQUIRED COURSES (19 CREDITS)

BAMS 110 Introduction to Black American Studies 3

BAMS 134/HIST 134 History of Africa 3

BAMS 205 or Contemporary African American Issues 3 or
BAMS 206 Survey of African American Culture 3

BAMS 304/HIST 325 or History of Black America to the Civil War 3 or
BAMS 306/HIST 326 History of Black America Since the Civil War 3

BAMS 391 Research Methods in Black American Studies 4

BAMS 490 Senior Project 3

ONE COURSE IN EACH OF THE FOLLOWING AREAS (12 CREDITS):

Comparative and Diasporic Studies (3 credits)
ARTH 206 Introduction to Art and Architecture in Africa 3
ARTH 203 Art of the Black and African Diaspora 3
BAMS 203/ARTH 204 Art, Power and Architecture in Africa 3

Science and one Computing Science faculty member must direct the research. The senior thesis committee must be composed of the two research directors and one additional member chosen in consultation with the two research directors. At least one of the members of the committee must be a faculty member in the Department of Biological Sciences. The course requirements for the minor including all prerequisites for the courses are as follows:

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Senior Thesis 6

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ARTH 203 Art of the Black and African Diaspora 3
BAMS 203/ARTH 204 Art, Power and Architecture in Africa 3

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BACHELOR OF ARTS - BLACK AMERICAN STUDIES

University and College requirements.

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BAMS 134/HIST 134 History of Africa 3

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BAMS 490 Senior Project 3

ONE COURSE IN EACH OF THE FOLLOWING AREAS (12 CREDITS):

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<td>Political Culture by Country</td>
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<td>History of the Caribbean I</td>
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<td>History of the Caribbean II</td>
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<td>Peoples of Africa</td>
<td>3</td>
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<tr>
<td>BAMS 351/ANTH 351</td>
<td>Race and Ethnicity in Latin America</td>
<td>3</td>
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<td>Caribbean Plantation Society and Economy</td>
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<td>Pan Africanism</td>
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<td>BAMS 439/POSC 439</td>
<td>Problems in African Politics</td>
<td>3</td>
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<tr>
<td>HIST 394</td>
<td>Africa Since 1960</td>
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<td>HIST 439</td>
<td>Women and Revolution in Africa</td>
<td>3</td>
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<td>HIST 440</td>
<td>Seminar in Africa under Colonial Rule</td>
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<td>POSC 433</td>
<td>African Politics</td>
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**Arts and Humanities (3 credits)**

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<td>BAMS 373</td>
<td>Hip Hop in the Black Community</td>
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<td>BAMS 307/PHIL 207</td>
<td>Black Thought and Philosophy</td>
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<td>Rhetoric of Black America</td>
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<td>BAMS 440</td>
<td>Themes in Black American Studies (open to juniors/seniors only)</td>
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<tr>
<td>BAMS 313/ENGL 344</td>
<td>African American Literature I</td>
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<td>African American Literature II</td>
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<td>BAMS 347/ENGL 347</td>
<td>Studies in American Literature</td>
<td>3</td>
</tr>
<tr>
<td>BAMS 356/ENGL 356</td>
<td>Studies in Modern/Contemporary Literature</td>
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<tr>
<td>BAMS 382/ENGL 382</td>
<td>Studies in Multicultural Literature in English</td>
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<tr>
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<td>BAMS 215/SOCI 215</td>
<td>Race in Society</td>
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<td>Race and Work in the U.S.</td>
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<tr>
<td>BAMS 352</td>
<td>Black Feminist Theory</td>
<td>3</td>
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<tr>
<td>BAMS 355/CRJU 355</td>
<td>Inequality, Crime, and Justice</td>
<td>3</td>
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<tr>
<td>BAMS 361/SOCI 361</td>
<td>Racial Inequality</td>
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<tr>
<td>CRJU 413</td>
<td>Hate Crimes</td>
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<td>BAMS 415/SOCI 415</td>
<td>Race, Class, and Gender</td>
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<tr>
<td>BAMS 416/PSYC 416</td>
<td>Psychological Perspectives on Black Americans</td>
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<td>BAMS 418/SOCI 418</td>
<td>Race, Gender, and Poverty</td>
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<td>BAMS 420/SOCI 420</td>
<td>Race and Sexuality</td>
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<td>CRJU 444</td>
<td>Capital Punishment and American Culture</td>
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<td>BAMS 439/POSC 439</td>
<td>Problems in African Politics</td>
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<tr>
<td>BAMS 649/UAPP 649</td>
<td>Civil Rights Law and Policy</td>
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**History (3 credits)**

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<td>American Civil Rights Movement</td>
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<td>BAMS 304/HIST 325</td>
<td>History of Black America to the Civil War</td>
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<td>African American Women's History</td>
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<td>BAMS 363/ HIST 333</td>
<td>History of Blacks in the American West</td>
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<td>BAMS 364</td>
<td>African American/Native American Explorations</td>
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<td>BAMS 369/HIST 320</td>
<td>Slave Testimony As Historical Artifact</td>
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**TOTAL CREDITS FOR THE MAJOR** 31
The Black American Studies major is conceived in two ways: one is the general major (outlined above), consisting of 19 required credit hours and 12 credits that fit into four breadth areas: Comparative and Diasporic Studies; Arts and Humanities; Social and Behavioral Sciences; and History.

The second consists of the same required courses for the general major, plus 3 courses (9 credits) in a concentration, plus one elective. The Concentrations allow Black American Studies majors to focus in areas where there is already demonstrated interest and ample courses, and where the additional focus may serve the student’s interest in pursuing advanced degrees in journalism, writing and literature, law and public policy.

The Concentration in Black Art, Literature, and Cultural Studies (BALCS) examines artistic representations and creations of people of African descent to discover how identities shape and are shaped by cultural events, preconceptions, norms, and standards, and how in turn these expressive forms affect ongoing developments of cultural life individually, socially, and globally. As such, this concentration allows students to gain a firm footing in the practice of literary and cultural criticism as they become familiar with humanistic inquiry in the discipline of Black Studies. BALCS is designed to enable students to use a variety of sources and interdisciplinary methods to gain an awareness of multiple cultures, subcultures, and values both within and outside the artistic community of the Diaspora. This concentration thus emphasizes skills in the formal analysis of artistic artifacts, historical inquiry, and cultural contextualization as it pertains to literature, art, music, film, language, and religion in order to connect the reading of culture and texts to their daily lives.

Students who enroll in the Black Art, Literature, and Cultural Studies Concentration must take three (3) courses from among those listed below.

- BAMS 107/MUSC 107 History of Rock 3
- BAMS 203/ARTH 204 Art, Power, and Architecture in Africa 3
- BAMS 207/MUSC 207 History of Jazz 3
- BAMS 305/HIST 305 Images of Race and Ethnicity in American Culture 3
- BAMS 308 Delaware Black History 3
- BAMS 313/ENGL 344

African American Literature 3
BAMS 330 Rhetoric of Black America 3
BAMS 331/HIST 331 History of the Caribbean I 3
BAMS 332/HIST 332 History of the Caribbean II 3
BAMS 333/ANTH 333 Peoples of Africa 3
BAMS 345/ENGL 345 African American Literature II 3
BAMS 347/ENGL 347 Studies in American Literature (upon approval) 3
BAMS 382/ENGL 382 Studies in Multicultural Literature (upon approval) 3
BAMS 395/HIST 395 Pan Africanism 3
BAMS 440 Themes in Black American Studies 3

TOTAL CREDITS 9

The Law, Public Policy and Social Justice concentration focuses students’ coursework around issues of law, inequality, social justice, and public policy as it relates to the global experiences of people of African descent. Our social justice courses draw upon sociology’s long standing interest in normative patterns as well as questions associated with the fields of anthropology, history, political science, social psychology, economics and law. We draw on these fields for theoretical understanding of matters such as legal studies, political activism, and community service. Law and public policy courses focus on the causes and consequences of the unequal distribution of power, wealth, and status in the U.S. and world economy, and collective attempts to change social arrangements. For students interested in focusing primarily on social inequality, this concentration offers courses that include dimensions of stratification (race, class, gender); power structure research and social network analysis; the ideologies that justify and criticize inequalities; and the propagation of social movements.

Students who enroll in the Law, Public Policy and Social Justice Concentration must take three (3) courses from among those listed below.

- BAMS 204/SOCI 204 Urban Communities 3
- BAMS 215/SOCI 215 Race in Society 3
- BAMS 220/HIST 220 American Civil Rights
An undergraduate minor in Black American Studies is available for those students wishing to pursue related careers in this area. The program is designed to present a comprehensive study of the origins, conditions, and experiences of Black Americans using the perspectives and techniques of various disciplines in the humanities and social sciences. It explores the social, political, and economic roots of contemporary problems, seeking to relate them to the major value systems in this country and the world.

Students who are interested in doing research related to a particular area can elect to do an independent study and/or special project on an individual basis.

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<td>African American Women's History</td>
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<td>Race and Work in the United States</td>
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<td>BAMS 352</td>
<td>Black Feminist Theory</td>
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<td>BAMS 381</td>
<td>Understanding Black Men in the Streets and Prison</td>
<td>3</td>
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<tr>
<td>BAMS 415/SOCI 415</td>
<td>Race, Class and Gender</td>
<td>3</td>
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<td>BAMS 418/PHIL 410</td>
<td>Race, Gender and Poverty</td>
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<td>BAMS 420/PHIL 420</td>
<td>Race and Sexuality</td>
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### Total Credits: 9

**MINOR IN BLACK AMERICAN STUDIES**

(18 credits)

An undergraduate minor in Black American Studies is available for those students wishing to pursue related careers in this area.

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</tr>
<tr>
<td>BAMS 134/HIST 134</td>
<td>History of Africa</td>
<td>3</td>
</tr>
<tr>
<td>BAMS 205</td>
<td>Contemporary African American Issues</td>
<td>3</td>
</tr>
</tbody>
</table>

**Or**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BAMS 206</td>
<td>Survey of African American Culture</td>
<td>3</td>
</tr>
<tr>
<td>BAMS 304/HIST 325</td>
<td>History of Black America to the Civil War</td>
<td>3</td>
</tr>
</tbody>
</table>

**ELECTIVES FOR ALL CONCENTRATIONS**

Any one of the following courses will meet this requirement:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BAMS 306/HIST 326</td>
<td>BAMS 307/PHIL 307</td>
<td>3</td>
</tr>
<tr>
<td>BAMS 327/PHIL 327</td>
<td>BAMS 331/HIST 331</td>
<td>3</td>
</tr>
<tr>
<td>BAMS 332/ENGL 344, ENGL 345</td>
<td>BAMS 350, BAMS 355, CRJU 355, BAMS 352, BAMS 373, BAMS 381, BAMS 382/ENGL 382, CRJU 413, BAMS 204/SOCI 204, BAMS 215/SOCI 215, BAMS 415/SOCI 415, BAMS 416/PSYC 416, BAMS 418/SOCI 418, BAMS 439/PSOC 439, BAMS 440 (open to juniors/seniors only), CRJU 444, BAMS 649/UAPP 649, BAMS 650, ARTH 203, ARTH 206, BAMS 134/HIST 134, BAMS 395/HIST 395, HIST 394, HIST 439, HIST 440, POSC 433,</td>
<td>3</td>
</tr>
</tbody>
</table>
The Department of Chemistry and Biochemistry provides five undergraduate degree options: BA in Chemistry, BA in Chemistry Education, BS in Chemistry, BS in Chemistry with concentration in Environmental Chemistry, and a BS in Biochemistry. Honors Degree options are available in the BA in Chemistry, the BA in Chemistry Education, the BS in Chemistry, and the BS in Biochemistry. Minors in Biochemistry or Chemistry are also available.

**BACHELOR OF ARTS - CHEMISTRY**

**University and College Requirements.**

**MAJOR REQUIREMENTS**

A minimum grade C- is required in each CHEM course required for the BA degree in Chemistry.

**CHEM 103/CHEM 104**

General Chemistry

**CHEM 115**

Introduction to Chemical Sciences

**CHEM 220/CHEM 221**

Quantitative Analysis and Laboratory

**CHEM 111/CHEM 112**

General Chemistry

**CHEM 115**

Introduction to Chemical Sciences

**CHEM 120**

Quantitative Chemistry

**CHEM 321/CHEM 322**

Organic Chemistry

**CHEM 331/CHEM 332/CHEM 333/CHEM 334**

Organic Chemistry and Laboratory I and II

**CHEM 437/CHEM 438**

Instrumental Methods and Laboratory

**CHEM 418/CHEM 419/CHEM 445**

Introductory Physical Chemistry and Laboratory

**CHEM 439/CHEM 444/CHEM 445**

Physical Chemistry and Laboratory

**CHEM 465**

Senior Seminar (fall)

One of the following courses:

**CHEM 410**

History of Chemistry

**CHEM 457**

Inorganic Chemistry

**CHEM 527**

Introductory Biochemistry

**CHEM 620**

Analytical Spectroscopy

or any CHEM 6xx-level course

Total of CHEM credits required for the degree: 38

**MATH 241**

Analytic Geometry and Calculus A

**MATH 242**

Analytic Geometry and Calculus B (strongly recommended)

**PHYS 201/PHYS 202**

Introductory Physics I and II

Telephone: (302) 831-2465

http://www.udel.edu/chem/index.html

Faculty Listing: www.udel.edu/chem/faculty.html
### BACHELOR OF ARTS - CHEMISTRY EDUCATION

**PHYS 207/PHYS 208**
- Fundamentals of Physics I and II 8

**ELECTIVES**
- After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree

**CREDITS TO TOTAL A MINIMUM OF 124**

### HONORS BACHELOR OF ARTS: CHEMISTRY

The recipient must complete:

- All requirements for the Bachelor of Arts degree in Chemistry.
- All of the University's generic requirements for the Honors Baccalaureate degree

Note: At least eight of the twelve credits described in the University's generic requirements for the Honors Degree must be in CHEM courses. The remaining four credits must be in a required course in a related technical area, e.g., BISC, MATH, PHYS, CHEM courses at the 600-level or higher may be considered as Honors courses.

The additional requirement of a grade point index of at least 3.30 in chemistry courses at the time of graduation.

### BACHELOR OF ARTS - CHEMISTRY EDUCATION

University and College Requirements.

**MAJOR REQUIREMENTS**
- CHEM courses to total 30 credits minimum.
- CHEM 111/CHEM 112
  - General Chemistry 6
- CHEM 115
  - Introduction to Chemical Sciences 3
- CHEM 120
  - Quantitative Chemistry 3
- or
- CHEM 103/CHEM 104
  - General Chemistry 8
- CHEM 220/CHEM 221
  - Quantitative Analysis and Laboratory 4

One of the following:
- CHEM 213/CHEM 215
  - Elementary Organic Chemistry 4
- CHEM 321/CHEM 322
  - Organic Chemistry 8
- CHEM 331/CHEM 332/ CHEM 333
  - Organic Chemistry and Laboratory 8
- CHEM 437/CHEM 438
  - Instrumental Methods and Laboratory 4

### CHEM 418/ CHEM 445
- Introductory Physical Chemistry and Laboratory 4

or

### CHEM 443/CHEM 445
- Physical Chemistry and Laboratory 4

### CHEM 214/CHEM 216
- Elementary Biochemistry and Laboratory 4

Chemistry courses selected with consent of advisor 0-3

### BISC 207
- Introductory Biology I 4

### GEOL 107
- General Geology 4

### MATH 241/MATH 242
- Analytic Geometry and Calculus A and B 8

### PHYS 201/PHYS 202
- Introductory Physics I and II 8

or

### PHYS 207/PHYS 208
- Fundamentals of Physics I and II 8

### EDUC 413
- Adolescent Development and Educational Psychology 4

### EDUC 414
- Teaching Exceptional Adolescents 3

### EDUC 419
- Diversity in Secondary Education 3

### EDUC 420
- Reading in the Content Areas 1

### EDUC 400
- Student Teaching 9

### SCEN 491
- Teaching Science in Secondary Schools 4

Grade of C- or better required in all required CHEM and EDUC courses and SCEN 491.

To be eligible to student teach, Chemistry Education students must have a GPA of 2.75 in their chemistry major and an overall GPA of 2.5. They must also pass a teacher competency test as established by the University Council on Teacher Education. Students must consult with the teacher education program coordinator to obtain the student application and other information concerning student teacher policies.

**CREDITS TO TOTAL A MINIMUM OF 124**

### HONORS BACHELOR OF ARTS - CHEMISTRY EDUCATION

The recipient must complete:

- All requirements for the Bachelor of Arts degree in Chemistry Education.
All of the University's generic requirements for the Honors Baccalaureate degree. Note: At least eight of the twelve credits described in the University's generic requirements for the Honors Degree must be in CHEM courses. The remaining four credits must be in a required course in a related technical area, e.g., BISC, MATH, PHYS, EDUC. CHEM courses at the 600-level or higher may be considered as Honors courses.

The additional requirement of a grade point index of at least 3.30 in chemistry courses at the time of graduation.

BACHELOR OF SCIENCE - CHEMISTRY

UNIVERSITY REQUIREMENTS
ENGL 110 Critical Reading and Writing (minimum grade C-) 3
First Year Experience (FYE) 0-4
University Breadth Requirement 12
Up to 3 credits from each of the University Breadth Requirement categories may be used to simultaneously satisfy the College of Arts and Sciences Breadth Requirements.
Discovery Learning Experience (DLE) 3
Multi-cultural Course 3

COLLEGE REQUIREMENTS
Writing: (minimum grade C-) 3
A second writing course involving significant writing experience including two papers with a combined minimum of 3,000 words to be submitted for extended faculty critique of both composition and content. This course must be taken after completion of 60 credit hours.
Appropriate writing courses are normally designated in the semester's Registration Booklet. (See list of courses approved for Second Writing Requirement.)
ENGL 410 highly recommended.

Foreign Language: 0-12
Completion of the intermediate-level course (107 or 112) in a modern foreign language. Number of credits needed and initial placement will depend on number of years of high school study of foreign language. Students with four or more years of high school work in a single modern foreign language may attempt to fulfill the requirement in that language by taking an exemption examination.

COLLEGE OF ARTS AND SCIENCES BREADTH REQUIREMENTS (minimum grade C-)
The College Breadth Requirements are in addition to the University Breadth Requirement. Up to 3 credits from each of the University Breadth Requirement categories may be used to simultaneously satisfy these College of Arts and Sciences Breadth Requirements.
A total of twenty-one credits from Groups A, B and C is required with a minimum of six credits in each group. The six credits from each group could be from the same area. 21

Group A Creative Arts and Humanities

Group B History and Cultural Change

Group C Social and Behavioral Sciences

MAJOR REQUIREMENTS
Minimum 46 credits total in CHEM
CHEM 115 Introduction to Chemical Sciences 3
CHEM 111/112 General Chemistry 6
CHEM 120 Quantitative Chemistry 3
CHEM 331/332 Organic Chemistry 6
CHEM 333/334 Organic Chemistry Majors Laboratory I and II 4
CHEM 443/445 Physical Chemistry and Laboratory 4
CHEM 437/438 Instrumental Methods and Laboratory 4
CHEM 527 Introductory Biochemistry 3
or CHEM 641 Biochemistry 3
CHEM 444/446 Physical Chemistry and Laboratory 4
CHEM 457/458 Inorganic Chemistry and Laboratory 4
CHEM 465 Seminar (two semesters, fall & spring) 2
Advanced Chemistry course at 600-level or higher 3
CHEM 468 Undergraduate Research (optional) 3
MATH 241/MATH 242/ MATH 243 Analytic Geometry and Calculus A, B and C 12
PHYS 201/202 Introductory Physics I and II 8
or PHYS 207/208 Fundamentals of Physics I & II 8
BACHELOR OF SCIENCE - BIOCHEMISTRY

Strongly Recommended:
MATH 302 Ordinary Differential Equations I  3

ELECTIVES
After required courses are completed sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF 124

BACHELOR OF SCIENCE - CHEMISTRY (ENVIRONMENTAL CHEMISTRY)

MAJOR REQUIREMENTS
All requirements for the BS in Chemistry must be met. In addition, the following courses are required for the concentration.

One of the following two-semester sequences: 7-8
BISC 207/BISC 208 Introductory Biology I/II
GEOG 152/GEOG 220 Climate and Life/Meteorology
GEOL 105/GEOL 115 Geological Hazards and Laboratory
and
GEOL 107 General Geology

Two of the following three-credit courses: 6
BISC 302 General Ecology
CHEM 608 Environmental Soil Chemistry
CHEM 681 Green Chemistry
CHEM 683 Environmental Chemistry
CHEM 810 Kinetics and Surface Chemistry of Soils
CHEM 855 Marine Inorganic Chemistry
CIEG 433 Hazardous Waste Management
CIEG 437 Water and Waste Water Quality
CIEG 632 Chemical Aspects of Environmental Engineering
CIEG 634 Contaminant Transport and Separation in Environmental Systems
CIEG 636 Biological Aspects of Environmental Engineering
GEOG 412 Physical Climatology
GEOG 420 Atmospheric Physics
GEOG 423 Atmospheric Dynamics
GEOL 421 Environmental and Applied Geology
MAST 482 Introduction to Ocean Sciences
MAST 646 Chemical Oceanography
MAST 681 Remote Sensing of Environment

CREDITS TO TOTAL A MINIMUM OF 124

Candidates for a BS in chemistry must achieve a cumulative GPA of at least 2.00 for all chemistry courses taken. Repeated Chemistry courses will be counted only once in the calculation of the chemistry GPA. The calculation of the chemistry course GPA (2.00 minimum required for graduation) for candidates for the BS degree in Chemistry or Biochemistry will not include grades earned for lower level subdisciplinary courses taken after a higher level course in the same subdiscipline has been taken and passed with a grade of C or higher. Likewise, freshman-level courses may not be used by upperclassmen as GPA enhancers after those required for graduation have been taken. CHEM 342 and CHEM 100 will be regarded as exceptions to the foregoing prohibitions, since their subject matter coverage is considerably different than that found in higher level courses.

Example: A grade earned in CHEM 214 subsequent to a C or better grade earned in CHEM 527 (or CHEM 641/CHEM 642) would not be counted in the chemistry GPA calculation for BS chemistry or biochemistry majors.

BACHELOR OF SCIENCE - BIOCHEMISTRY

UNIVERSITY REQUIREMENTS

ENGL 110 Critical Reading and Writing 3
First Year Experience (FYE) 0-4
University Breadth Requirement 12
Discovery Learning Experience (DLE) 3
Multi-cultural Course 3

COLLEGE REQUIREMENTS
Writing: (minimum grade C-) 3
A second writing course involving significant writing experience including two papers with a combined minimum of 3,000 words to be submitted for extended faculty critique of both composition and content. This course must be taken after completion of 60 credit hours. Appropriate writing courses are normally designated in the semester’s Registration Booklet. (See list of courses approved for Second Writing Requirement.) ENGL 410 is highly recommended.

Foreign Language: 0-12
Completion of the intermediate-level course (107 or 112) in a modern foreign language. Number of credits needed and initial placement depends on number of years of high school study of foreign language. Students with four or more years of high school work in a single modern foreign
language may attempt to fulfill the requirement in that language by taking an exemption examination.

COLLEGE OF ARTS AND SCIENCES BREADTH REQUIREMENTS (minimum grade C-)
The College Breadth Requirements are in addition to the University Breadth Requirement. Up to 3 credits from each of the University Breadth Requirement categories may be used to simultaneously satisfy these College of Arts and Sciences Breadth Requirements.

A total of twenty-one credits from Groups A, B and C is required with a minimum of six credits in each group. The six credits from each group could be from the same area. 21

Group A Creative Arts and Humanities

Group B History and Cultural Change

Group C Social and Behavioral Sciences

MAJOR REQUIREMENTS
Minimum 47 credits total in CHEM
CHEM 111/112 General Chemistry 6
CHEM 115 Introduction to Chemical Sciences 3
CHEM 120 Quantitative Chemistry 3
CHEM 331/332 Organic Chemistry 6
CHEM 333/334 Organic Chemistry Majors Laboratory I and II 4
CHEM 342 Introduction to Biochemistry 3
CHEM 418 Introductory Physical Chemistry I 3

or
CHEM 443 Physical Chemistry 3
CHEM 437/438 Instrumental Methods and Laboratory 4
CHEM 641 Biochemistry 3
CHEM 419 Introductory Physical Chemistry II 3

or
CHEM 444 Physical Chemistry 3
CHEM 445 Physical Chemistry Laboratory 1
CHEM 642 Biochemistry 3
CHEM 643 Intermediary Metabolism 3

Two Advanced Chemistry courses at 600-level 6-8

or
Two Biology courses selected from the following:
BISC 300 Introduction to Microbiology 4
BISC 306 General Physiology 3

CHEM 465 Seminar (two semesters, fall and spring) 2
CHEM 468 Undergraduate Research 3

or One Biology laboratory course selected from the following: 2-4
BISC 300 Introduction to Microbiology 4
BISC 315 Experimental Cell Biology 2
BISC 316 Experimental Physiology 2
BISC 411 Experimental Molecular Biology 2
BISC 413 Advanced Genetics Laboratory 2
BISC 601 Immunochemistry 4

Related Work
MATH 241 Analytic Geometry and Calculus A 4
MATH 242 Analytic Geometry and Calculus B (strongly recommended) 4
BISC 207/BISC 208 Introductory Biology I and II 8
PHYS 201/PHYS 202 Introductory Physics I and II 8

ELECTIVES
After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF 124

Candidates for a BS in biochemistry must achieve a cumulative GPA of at least 2.00 for all chemistry courses taken. Repeated Chemistry courses are counted only once in the calculation of the Chemistry GPA. The calculation of the chemistry course GPA (2.00 minimum required for graduation) for candidates for the BS degree in Chemistry or Biochemistry will not include grades earned for lower level subdisciplinary courses taken after a higher level course in the same subdiscipline has been taken and passed with a grade of C or higher. Likewise, freshman-level courses may not be used by upperclassmen as GPA enhancers after those required for graduation has been taken. CHEM 342 and CHEM 100 will be regarded as exceptions to the foregoing prohibitions, since their subject matter coverage is considerably different than that found in higher level courses.

Example: A grade earned in CHEM 214
HONORS BACHELOR OF SCIENCE - CHEMISTRY OR BIOCHEMISTRY

The recipient must complete:

All requirements for the Bachelor of Science degree in Chemistry or Biochemistry.

All of the University’s generic requirements for the Honors Baccalaureate degree Note: Courses at the 600-level or higher in chemistry in excess of the 600-level courses required for the BS degree may be considered as Honors courses. Only one 3- or 4-credit required course in a related technical area may be considered as part of the twelve credits described in the University’s generic requirements for the Honors Degree.

The additional requirement of a grade point index of at least 3.30 in chemistry courses at the time of graduation.

MINOR IN BIOCHEMISTRY

The minor in biochemistry requires 22 credits as follows:

CHEM 103/CHEM 104
General Chemistry 8

or

CHEM 111/CHEM 112/ CHEM 115
General Chemistry and Introduction to Chemical Sciences 9

CHEM 321/CHEM 322
Organic Chemistry 8

or

CHEM 331/CHEM 332/ CHEM 333
Organic Chemistry 8

CHEM 641 Biochemistry 3
CHEM 642 Biochemistry 3

or

CHEM 643 Intermediary Metabolism 3

Students must have a minimum grade of C- in each course counted toward the minor. CHEM 643 is recommended in place of CHEM 642 for those students who have taken BISC 401 Molecular Biology of the Cell.

MINOR IN CHEMISTRY

The minor in chemistry requires a minimum of 19 credits as follows:

CHEM 103/CHEM 104

(or CHEM 111/CHEM 112/CHEM 115)

8 (or 9)

Any three of the following:

CHEM 220/CHEM 221
(or CHEM 437/CHEM 438) 4
CHEM 321 (or CHEM 331/CHEM 333) 4-5
CHEM 457/CHEM 458 4
CHEM 418/CHEM 445 (or CHEM 443/CHEM 445) 4
CHEM 527 or CHEM 641 3

Students must have a minimum grade of C- in each course counted toward the minor.

Communication

Telephone: (302) 831-8041
http://www.udel.edu/communication/index.html
Faculty Listing: http://www.udel.edu/communication/people_faculty.html

The Communication Department offers an undergraduate major program in Communication, with concentrations in Interpersonal Communication and in Mass Communication. An Honors Degree option is also available.

The major in communication is designed around two central goals: increasing knowledge about communication processes and their impact on society, and developing communication skills and competencies. In pursuing these goals, the Department of Communication has adopted a social and behavioral science orientation toward the study of human communication. All majors study communication in a wide variety of contexts, including interpersonal and mass communication in both mediated and face-to-face settings. A broad spectrum of classes enables students to critically analyze communication as well as recognize their own ethical responsibilities to self and community. The communication faculty is also committed to turning theory into effective skills for speaking, critical thinking, writing, and media production so that academic knowledge and experience extend beyond the classroom into future opportunities for students.

Students enter this major as communication interest majors. A 2.0 overall GPA is required to declare the communication interest major. Communication interest majors must complete the four core courses: COMM 245, COMM 256, COMM 301 and COMM 330. Based on their GPA in these four courses, the top 100 students will annually be allowed to matriculate into the communication major.
Students who major in communication will work with their assigned faculty advisor to plan a program of courses that leads to the degree of Bachelor of Arts.

**BACHELOR OF ARTS - COMMUNICATION (INTERPERSONAL COMMUNICATION)**

Note: A minimum grade of C- must be earned in all required Communication courses.

University and College Requirements.

**MAJOR REQUIREMENTS**

**NOTE:** All 4XX communication courses may be limited to COMM majors. COMM 245, COMM 256, COMM 301, and COMM 330 comprise the four core courses in the communication interest major.

- **COMM 245** Mass Communication and Culture 3
- **COMM 256** Principles of Communication Theory 3
- **COMM 301** Introduction to Communication Research Methods 3
- **COMM 330** Communication and Interpersonal Behavior 3
- **COMM 341** Theories of Interpersonal Communication 3
- **COMM 350** Public Speaking 3

Three courses (nine credits) chosen from the following list of courses: 9

- **COMM 417** Communication and Management of Conflict
- **COMM 421** Intercultural Communication
- **COMM 440** Topics in Interpersonal Communication
- **COMM 442** Topics in Organizational Communication
- **COMM 452** Communication and Persuasion
- **COMM 456** Communication in Organizations
- **COMM 485** Analysis of Face-to-Face Communication

Six to 18 COMM elective credits 6-18 for a total of not less than 33 nor more than 45 COMM credits. These may be taken from the other concentration, from above listing, or from the following:

**Interpersonal Communication Electives**

- **COMM 200** Human Communication Systems
- **COMM 204** Gender and Communication
- **COMM 343** Topics: Interpersonal Communication

**Politics & Media Communication Electives**

- **COMM 305** Topics: Communication & Politics
- **COMM 306** Digital Technology in Politics
- **COMM 319** Topics: Politics and Broadcast Journalism
- **COMM 340** Politics and the Media
- **COMM 427** Broadcast News
- **COMM 444** Global Agenda
- **COMM 447** National Agenda (cross-listed with POSC447)

**Mass Communication Electives**

- **COMM 313** Comm Principles in Advertising
- **COMM 318** Topics in Mass Communication
- **COMM 329** Broadcast News Writing
- **COMM 486** Multi-Media Literacy

**Public Relations Electives**

**NOTE:** COMM 309 should be taken before any other Public Relations courses with the exception of COMM401.

- **COMM 309** Introduction to Public Relations
- **COMM 311** Public Relations Writing
- **COMM 401** Careers in Communication
- **COMM 409** Public Relations Campaign Planning
- **COMM 413** Public Relations Management

**Television Production**

- **COMM 325** Studio Television Production
- **COMM 326** Field Television Production
- **COMM 327** Production Laboratory I
- **COMM 328** Production Laboratory II
- **COMM 388** Video Production Practicum

**General Electives**

- **COMM 351** Oral Communication Fellows
- **COMM 364** Internship
- **COMM 366/COMM 466** Independent Study/Special Problems
- **COMM 367/COMM 467** Experimental Courses not listed in Catalog
- **COMM 468** Undergrad Research in Communication
- **COMM 490, COMM 491** Honors Courses

**ELECTIVES**

After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

**CREDITS TO TOTAL A MINIMUM OF 124**
BACHELOR OF ARTS - COMMUNICATION (MASS COMMUNICATION)

Note: A minimum grade of C- must be earned in all required Communication courses.

University and College Requirements.

MAJOR REQUIREMENTS
NOTE: All 4XX communication courses may be limited to COMM majors. COMM 245, 256, 301, and 330 comprise the four core courses in the communication interest major.
COMM 245 Mass Communication and Culture 3
COMM 256 Principles of Communication Theory 3
COMM 301 Introduction to Communication Research Methods 3
COMM 330 Communication and Interpersonal Behavior 3
COMM 345 Legal Issues of the Mass Media 3
COMM 350 Public Speaking 3
COMM 370 Theories of Mass Communication 3

Two courses (six credits) chosen from the following list of courses: 6
COMM 418 Topics in Mass Communication
COMM 423 Communication, Advertising, & the Consumer
COMM 424 Media Message Analysis
COMM 425 Advanced Topics in Politics and Broadcast Journalism
COMM 450 Mass Communication Effects
COMM 452 Communication and Persuasion
COMM 454 Children and the Mass Media
Six to 18 COMM elective credits 6-18
for a total of not less than 33 nor more than 45
COMM credits. These may be taken from the other concentration, from listing above, or from the following:

Interpersonal Communication Electives
COMM 200 Human Communication Systems
COMM 204 Gender and Communication
COMM 343 Topics: Interpersonal Communication

Mass Communication Electives
COMM 313 Comm Principles in Advertising
COMM 318 Topics in Mass Communication
COMM 329 Broadcast Newswriting
COMM 486 Multi-Media Literacy

POLITICS & MEDIA COMMUNICATION ELECTIVES
COMM 305 Topics: Communication & Politics
COMM 306 Digital Technology in Politics
COMM 319 Topics: Politics and Broadcast Journalism
COMM 340 Politics and the Media
COMM 427 Broadcast News
COMM 444 Global Agenda
COMM 447 National Agenda (cross-listed w/ POSC447)

Public Relations Electives
NOTE: COMM 309 should be taken before any other Public Relations course with the exception of COMM401.
COMM 309 Introduction to Public Relations
COMM 311 Public Relations Writing
COMM 401 Careers in Communication
COMM 409 Public Relations Campaign Planning
COMM 413 Public Relations Program Management

Television Production
COMM 325 Studio Television Production
COMM 326 Field Television Production
COMM 327 Production Laboratory I
COMM 328 Production Laboratory II
COMM 388 Video Production Practicum

General Electives
COMM 351 Oral Communication Fellows
COMM 364 Internship
COMM 366/COMM 466 Independent Study/Special Problems
COMM 367/COMM 467 Experimental Courses not listed in Catalog
COMM 468 Undergrad Research in Communication
COMM 490/COMM 491 Honors Courses

ELECTIVES
After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF 124

HONORS BACHELOR OF ARTS: COMMUNICATION

The recipient must complete:

All requirements for the Bachelor of Arts degree in Communication.
All of the University's generic requirements for the Honors Baccalaureate degree.
Nine of the Honors credits in the major must
be at the 300-level or above and must include at least one 400-level COMM course.

**Comparative Literature**  
Coordinator: Professor Deborah Steinberger  
Foreign Languages and Literatures  
Telephone: (302) 831-2044  
E-mail: steind@udel.edu

Both an undergraduate major and a minor in Comparative Literature are available. The aim of the program in comparative literature is to allow students to study literature in an international and intercultural relationship, across boundaries of nation and language. Comparative literature embraces the study of literary themes, forms, movements and relations, as well as the interrelations of literature and other disciplines. The program offers the student the opportunity, with the aid of an advisor, to construct a program reflecting individual areas of interest.

Students majoring or minoring in comparative literature must have a command of at least one foreign language at the advanced elective level. It is strongly recommended that majors pursue a second foreign language at least through the intermediate level. Students planning to go on to graduate work in comparative literature would be well advised to include work in a classical language in their program. Majors are expected to make use of their command of foreign languages in comparative literature courses.

In addition to the courses designed specifically for students specializing in comparative literature, the program offers a number of courses in cooperation with other departments (English, Foreign Languages and Literatures, Anthropology, Philosophy, etc.).

**BACHELOR OF ARTS - COMPARATIVE LITERATURE**

University and College Requirements.

**MAJOR REQUIREMENTS**  
ENGL/JWST/ARTH 202  
Biblical and Classical Literature 3  
(ENGL 205 or ENGL 206 or CMLT 316 may be substituted with advisor’s approval)

CMLT 207  
Great Writers of the Western World 3

CMLT 208  
Great Writers of the Western World 3

Comparative Literature courses or courses in related fields approved by the advisor.

Nine credits in each of two national literatures studied in the original text with at least three credits at the 400-level.

18

**ELECTIVES**

After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

**CREDITS TO TOTAL A MINIMUM OF** 124

**MINOR IN COMPARATIVE LITERATURE**

The minor requires a minimum of 18 credits, as follows:

- Core courses in comparative literature (6 credits) Two of ENGL/JWST/ARTH 202, CMLT 207, or CMLT 208
- Foreign literature courses (6 credits).
- Advanced elective-level courses studied in the original text.
- Advanced English or Advanced CMLT course (3 credits)
- Approved related area course (3 credits)

**DANCE**  
Telephone: (302) 831-3537

A minor in dance is available for students who have an interest in dance and want a concentration of study in this area to complement their career goals. The minor provides students with the opportunity to study a variety of coursework including, but not limited to, technique, composition and choreography, and elective choices in the historical, cultural, pedagogical, and somatic areas of dance. Additionally, dance minors complete a variable credit capstone experience project.

The minor requires a minimum of 16 credits distributed as follows:

- Technique: 6  
- A minimum of two courses, one of which must be at the 300 level, from the following list: DANC 202, DANC 203, DANC 204, DANC 302, DANC 303, DANC 304
- Choreography and Performance 3  
- One course from the following list: DANC 208, DANC 308, DANC 309
- Capstone Experience DANC 401 1  
- Electives 6  
- Six credits from the following list, chosen in
BACHELOR OF ARTS - ENGLISH

The department offers a minor in literary studies and offers a number of courses that are part of the minor in journalism. The department also works with an interdisciplinary minor in interactive media. A 4+1 program in teaching English as a second language allows students to do graduate work as part of their undergraduate program and attain a master’s degree in TESL in five years.

The department sponsors a number of readings and lectures throughout the academic year, publishes the literary magazine, Caesura, and has an active chapter of Sigma Tau Delta, the national English honor society.

BACHELOR OF ARTS - ENGLISH
(LITERARY STUDIES)

University and College requirements.

MAJOR REQUIREMENTS
The following six courses:
ENGL 101 Tools of Textual Analysis 18
ENGL 102 Texts in Time
ENGL 204 American Literature
ENGL 205 British Literature to 1660
ENGL 206 British Literature 1660-Present
ENGL 480 Literary Studies Seminar

A course in cultural diversity (ENGL 214, ENGL 215, ENGL 344, ENGL 345, ENGL 348, ENGL 349, ENGL 350, ENGL 376, ENGL 378, ENGL 380, ENGL 381, ENGL 382) 3
Nine credits of Literary Studies (ENGL 300, 320-365, 368-389) 9
Six credits of English at the 200-level of above. All courses offered by the English Department, except those designed for non-majors, will satisfy this requirement. 6

ELECTIVES
After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF 124

BACHELOR OF ARTS - ENGLISH
(PROFESSIONAL WRITING)

University and College requirements.

MAJOR REQUIREMENTS
The following six courses
ENGL 101 Tools of Textual Analysis 18
ENGL 102 Texts in Time
ENGL 204 American Literature

Consultation with the minor advisor:
DANC 101, DANC 206, DANC 305, DANC 306, DANC 307, DANC 310, DANC 311, DANC 312, DANC 400, HESC 251, HESC 120
(Ballroom Dance)

Economics
Telephone: (302) 831-2563
http://www.be.udel.edu/economics

The Bachelor of Arts in Economics and Economics Education are offered by the Lerner College of Business and Economics. Please refer to www.lerner.udel.edu/economics for the description and requirements for the majors.

English
Telephone: (302) 831-2361
http://www.english.udel.edu
Faculty Listing: http://www.english.udel.edu/faculty_profiles.htm

The English Department has a widely varied undergraduate program. Undergraduates concentrate in literary studies, film, professional writing, creative writing, ethnic and cultural studies, or drama, or they may elect the program in English education. Students may change their concentration at any time. To be eligible to student teach in the English education program, students must maintain a minimum overall grade point index of 2.75 and 3.0 in the major.

The literary studies concentration includes courses in literature from Britain, America, and around the world. The film concentration includes courses in history and theory of film as well as film and literature, Black cinema, and other subjects. The concentration in professional writing is designed to prepare students for positions as professional writers or editors in industry and government. This concentration requires an internship. The creative writing concentration offers students the opportunity to take courses in scriptwriting, poetry writing, and fiction writing as well as literature courses in these genres. The ethnic and cultural studies concentration emphasizes multicultural literatures in the Americas, folklore, and media studies. The drama concentration allows students to earn the English degree with an emphasis on the study of theatre and literature. The major in English education prepares students to teach English in the secondary schools (grades 7-12). Graduates of this program receive the BA in English and are eligible for teacher certification in 27 states and the Overseas Dependent Schools System.

Graduates of this program receive the BA in English and are eligible for teacher certification in 27 states and the Overseas Dependent Schools System.
ENGL 205 OR ENGL 206  
British Literature to 1660 OR British Literature 1660-Present  
ENGL 222 Introduction to Professional Writing  
ENGL 464 Internship in Professional Writing  

Four of the following courses  
12  
ENGL 312 Written Communications in Business  
ENGL 394 English Language: Rhetorical and Cultural Contexts  
ENGL 410 Technical Writing  
ENGL 411 Rhetoric of the Professions  
ENGL 412 Publication Projects  
ENGL 413 Topics in Professional Writing  
ENGL 414 Editing  
ENGL 416 Designing Online Information  

Six additional English credits  
6  

ELECTIVES  
After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.  

CREDITS TO TOTAL A MINIMUM OF  
124  

BACHELOR OF ARTS - ENGLISH (DRAMA)  

University and College Requirements.  

MAJOR REQUIREMENTS  
The following six courses  
18  
ENGL 101 Tools of Textual Analysis  
ENGL 102 Texts in Time  
ENGL 205 British Literature to 1660  
ENGL 208 Introduction to Drama  
ENGL 324 Shakespeare  
ENGL 372 Studies in Drama  
or  
ENGL 472 London Theatre or Irish Drama in Performance (offered through study abroad)  

ENGL 303 Scriptwriting  
or  
One of the following courses in the Theater Department: THEA 200, THEA 202, THEA 203, THEA 204, THEA 207, THEA 209, THEA 226, and THEA 300 - THEA 311  

Six additional credits of drama-related electives in the Theater Department  
6  

These courses would have to be approved by the student’s English Department advisor, who would be a member of the Drama Concentration faculty. Students may substitute MUSC 103 or MUSC 104 for one of these courses.  

ELECTIVES  
After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.  

CREDITS TO TOTAL A MINIMUM OF  
124  

BACHELOR OF ARTS - ENGLISH (ETHNIC AND CULTURAL STUDIES)  

University and College requirements.  

MAJOR REQUIREMENTS  
The following five courses  
15  
ENGL 101 Tools of Textual Analysis  
ENGL 102 Texts in Time  
ENGL 204 American Literature  
ENGL 205 British Literature to 1660  
ENGL 206 British Literature 1660-Present  

Two of the following courses  
6  
ENGL 207 Introduction to Poetry  
ENGL 208 Introduction to Drama  
ENGL 210 Introduction to the Short Story  

Two of the following workshops  
6  
ENGL 303 Scriptwriting  
ENGL 304 Poetry Writing  
ENGL 305 Fiction Writing  
ENGL 306 Topics in Writing  
ENGL 404 Advanced Poetry Writing  
ENGL 405 Advanced Fiction Writing  

Nine credits of upper-division literature (ENGL 320 - ENGL 390)  
9  

ELECTIVES  
After required courses are completed, sufficient
## MAJOR REQUIREMENTS

The following eight courses: | 24 |
---|---|
ENGL 101 | Tools of Textual Analysis |
ENGL 102 | Texts in Time |
ENGL 204 | American Literature |
ENGL 206 | British Literature 1660-Present |
ENGL 215 | Introduction to Ethnic and Cultural Studies |
ENGL 300 | Texts and Contexts |
ENGL 376 | World Literature |
ENGL 382 | Studies in Multicultural Literature |

One three-credit course in the English Department, drawn from a list of courses approved by the faculty of the concentration OR a three-credit course in the department of Anthropology, Art, Art History, Foreign Languages and Literatures, History, Political Science, or Sociology and Criminal Justice approved by the student's academic advisor or the director of the concentration. | 3 |
Nine additional English credits at the 300- or 400-level. | 9 |
Since ENGL 382 has variable content and may be taken more than once if topics vary, after the course has been taken to fulfill the requirement above, subsequent sections of ENGL 382 may count towards these three English courses.

### ELECTIVES

After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF | 124 |

## BACHELOR OF ARTS - ENGLISH EDUCATION

University and College requirements.

### MAJOR REQUIREMENTS

The following two courses: | 6 |
---|---|
ENGL 101 | Tools of Textual Analysis |
ENGL 102 | Texts in Time |

Three of the following courses: | 9 |
---|---|
ENGL 204 | American Literature |
ENGL 205 | British Literature to 1660 |
ENGL 206 | British Literature 1660-Present |
ENGL 208 | Introduction to Drama |
ENGL 209 | Introduction to the Novel |
ENGL 210 | Introduction to the Short Story |

The following four courses: | 12 |
---|---|
ENGL 217 | Introduction to Film |
ENGL 317 | Film History |
ENGL 318 | Studies in Film (variable content, may be repeated once) |
ENGL 417 | Film Theory and Criticism |

Nine additional English credits at the 300- or 400-level. | 9 |
With the permission of the student's academic advisor or the director of the concentration, students may substitute up to six relevant credits in Art, Art History, Foreign Languages and Literatures, History, or Political Science for up to six of these nine credits.

### ELECTIVES

After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF | 124 |

## BACHELOR OF ARTS - ENGLISH (FILM)

University and College Requirements.

### MAJOR REQUIREMENTS

The following two courses: | 6 |
---|---|
ENGL 101 | Tools of Textual Analysis |
ENGL 102 | Texts in Time |

Three of the following courses: | 9 |
---|---|
ENGL 204 | American Literature |
ENGL 205 | British Literature to 1660 |
ENGL 206 | British Literature 1660-Present |
ENGL 208 | Introduction to Drama |
ENGL 209 | Introduction to the Novel |
ENGL 210 | Introduction to the Short Story |

The following four courses: | 12 |
---|---|
ENGL 217 | Introduction to Film |
ENGL 317 | Film History |
ENGL 318 | Studies in Film (variable content, may be repeated once) |
ENGL 417 | Film Theory and Criticism |

A course in cultural diversity from the following options**: | 3 |
---|---|
ENGL 202, ENGL 214, ENGL 344, ENGL 345, ENGL 348, ENGL 349, ENGL 378, ENGL 380, ENGL 381, ENGL 382 |

A course in writing taken from: ENGL 301 - ENGL 316 | 3 |

A second approved multicultural course that focuses on modern issues concerning ethnicity, gender/sexuality, and/or class from the following: | 3 |
---|---|
ANTH 210-212, ANTH 225, ANTH 230, ANTH 245, ANTH 261, ANTH 310, ANTH 314, ANTH 316, ANTH 333, ANTH 337, ANTH 351, ANTH 360, ANTH 363, ANTH 375, ANTH 380, ANTH 381; BAM 110, BAM 205, BAM 220, BAM 327, BAM 333, BAM 334, BAM 350, BAM 351, BAM 352, BAM 355, BAM 361, BAM 415,
HONORS BACHELOR OF ARTS - ENGLISH
DEGREE WITH DISTINCTION IN ENGLISH OR ENGLISH EDUCATION

Eligible students may elect to pursue the Honors degree in English or the Degree with Distinction. To earn an Honors BA Degree in English (all concentrations) or in English Education, the recipient must complete:

- All of the requirements for the BA degree in English (and, where appropriate, concentration requirements) or in English Education.
- All of the University's generic requirements for the Honors Degree.
- Nine of the Honors credits in the major must be in ENGL courses at the 300 level or above, and these must include at least one ENGL 480 seminar course.

MINOR IN ENGLISH

The following five courses:

1. ENGL 101 Tools of Textual Analysis 3
2. ENGL 102 Texts in Time 3
3. ENGL 204 American Literature 3
4. ENGL 205 British Literature to 1660 3
5. ENGL 206 British Literature 1660-Present 3

Three additional English credits at the 300-level or above. 3

European Studies

Director: Prof. John Patrick Montaño
Telephone: (302) 831-0804
E-mail: jpmont@udel.edu
www.fllt.udel.edu/continental_european.html

European Studies is an interdisciplinary major that blends the humanities and the social sciences. Offered jointly by the departments of History, Political Science, and Foreign Languages and Literatures, it stresses comprehensive knowledge of a particular European country through study of its language, literature, history, political institutions, and international relations. The major also encourages students to take courses in philosophy, art history, music and geography, thereby fostering multifaceted understanding of the target country within its general European context.

Students enrolled in this program will gain the tools they will need in such future undertakings as graduate school, government or other international agencies, international law, or commercial enterprises with an international orientation.

CREDITS TO TOTAL A MINIMUM OF 124

BAMS 455; HDFS 202; JWST 261, JWST 360; SOCI 206, SOCI 356, SOCI 361, SOCI 407, SOCI 415, SOCI 455; WOMS 201, WOMS 202, WOMS 204, WOMS 216, WOMS 222, WOMS 260, WOMS 304, WOMS 310, WOMS 312, WOMS 316, WOMS 332, WOMS 336, WOMS 372, WOMS 363, WOMS 415, WOMS 439, WOMS 444.

LING 101 Introduction to Linguistics 3
ARTH, THEA, MUSC Elective 3
One course in Art History, Theater, or Music 3
Public Speaking/ Performance Elective 3
Select from: COMM 212, COMM 212, COMM 350; THEA 102, THEA 204, THEA 226, THEA 360 3

EDUC 413 Adolescent Development and Educational Psychology 4
EDUC 414 Teaching Exceptional Adolescents 3
EDUC 419 Diversity in Secondary Education 3
EDUC 422 Teaching Reading in Secondary English 3
ENGL 395 Literacy and Technology 3
ENGL 396 Teaching Composition in Secondary Schools 3
ENGL 491 Methods in Teaching Secondary English 3
EDUC 400 Student Teaching 9
ENGL 492 Seminar in Teaching Secondary English 3

English Education students must earn a grade of C- or better in all required ENGL, EDUC, and LING courses. To be eligible to take ENGL 491, students must pass teacher competency tests as established by the University Council on Teacher Education and complete a portfolio. To be eligible to student teach, students must have a GPA of 3.0 in the major and an overall GPA of 2.75. Students must consult with the Student Teaching Coordinator to obtain the student teaching application and other information concerning student teaching policies.

ELECTIVES

After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

* Students who have taken ENGL102, Texts in Time, and later transfer into the major may substitute ENGL 102 for ENGL 295 with advisor approval.

** Other courses may be approved by a student's advisor.
Students in other majors who wish to change their major to European Studies must have a minimum grade point average of 2.3. Students transferring into the major from outside the University of Delaware will have their transcripts evaluated on a case-by-case basis.

Study abroad is strongly recommended for students in this program.

**BACHELOR OF ARTS - EUROPEAN STUDIES**

A minimum grade of C- is required in all courses.

University and College requirements.

**MAJOR REQUIREMENTS**

Foreign Languages and Literatures:
12 credit hours of work at the 200-level and above in a European foreign language (French, German, Italian, Russian, or Spanish), as follows:
3 credits at the 200-level
3 credits at the 200- or 300-level
3 credits in European literature at the 300-level
3 credits in European civilization at the 300- or 400-level

History:
12 credit hours of work in History courses, as follows:
3 credit hours of HIST101 or HIST102, Western Civilization
3 additional credits of History at the 200-, 300- or 400-level
6 additional credits of History at the 300- or 400-level
The 200-, 300-, and 400-level History courses will be drawn from courses such as the following, depending on the student’s specialization: HIST 210, HIST 241, HIST 245, HIST 250, HIST 339, HIST 342, HIST 343, HIST 344, HIST 345, HIST 346, HIST 347, HIST 348, HIST 350, HIST 351, HIST 352, HIST 353, HIST 354, HIST 355, HIST 356, HIST 357, HIST 358, HIST 359, plus 400-level History courses, with the prior approval of the advisor

Political Science and International Relations:
12 credit hours of work in Political Science courses, as follows:
POSC 270 Comparative Politics

One of the following two courses:
POSC 310 European Governments
POSC 372 East Central European Politics

Two of the following courses
POSC 432 Political Systems of the Post-Soviet Union
POSC 441 Problems of Western European Politics by country
POSC 442 Problems of Western European Politics
POSC 300- or 400-level
Topics courses with European content, as approved by the program advisor

9 credit hours of work in any combination of courses in the foreign language, History, Political Science, or other related fields (such as Art History, Geography, Music), all with the prior consent of the student’s advisor. The Honors thesis or Degree with Distinction thesis can be included in this category.

**ELECTIVES**

After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

**CREDITS TO TOTAL A MINIMUM OF 124**

**HONORS BACHELOR OF ARTS - EUROPEAN STUDIES**

The requirements for the Honors BA in European Studies are:

All requirements for the BA in European Studies.

All the University’s generic requirements for the Honors Degree. The Honors credits in the major shall come from at least two different participating departments, and shall include at least two courses at the 300-level or above.

The cumulative grade point average for all courses in the major must be at least 3.400.

**Fashion and Apparel Studies**

Telephone: (302) 831-8714
E-mail: fashion-studies@udel.edu
http://www.udel.edu/fash

The Department of Fashion and Apparel Studies (FASH) prepares students to thrive in the fast-paced field of fashion. Relevant curriculums address the conceptualization, design, pre-production, planning, promotion and distribution of apparel and related products through two undergraduate major courses of study. Examining the social, psychological, historical and cultural influences on fashion, as well as providing a basic understanding of textile materials and production enriches our academic programs. An industry-oriented approach is emphasized.
The Apparel Design major focuses on trend research, conceptualization and pre-production of products for apparel-related industries that meet the functional, expressive, and aesthetic needs and desires of the consumer.

The Fashion Merchandising major addresses the planning, production, promotion and distribution of products in fashion industries to meet consumer need and demand. An Honors Degree option is available for each major.

Students in both majors can benefit from the Department of Fashion and Apparel Studies’ collaboration with the Center for Historic Architecture and Design. Opportunities are available for students interested in material culture and preservation as they relate to apparel design, historic costume, dress and culture, and contemporary consumer behavior.

Students who wish to transfer from another major in the University are advised to contact the Department office regarding application policies and procedures.

BACHELOR OF SCIENCE - APPAREL DESIGN (APD)

The APD and FM curricula consist of a common core supplemented by courses specific to each major.

UNIVERSITY REQUIREMENTS
ENGL 110 Critical Reading and Writing (minimum grade C-) 3

First Year Experience (FYE) See your advisor for a planning guide. 0-4

University Breadth Requirements (minimum grade C-)
Up to 3 credits from each of the University Breadth Requirement
Categories may be used to simultaneously satisfy these College of Arts and Sciences Breadth Requirements. See your advisor for a planning guide. 12

Discovery Learning Experience (DLE) See your advisor for a planning guide. 3

Multi-Cultural Course See your advisor for a planning guide. 3

Some University requirements may be met by your major requirements. See your advisor for a planning guide.

COLLEGE REQUIREMENTS
Second Writing course 3
This course must be taken after completion of 60 credit hours. Appropriate writing courses are normally designated in the semester’s Registration Booklet. See list of courses approved for Arts and Sciences second writing requirement.

MATH 114, MATH 115, or higher/equivalent (minimum grade C-) 3

Intermediate Foreign Language 0-12
Completion of intermediate level course (107 or 202) or higher or Exemption

COLLEGE BREADTH REQUIREMENTS (minimum grade C-)
The College Breadth Requirements are in addition to the University Breadth Requirements. A total of twenty-one credits from Groups A, B, C is required with a minimum of six credits in each group. The six credits from each group could be from the same area.

One course from each of these groups will satisfy University Breadth Requirements. A minimum grade of C- required in courses to count as University Breadth Requirements.

Group A: Creative Arts and Humanities
FASH 133 Fashion Art Studio 3

Group B: History and Cultural Change
Three credits selected from A&S Group B Breadth list 3

Group C: Social and Behavioral Sciences
PSYC 100 General Psychology 3
SOCI 201 Introduction to Sociology 3
ECON 151 Introduction to Microeconomics: Prices and Markets 3

Group D: Mathematics, Natural Sciences, and Technology

CHEM 101 General Chemistry I 4
CHEM 102 General Chemistry II 4

FASHION DEPARTMENT CORE REQUIREMENTS (minimum grade C-)
FASH 210 Seminar on Fashion
The APD and FM curricula consist of a common core supplemented by courses specific to each major.

### University Requirements

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 110</td>
<td>Critical Reading and Writing (minimum grade C-)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>First Year Experience (FYE) See your advisor for a planning guide</td>
<td>0-4</td>
</tr>
</tbody>
</table>

### University Breadth Requirements

Up to 3 credits from each of the University Breadth Requirement Categories may be used to simultaneously satisfy these College of Arts and Sciences Breadth Requirements. See your advisor for a planning guide.

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discovery Learning Experience (DLE) See your advisor for a planning guide</td>
<td>3</td>
</tr>
<tr>
<td>Multi-Cultural Course See your advisor for a planning guide</td>
<td>3</td>
</tr>
</tbody>
</table>

Some University requirements may be met by your major requirements. See your advisor for a planning guide.

### COLLEGE REQUIREMENTS

Second Writing Course (minimum grade C-)
This course must be taken after completion of 60 credit hours. Appropriate writing courses are normally designated in the semester's Registration Booklet. See list of courses approved for Arts and Sciences second writing requirement.

- MATH 114, MATH 115, or higher/equivalent course (minimum grade C-) | 3 |

Intermediate Foreign Language
Completion of intermediate level course (107 or 202) or higher or Exemption | 0-12 |

### COLLEGE BREADTH REQUIREMENTS

The College Breadth Requirements are in addition to the University Breadth Requirement. A total of twenty-one credits from Groups A, B, C is required with a minimum of six credits in each group. The six credits from each group could be from the same area.

One course from each of these groups will satisfy University Breadth Requirements.
A minimum grade of C- required in courses to count as University Breadth Requirements.

Group A: Creative Arts and Humanities
Three credits selected from approved A&S
Group A list 3
FASH 133 Fashion Art Studio 3

Group B: History and Cultural Change
Three credits selected from approved A&S
Group B list 3
Three credits of Costume History selected from FASH 213, FASH 214, or FASH 224. 3

Group C: Social and Behavioral Science
PSYC 100 General Psychology 3
SOCI 201 Introduction to Sociology 3
ECON 151 Introduction to Microeconomics: Prices and Markets 3

Group D: Mathematics, Natural Sciences, and Technology
CHEM 101 General Chemistry 4
CHEM 102 General Chemistry 4

FASHION DEPARTMENT CORE REQUIREMENTS
(minimum grade C-)
FASH 210 Seminar on Fashion Sustainability 3
FASH 215 Fundamentals of Textiles I 3
FASH 218 Fashion Merchandising 3
FASH 220 Fundamentals of Textiles II 3
FASH 325 Multimedia Fashion Presentations 3
FASH 365 Fashion Merchandising and Apparel Design Seminar 1
FASH 380 Product Development 3
FASH 419 Social-Psychological Aspects of Clothing 3
FASH 455 Global Apparel and Textile Trade and Sourcing 3
COMM 212 Oral Communication in Business 3

FASHION MERCHANDISING MAJOR REQUIREMENTS
FASH 355 International Fashion Consumers and Retailers 3
FASH 418 Merchandise Planning 3
FASH 420 Assortment Planning and Sourcing and Buying 3
FASH 430 Apparel Brand Management and Marketing 3
Accounting Course:
Choose from FASH 217, ACCT 207, or ACCT 200 3-4
MISY 160 Business Computing: Tools and Concepts 3

ACCT 352 Law and Social Issues in Business 3
BUAD 301 Introduction to Marketing 3
BUAD 309 Management and Organizational Behavior 3
BUAD 471 Advertising Management 3
BUAD 474 Marketing Channels and Retailing 3
ECON 152 Introduction to Microeconomics 3

ELECTIVES
After required courses are completed; sufficient elective credits must be taken to meet the minimum credits required for the degree. May include Military Science, Music, or Physical Education (only two credits of activity-type Physical Education and four credits of Music ensemble and four credits of 100- and 200-level courses in Military Science/Air Force may be counted toward the degree.

CREDITS TO TOTAL A MINIMUM OF 125

HONORS BACHELOR OF SCIENCE - APPAREL DESIGN

The recipient must complete:

All requirements for the Bachelor of Science degree in Apparel Design.

All the University's generic requirements for the Honors Baccalaureate Degree. Within these requirements, the twelve (12) honors credits earned in courses in the Department of Fashion and Apparel Studies or in closely related areas outside the Department must be approved by the student's advisor. Of these, a minimum of six (6) credits must be taken in the Department of Fashion and Apparel Studies.

HONORS BACHELOR OF SCIENCE - FASHION MERCHANDISING

The recipient must complete:

All requirements for the Bachelor of Science degree in Fashion Merchandising.

All the University's generic requirements for the Honors Baccalaureate Degree. Within these requirements, the twelve (12) honors credits earned in courses in the Department of Fashion and Apparel Studies or in closely related areas outside the Department must be approved by the student's advisor. Of these, a minimum of six (6) credits must be taken in the Department of Fashion and Apparel Studies.
4+1 BACHELOR OF SCIENCE IN FASHION MERCHANDISING - MASTER OF SCIENCE IN FASHION STUDIES

The 4+1 program allows Fashion Merchandising majors who desire more education than the undergraduate major can provide to complete the master's degree in Fashion Studies in half the time. By accelerating attainment of a master's degree which includes writing a thesis, students are provided with expanded opportunities for attaining effective written communication skills, to think critically to solve problems, to work independently, and an opportunity to gain research experience with faculty scholars. A Master of Science in Fashion Studies may result in expanded opportunities for career growth in fashion, apparel, retail and related industries.

Requirements for Admission
The Bachelor of Science degree in Fashion Merchandising requires 120 credits. An additional 32 credits are required for the Master of Science in Fashion Studies, including 6 hours of thesis research. Undergraduate courses taken in the junior and senior years are combined to waive up to 13 credits of bachelor degree course requirements. In the freshmen and sophomore years and first semester of the junior year, students follow the FM curriculum as outlined in the undergraduate catalog.

Students are admitted into the 4+1 program in the spring of the junior year. During the second semester of the junior year and the senior year a minimum of 13 graduate credits at the 600 and 800 levels will be completed. Upon completion of the 4-year undergraduate degree, students will immediately begin taking the remaining graduate credits over a 1-year period.

Specific admission requirements are:
1. Students must be enrolled at the University of Delaware in the Department of Fashion and Apparel Studies pursuing an undergraduate major in Fashion Merchandising.
2. A minimum of 60 undergraduate credits and a GPA equivalent to at least 3.2 on a 4.0 scale in all prior undergraduate college-level course work.
3. Students must take the GRE; however, the GRE is waived if a student has a 3.5 GPA or higher.
4. Primary criteria: Candidates for admission must submit 3 letters of recommendation and a personal statement describing interests, intellectual goals, and how this program would meet their goals and objectives. A resume and a writing sample (research paper) are required.
5. Secondary criteria: In instances such as high applicant numbers, candidates for admission will be evaluated on additional criteria including determination by faculty of the students’ clear promise, or demonstration of, research potential, as well as an Interview.
6. Students are admitted with provisional status until completion of the senior year and 120 credits, whereupon they are granted regular status as graduate students.

Admission to the 4+1 program is competitive. Those who meet stated requirements are not guaranteed admission, nor are those who fail to meet all of those requirements necessarily precluded from admission if they offer other appropriate strengths.

Application deadlines. Review of applicants begins October 15th of the junior year and students are officially notified by November 1st. Students begin the 4+1 program in the spring of the junior year.

Requirements for the Degree

UNIVERSITY REQUIREMENTS
ENGL 110    Critical Reading and Writing (minimum grade C-) 3
FirstYear Experience (FYE) UNIV101 3
Breadth Requirements 12
Discovery Learning Experience (DLE) FASH 419 3
Multi-cultural Course 3

MAJOR REQUIREMENTS
English Writing Course 3
Selected from courses approved for Arts and Sciences second writing requirement.
Arts and Sciences Group B Elective 3
Two Modern Foreign Language Courses COMM 212 Oral Communications in Business 3
CHEM 101    General Chemistry 4
CHEM 102    General Chemistry 4
MATH 114 or
MATH 115 or higher level/equivalent 3
ECON 151    Introduction to Microeconomics: Prices & Markets 3
PSYC 100    General Psychology 3
SOCI 201    Introduction to Sociology 3
FASH 215    Fundamentals of Textiles I 3
FASH 218    Fashion Merchandising 3
FASH 220    Fundamentals of Textiles II 3
Costume History Course 3
FASH 325    Multimedia Fashion Presentations 3
FASH 665    Fashion Studies Seminar 1
FASH 655    Textile & Apparel in the Global Economy 3
FASH 210 Seminar on Fashion and Sustainability 3
FASH 133 Fashion Art Studio 3
FASH 380 Product Development 3

ADDITIONAL FASHION MERCHANDISING CURRICULUM
ACCT 207 Accounting 3
or
FASH 217 Accounting Practice for Merchandise 3
MISY 160 Business Computing: Tools and Concepts 3
ACCT 352 Law and Social Issues in Business 3
BUAD 301 Introduction to Marketing 3
BUAD 309 Management & Organizational Behavior 3
BUAD 471 Advertising Management 3
BUAD 474 Marketing Channels and Retailing 3
ECON 152 Introduction to Macroeconomics 3
FASH 355 International Fashion Consumers and Retailers 3
FASH 418 Merchandising Planning 3
FASH 420 Assortment Planning, Sourcing and Buying 3
FASH 630 Apparel Brand Management & Marketing 3
HDFS 615 Research Methods 3
or
EDUC 607 Educational Research Procedures 3
FASH 800 Research Analysis in Fashion Studies 3

TOTAL UNDERGRADUATE CREDITS 120

In the Graduate year of study students will take 19 credits with no electives or substitutions for requirements.

GRADUATE REQUIREMENTS
FASH 822 Global Fashion Consumer 3
FASH 689 Apparel Supply Chains & Social Responsibility 1
FASH 691 Socially Responsible Apparel: Global Policy 1
FASH 692 Sustaining Global Apparel Supply Chains 3
or
FASH 695 Bringing Social Responsibility to Apparel Corporate Culture 1
FASH 825 Interdisciplinary Approaches to Creative Problem Solving 3
FASH 665 Fashion Studies Seminar 1
EDUC 665 Elementary Statistics 3
FASH 869 Thesis 6

Total 4+1 credits 139

MINOR IN FASHION HISTORY AND CULTURE

The Minor in Fashion History and Culture provides a unique opportunity for students to develop an understanding of the origins and evolution of dress and fashion in relation to global societies and cultures. Clothing and appearance (i.e. dress) are forms of non-verbal communication. Varying social, national, ethnic and gender groups project their identities through their dress. When examined from both historical and contemporary perspectives, as well as through analysis of cultural differences, clothing and appearance contribute to our understanding of the world.

As an interdisciplinary subject, the development and importance of dress and fashion from prehistoric times until present day incorporates historical, economic, aesthetic, technological, social and cultural factors that influenced clothing change.

The minor is open to students majoring in any academic discipline and across all colleges. The minor is awarded only to students who have applied and been admitted to the program. Applications to be admitted into the minor are submitted on-line through UDSIS. Admission will be based on the cumulative GPA of 2.0 and the completion of at least 28 credits at the University of Delaware prior to application.

The credits required for the minor may also be used to meet other distribution requirements, such as degree major requirements and electives. Students seeking a minor in Fashion history and Culture may not take more than 6 credits of the required fashion courses at another institution.

The Minor in Fashion History and Culture requires a total of 18 credits of course work. A minimum grade of C- is required for all courses included in the minor.

Required Courses 3
FASH 114 Fashion Style and Culture 3
FASH 213 Twentieth Century Design: Ethnic Influences 3
FASH 214 Costume History Before 1600 3
FASH 224 Clothing Design and Production 1600 - Edwardian Period 3
FASH 319 Dress and Culture 3

And one of the following:
All majors and minors are encouraged to spend at least one semester, one winter session, or one summer of study in a country in which the foreign language is spoken natively.

Ancient. The BA in Foreign Languages and Literatures leads to a concentration in Ancient Greek and Roman Studies. A minor and an Honors Degree program are also offered. This program provides a liberal education in the fullest sense of that term by giving one the means to identify a problem, solve it without losing sight of its larger implications, express the solution clearly, and persuade others of its validity. Students of classical antiquity learn habits of accuracy and clarity of expression and in the process grapple with the universal ethical, social, and political problems.

Foreign Language Teacher Education Programs

The Department of Foreign Languages and Literatures administers the BA program in Foreign Language Education leading to certification for teaching French, German, Italian, Latin (including a concentration in Classics), and Spanish in grades K-12 or in secondary schools only. Those students pursuing teaching certification are required to study in a country where their particular foreign language is spoken. Information on study abroad programs is available through the Department of Foreign Languages and Literatures.

Placement and Duplicate Credit

Students intending to enroll in a foreign language course will be placed according to the number of years of previous study of that language. As a general rule, students with two years or less of high school foreign language or the equivalent will be placed at the 105 level, students with three years will be placed at the 106-level, and students with four years or more will be placed at the 107-level. Exceptions to this rule can be made only upon the recommendation of the Foreign Language Placement Advisor.

The University computer system will block students from registering for a language course for which they are over-qualified. For example, the system will not permit a student who has had three years of Spanish in high school to enroll in Spanish 105.

Students who are placed in 106 but who do not feel comfortable at that level may enroll at the 105-level with auditor status only. Students who are placed in 106 and who do not feel comfortable at that level may enroll at the 105-level with auditor status only.
who are placed in 107 but who do not feel comfortable at that level may enroll at the 106-level only with permission of the placement advisor.

Students may move one level higher with permission of the placement advisor; no jumping from 105 to 107 is permitted. Students may not place themselves into the 200 level without having completed 107, the foreign language exemption exam, or the AP exam with a score of 3 or higher.

No credit will be granted for a 100-level course if the student has already successfully completed a 200-level course or a course higher in the 100-level sequence in the same language, e.g., credit for a 105 course will not be given if a 106 course has already been successfully completed.

**Skipping Courses:** Students are advised that once they begin their foreign language courses at the 100-level, they are not permitted to skip courses in the sequence (for example, students are not permitted to move directly from 105 to 107). The prerequisite for each 100-level course must be observed.

100-level courses cannot be taken on a pass/fail basis if the courses are being used to satisfy a requirement or are prerequisites of a course used to satisfy a requirement.

It is important to note that only 12 credits of the same elementary/intermediate language will be counted towards the degree.

**Sequence of skills courses:** Skills courses should be taken in the correct sequence. For instance, a student may not take SPAN 205 after taking SPAN courses at the 300 or 400 level.

**Study Abroad**

In addition to several University-sponsored semester programs abroad in such locations as London, Paris, Granada (Spain), and Edinburgh (Scotland), some programs abroad are specifically designed for students of foreign languages.

For the advanced foreign language student, the Department of Foreign Languages and Literatures sponsors fall semester programs in France (Paris), Spain (Granada), Argentina (Buenos Aires), and Austria (Salzburg) and spring semester programs in Austria (Salzburg), Mexico (Puebla), Spain (Granada), and Italy (Rome). Beginning and intermediate-level students may participate in winter and/or summer session programs in Argentina, Brazil, Chile, China, Costa Rica, France, Germany, Greece, Italy, Japan, Martinique, Mexico, Panama, Russia, Spain, or Tunisia.

All French Education, German Education, Italian education, and Spanish Education students must participate in a FLL-sponsored study abroad program in a country where their language is spoken, preferably a semester-long program. Students majoring in French studies, German studies, Italian studies, and Spanish studies are expected to spend a semester abroad, and minors are strongly encouraged to do so.

Please consult the main office of the Department of Foreign Languages and Literatures for further details on all programs.

**Residency Requirement**

At least 15 hours of courses acceptable for credit in the major language and literature, including at least 6 credits at the 400-level, must be taken on campus or as part of a semester abroad program sponsored by the Department of Foreign Languages and Literatures. In the case of the three-languages major, at least 12 of the hours must be taken in Language One on campus or as part of a semester abroad program sponsored by the Department of Foreign Languages and Literatures.

**Miscellany**

**Credit by Examination:** Students may receive up to 6 credits by examination for language courses at the 200-level and above, including but not exceeding one “conversation” class. Native speakers may not receive credits for courses in conversation.

**Language Proficiency:** For information concerning language proficiency see Requirements for the Degree of Bachelor of Arts, under College of Arts and Sciences.

**Waivers or Substitutions:** Waivers or substitutions for any requirements may be requested by seeking recommendation of the advisor and approval of the department chair.

**HONORS BACHELOR OF ARTS:**
FOREIGN LANGUAGES AND LITERATURES;
FOREIGN LANGUAGE EDUCATION;
HISTORY/FOREIGN LANGUAGE;
FOREIGN LANGUAGE/POLITICAL SCIENCE
University and College Requirements.

MAJOR REQUIREMENTS

Nine credits on Ancient Greek and Roman authors or topics chosen from among the following FLLT courses:

- FLLT 202 (Biblical and Classical Literature), 9
- FLLT 316 (Gods, Heroes, and Monsters: Classical Mythology),
- FLLT 322 Topic: (In Love and War: Greek Tragedy),
- FLLT 322 (Topic: Antiquity through Modern Eyes),
- FLLT 320/FLLT 322/FLLT 330 (variable topics, genres, periods, and authors)

Six credits in Ancient Greek or Latin at the 200 level or above 6

A three-credit capstone experience:

- GREK or LATN 4xx capstone if available, FLLT 490, or FLLT 495. Senior thesis or equivalent also fulfills the capstone requirement.

Twenty-one credits chosen from the following programs and departments in accordance with the requirements of the option selected and with prior approval of the advisor: GREK, LATN, FLLT, ANTH, ARTH, HIST, PHIL, POSC, THEA 21

ELECTIVES

After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF 124

NOTE: See your advisor for the specific program of study requirements. The majority of the specific course requirements are generally at the 300-400 level depending on the student's program of study option.

BACHELOR OF ARTS - FOREIGN LANGUAGES AND LITERATURES (ANCIENT GREEK AND ROMAN STUDIES)

This concentration requires the choice of one of the following options: Civilization and Culture, Ancient Greek and Latin Language and Literature, Latin Language and Literature. Students must see their advisor to choose one of these options. Specific requirements for these options can be viewed on-line at www.fllt.udel.edu/lang/classics/programs.htm; paper copies are available at the department office, 103 Jastak-Burgess Hall.

University and College Requirements.

MAJOR REQUIREMENTS

Twelve courses (36 credits), as follows.

- Three of CHIN 2xx 9
- Two of CHIN 3xx 6
- Two of CHIN 4xx 6
BACHELOR OF ARTS - FRENCH EDUCATION

One CHIN 3xx (culture/literature) or 4xx (literature) 3

Two non-language courses in CHIN or FLLT (6 credits), selected from the following:

CHIN 204 (calligraphy), CHIN 208 (culture & society, taught in China), FLLT 321 (Chinese literature), FLLT 330 (modern Chinese women writers), FLLT 331 (Chinese film) 6

A three-credit capstone experience (CHIN 4xx capstone if available, FLLT 490, FLLT 495, or Thesis) 3

One additional course in China-related work (3 credits) may be selected from the above list or chosen from offerings in HIST, ARTH, POSC, PHIL with prior approval of the advisor.

ELECTIVES
After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF 124

BACHELOR OF ARTS - FRENCH EDUCATION

University and College requirements.

MAJOR REQUIREMENTS

Ten courses in French (30 credits):

FREN 211 3
Two of: FREN 301, FREN 302, FREN 355 6
Three of: FREN 3xx, FREN 4xx 9
One FREN 4xx (literature) 3
Three additional FREN 4xx 9

A three-credit capstone experience: FREN 4xx capstone if available, FLLT 490 or FLLT 495 (Senior thesis or equivalent fulfills the capstone requirement) 3

A total of two courses may be taken from a wide selection

FREN 2xx, FREN 207, FREN 208, FREN 3xx, FLLT 202 or any FLLT course numbered 320-330; HIST 339, ARTH 339, POSC 441 (courses offered abroad). Extra-departmental courses: HIST

346 (Age of Louis XIV); HIST 347 (The French Revolution and Napoleon); HIST 361, HIST 475, ARTH 225 (Eighteenth Century Art); ARTH 227 (Modern Art I); ARTH 228 (Modern Art II), ARTH 307.

ELECTIVES
After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF 124

BACHELOR OF ARTS - FRENCH EDUCATION

University and College requirements.

MAJOR REQUIREMENTS

FREN 211 French Reading & Composition 3
FREN 301 French Literature: Prose 3
FREN 302 French Literature: Poetry & Theatre 3

One of the following courses:

FREN 314 French Phonetics 3
FREN 403 Structure of French 3

One of the following courses:

FREN 306 Practical Oral/Written Expression 3
FREN 305 Advanced French Conversation 3

Two of the following courses:

FREN 308 Contemporary France 3
FREN 325 French Civilization I 3
FREN 326 French Civilization II 3
FREN 453 French Civilization III 3

One of the following courses:

FREN 404 Advanced Composition and Grammar 3
FREN 405 Translation and Stylistics 3
FREN 406 Advanced French Language 3

Six credits in French Literature at the 400-level. 6

EDUC 413 Adolescent Development and Educational Psychology 4
EDUC 414 Teaching Exceptional Adolescents 3
EDUC 419 Diversity in Secondary Education 3
EDUC 400 Student Teaching 9
FLLT 421/LING 421 Methods of Teaching Foreign Languages 3
BACHELOR OF ARTS - GERMAN EDUCATION

MAJOR REQUIREMENTS
Thirteen courses (39 credits), as follows:

Ten courses in German:
Two of GRMN 2xx 6
Two of GRMN 311, GRMN 355, GRMN 3xx 6
Two of GRMN 3xx, 4xx 6
Four of GRMN 4xx 12
Prerequisites for GRMN 300-level work are any two 200-level courses.
Prerequisites for GRMN 400-level work are any three 300-level courses.

A three-credit capstone: Grmn 4xx capstone if available, FLLT 490, or FLLT 495 (Senior thesis or equivalent fulfills the capstone requirement) 3
Two courses (6 credits) may be taken from a wide selection: 6
GRMN 2xx, GRMN 3xx, GRMN 4xx, GRMN 208, any FLLT course numbered 320-330; HIST 353, HIST 354, ARTH 339, POSC 441, MUSC 339.

ELECTIVES
After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF 124

BACHELOR OF ARTS - FOREIGN LANGUAGES AND LITERATURES (GERMAN STUDIES)

Specific requirements for this concentration are described below. These requirements can also be viewed on-line at: www.udel.edu/fllt/faculty/lisat/grmnba.html.

Paper copies are available at the department office, 103 Jastak-Burgess Hall.

University and College requirements.
BACHELOR OF ARTS - ITALIAN EDUCATION

To qualify for admission to student teaching, German Education majors must obtain a rating of AL (Advanced Low) on the Oral Proficiency Interview in German. They must also have a GPA of 2.75 overall, a GPA of 3.0 in their required German courses, and a GPA of 3.0 in their required pedagogy courses (FLLT 421, FLLT 422, FLLT 424), in order to be eligible to student teach. See EDUC 400 for pre- and co-requisite examination requirements. Students must consult with the teacher education program coordinator to obtain the student teaching application and other information concerning student teaching policies.

ELECTIVES
After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF 124

BACHELOR OF ARTS - FOREIGN LANGUAGES AND LITERATURES (ITALIAN STUDIES)

Specific requirements for this concentration are described below. These requirements can also be viewed on-line at: www.udel.edu/fllt/lang/italian/italba.html.

Paper copies are available at the department office, 103 Jastak-Burgess Hall.

University and College requirements.

MAJOR REQUIREMENTS
Thirteen courses (39 credits), as follows:

Ten courses in Italian:

One ITAL 2xx 3
ITAL 211 or ITAL 212 3
ITAL 305 or ITAL 306 3
Two of: ITAL 310, ITAL 311, ITAL 355 6
Two of ITAL 4xx (literature) 6
One ITAL 4xx 3
Two of ITAL 3xx, 4xx 6

A three-credit capstone experience: Ital 4xx capstone if available, FLLT 490, or FLLT 495 (Senior thesis or equivalent fulfills the capstone requirement) 3

Two courses (6 credits) at the 200-level or above, chosen with the prior approval of the advisor, from the following areas: Italian, Art History, Comparative Literature, English, Foreign Languages and Literatures, History, Music, Philosophy, Political Science, or Theatre 6

NOTE: Students wishing to pursue a linguistics option in Italian Studies should consult their advisor or the Associate Chair of the department.

ELECTIVES
After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF 124

BACHELOR OF ARTS - FOREIGN LANGUAGES AND LITERATURES (JAPANESE STUDIES)

Specific requirements for this concentration are described below.

University and College requirements.

MAJOR REQUIREMENTS
Twelve courses (36 credits), as follows.

Eight courses in Japanese (24 credits):

Three of JAPN 2xx 9
Two of JAPN 3xx 6
Two of JAPN 4xx 6
One JAPN 3xx (literature) or 4xx (literature) 3

Two non-language courses in JAPN or FLLT (6 credits), selected from the following:

JAPN 204 (calligraphy), JAPN 208 (culture, taught in Kobe), JAPN 308 (culture, taught in Kobe), FLLT 328 (Japanese literature), FLLT 338 (Japanese film), FLLT 380 (Japanese visual culture) 6

One additional course in Japan-related work (3 credits), which may either be selected from the above list of non-language courses in JAPN or FLLT, or chosen from offerings in ANTH, ARTH, HIST, POSC with prior approval of the advisor 3

A three-credit capstone experience (JAPN 4xx capstone if available, FLLT 490, FLLT 495, or Thesis) 3

University and College requirements.

MAJOR REQUIREMENTS
ITAL 200 Italian Grammar Review 3
ITAL 250 Introduction to Business Italian 3
ITAL 205 Italian Conversation 3
ITAL 206 Culture through Conversation 3
ITAL 211 Italian Reading and Composition:
**BACHELOR OF ARTS - LATIN EDUCATION (CLASSICS)**

### MAJOR REQUIREMENTS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>LATN 2xx</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>LATN 3xx</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>LATN 4xx</td>
<td></td>
<td>9</td>
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<tr>
<td>LATN 421</td>
<td>Latin Prose Composition</td>
<td>3</td>
</tr>
<tr>
<td>LATN 431</td>
<td>History of Latin Literature</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 413</td>
<td>Adolescent Development and Educational Psychology</td>
<td>4</td>
</tr>
<tr>
<td>EDUC 414</td>
<td>Teaching Exceptional Adolescents</td>
<td>3</td>
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<tr>
<td>EDUC 419</td>
<td>Diversity in Secondary Education</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 400</td>
<td>Student Teaching</td>
<td>9</td>
</tr>
<tr>
<td>FLLT 421/LING 421</td>
<td>Methods of Teaching Foreign Languages</td>
<td>3</td>
</tr>
<tr>
<td>FLLT 422/LING 422</td>
<td>Language Syllabus Design</td>
<td>3</td>
</tr>
<tr>
<td>LING 424/FLLT 424</td>
<td>Second Language Testing</td>
<td>3</td>
</tr>
<tr>
<td>FLLT 491</td>
<td>Foreign Language Education Capstone</td>
<td>3</td>
</tr>
</tbody>
</table>

Grade of C- or better required in all required LATN, EDUC, FLLT, and LING courses.

To qualify for admission to student teaching, Latin Education majors must have a GPA of 2.75 overall, a GPA of 3.0 in their required Latin courses, and a GPA of 3.0 in their required pedagogy courses (FLLT 421, FLLT 422, and FLLT 424). See EDUC 400 for pre- and co-requisite examination requirements. Students must consult with the teacher education program coordinator to obtain the student teaching application and other information concerning student teaching policies.

### ELECTIVES

After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

**CREDITS TO TOTAL A MINIMUM OF 124**

**BACHELOR OF ARTS - LATIN EDUCATION**

University and College requirements.

**MAJOR REQUIREMENTS**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GREEK 101/GREEK 102</td>
<td>Elementary Ancient Greek</td>
<td>6</td>
</tr>
<tr>
<td>LATN 202</td>
<td>Vergil (prerequisite: LATN 201 or permission of instructor)</td>
<td>3</td>
</tr>
</tbody>
</table>

Two additional LATN courses at the 200- or
University and College requirements.

**MAJOR REQUIREMENTS**

Twelve credits in RUSS electives at the 200-level and above. 12

Twelve credits in RUSS literature at the 300 or 400-level (at least six credits must be at the 400-level) 12

FLLT 327 Topics: Russian Literature in Translation 3

FLLT 375 Topics: Russian and Soviet Culture in Translation 3

A three-credit capstone experience: RUSS 4xx capstone if available, FLLT 490, or FLLT 495 (Senior thesis or equivalent fulfills the capstone requirement) 3

A total of six credits at the 200-level or above, chosen with prior approval of the advisor and according to option requirements, from the following areas: 6

Russian, Art History, Comparative Literature, English, Foreign Languages and Literatures, History, Linguistics, Music, Political Science.

**Electives**

After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

**CREDITS TO TOTAL A MINIMUM OF 124**

**BACHELOR OF ARTS - FOREIGN LANGUAGES AND LITERATURES (SPANISH STUDIES)**

Specific requirements for this concentration are described below. These requirements can also be viewed on-line at: www.fllt.udel.edu/lang/spanish/spanishstudies.html.

Paper copies are available at the department office, 103 Jastak-Burgess Hall.

University and College requirements.

Option I. Spanish Studies: Language and Literature

Twelve courses (36 credits), as follows:

Ten SPAN courses (30 credits):

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPAN 200</td>
<td>3</td>
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<tr>
<td>SPAN 201</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 300</td>
<td>3</td>
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<tr>
<td>Two of SPAN 301, 302, 303, 304, 355, 370</td>
<td>6</td>
</tr>
<tr>
<td>One of SPAN 307, 308, 325, 326</td>
<td>3</td>
</tr>
<tr>
<td>One of SPAN 2xx or 3xx</td>
<td>3</td>
</tr>
<tr>
<td>Two SPAN 4xx (literature)</td>
<td>6</td>
</tr>
<tr>
<td>One SPAN 400-level courses (language, literature, film, culture)</td>
<td>3</td>
</tr>
</tbody>
</table>

To qualify for admission to student teaching, Latin Education majors with a Concentration in Classics must have a GPA of 2.75 overall, a GPA of 3.0 in their required Latin and Greek courses and related work, and a GPA of 3.0 in their required pedagogy courses(FLLT 421, FLLT 422, and FLLT 424). See EDUC 400 for pre- and co-requisite examination requirements. Students must consult with the teacher education program coordinator to obtain the student teaching application and other information concerning student teaching policies.

**CREDITS TO TOTAL A MINIMUM OF 124**

**BACHELOR OF ARTS - FOREIGN LANGUAGES AND LITERATURES (RUSSIAN STUDIES)**

This concentration requires the choice of one of the following options: Language and Literature, Period Studies, Area Studies, Linguistics.

Students must see their advisor to choose one of these options. Specific requirements for these options can be viewed on-line at: www.udel.edu/lang/russianBA.html; paper copies are available at the department office, 103 Jastak-Burgess Hall.
BACHELOR OF ARTS - SPANISH EDUCATION

ELECTIVES
After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF 124

Option IV. Spanish Studies: Language, Culture, and Intensive Portuguese

MAJOR REQUIREMENTS

14 courses (42 credits), as follows:
Same major requirements as above 36 credits
PORT 216 and 316 6

ELECTIVES
After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF 124

NOTE: Students wishing to pursue a linguistics option in Spanish Studies should consult their advisor or the Associate Chair of the department.

BACHELOR OF ARTS - SPANISH EDUCATION

Capstone Experience: Capstone Seminar (SPAN 490) or Thesis (SPAN 466—prior approval of faculty advisor required; UNIV 401/402, or Honors Thesis) 3
One course in Spanish (3 credits) to be chosen from the following: SPAN 4xx or a course in other disciplines taught in the Spanish language (usually as study abroad courses): History, Political Science, Anthropology, Art History 3

NOTE: Students wishing to pursue a linguistics option in Spanish Studies should consult their advisor or the Associate Chair of the department.

ELECTIVES
After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF 124

Option II. Spanish Studies: Language, Literature, and Intensive Portuguese

MAJOR REQUIREMENTS

14 courses (42 credits), as follows:
Same major requirements as above 36 credits
PORT 216 and 316 6

ELECTIVES
After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF 124

Option III. Spanish Studies: Language & Culture

MAJOR REQUIREMENTS

12 courses (36 credits), as follows:
Nine SPAN courses (27 credits):
SPAN 200 3
SPAN 201 3
SPAN 300 3
One of SPAN 301, 302, 303, 304, 355, 370 3
One of SPAN 307, 308, 325, 326 3
One of SPAN 2xx or 3xx 3
One of SPAN 3xx or 4xx 3
Two SPAN 4xx 6
Capstone Experience: SPAN/LAMS 491 3
Two courses in Spanish (6 credits) to be chosen from the following: 6
SPAN 4xx and/or courses in other disciplines taught in the Spanish language (usually as study abroad courses): History, Political Science, Anthropology, Art History

Any three of the following six literature survey courses: 9
SPAN 301 Survey of Spanish Literature
SPAN 302 Survey of Spanish Literature
SPAN 303 Survey of Spanish-American Literature
SPAN 304 Survey of Spanish-American Literature
SPAN 355 Special Topics
SPAN 370 Studies in Spanish Literature (taught in Spain)

One of the following courses: 3
SPAN 300 Advanced Spanish Composition and
BACHELOR OF ARTS - FOREIGN LANGUAGES AND LITERATURES (THREE LANGUAGES)

University and College requirements.

MAJOR REQUIREMENTS

First Language
Six credits at the 200-level and above. 6

Eighteen credits at the 300 and 400-level (at least six credits at the 400 level) 18

Second Language
Six credits at the 200-level and above. 6

Twelve credits at the 300 and 400-level (at least three credits at the 400 level) 12

Third Language
Six credits at or above the 200-level 6

A three-credit capstone experience: FLLT 490 or FLLT 495 (Senior thesis or equivalent fulfills the capstone requirements) 3

ELECTIVES

After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF 124

Notes:
(1) Selection of First Language is limited to those languages in which the Department of Foreign Languages and Literatures offers a major. The second language may be selected from languages in which the Department of Foreign Languages and Literatures offers a major or a minor.
(2) Students enrolled in the Three Languages Major are strongly encouraged to participate in at least one of the study abroad programs sponsored by the Department of Foreign Languages and Literatures.

BACHELOR OF ARTS - HISTORY/CLASSICS, FRENCH, GERMAN, RUSSIAN, OR SPANISH

University and College requirements.

MAJOR REQUIREMENTS

HIST 101 Western Civilization to 1648 3
HIST 102 Western Civilization: 1648 to the Present 3
HIST 268 Seminar 3
BACHELOR OF ARTS - FRENCH, GERMAN, OR SPANISH/POLITICAL SCIENCE

Five 300-level courses, at least two of which must deal with countries that use the chosen foreign language 15

History seminar at the 400-level or above (excluding HIST 491 and HIST 493 and Independent Study) 3

One of the following language options:
Classics
Civilization: Two classical civilization (or culture) courses: e.g., FLLT 202 (Biblical and Classical Literature), FLLT 316 (Mythology), FLLT 320/FLLT 322/FLLT 330 (Variable Topics, Genres, Periods, Authors) 6

Literature: Either 9 credits of Latin at the 200-level or above and 3 credits of Latin at the 300-level or above, or GREK 201 and GREK 202 and 6 credits of Latin at the 200-level or above 12

French
Civilization: FREN 325 (French Civilization I), or FREN 326 (French Civilization II) or FREN 453 (French Civilization III) 3
Literature: FREN 301 (Introduction to French Literature: Prose) and FREN 302 (Introduction to French Literature: Poetry and Theatre) 6
400-level literature course 3
Two courses at the 200, 300, or 400-level 6

German
Civilization: GRMN 325 (German Civilization and Culture) 3
Literature: GRMN 311 (Introduction to German Literature I) and GRMN 3XX 6
400-level literature course 3
Two courses at the 200, 300, or 400-level 6

Russian
Civilization: RUSS 325 (Russian Civilization) 3
Literature: RUSS 310 (Introduction to Russian Literature I) and RUSS 312 (Introduction to Russian Literature II) 6
400-level literature course 3
Two courses at the 200, 300, or 400-level 6

Spanish
Students must choose either the Peninsular (SPAN 325, SPAN 301, SPAN 302) or the Latin American (SPAN 326, SPAN 303, SPAN 304) track.
Civilization: SPAN 325 (Spanish Civilization and Culture) or SPAN 326 (Latin American Civilization and Culture) 3

Literature: SPAN 301 (Survey of Spanish Literature) and SPAN 302 (Survey of Spanish Literature) 6 or SPAN 303 (Survey of Spanish-American Literature) and SPAN 304 (Survey of Spanish-American Literature) 6
400-level literature course 3
Two courses at the 200, 300, or 400-level 6

ELECTIVES
After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

Honors Degree: An Honors Degree option is also available.

CREDITS TO TOTAL A MINIMUM OF 124

BACHELOR OF ARTS - FRENCH, GERMAN, OR SPANISH/POLITICAL SCIENCE

University and College requirements.

MAJOR REQUIREMENTS
French, German, or Spanish/Political Science majors must complete all designated courses and any prerequisite courses (e.g., for admission to the 200-level language courses) with no grade below a C.

POSC 150 The American Political System 3
or POSC 240 Introduction to International Relations 3

POSC 270 Comparative Politics 3
POSC 310 European Governments 3

POSC 441 Problems of Western European Politics by Country 3
or POSC 442 Problems of Western European Politics 3

3 additional courses at the 300 or 400-level with at least 2 at the 400-level and at least 2 in the area of International Relations 9

One of the following language options:
French
FREN 2xx, 3xx, 4xx (prior to semester abroad) 6

FREN 3xx, 4xx 12
FREN 4xx (literature) (Newark campus only) 3
MINORS

FOREIGN LANGUAGE MINORS: An advisor on minors for each language will help students tailor the chosen minor program to their needs. A minor in a foreign language requires a minimum of 18-21 credits at the 200 level or above, as follows:

ANCIENT GREEK AND ROMAN STUDIES: 18 credits as follows: 6 credits in Latin and/or Greek at the 200-level or above, 6 credits in FLLT courses focusing on the literature and/or culture of ancient Greece and Rome, at least one of which must be at the 300-level (e.g. FLLT 316 Gods, Heroes, and Monsters; FLLT 330 Roman Rulers and Rebels; FLLT 322 Greek Tragedy; FLLT 202 Biblical and Classical Literature; FLLT 320/FLLT 330 Society and Spectacle in Ancient Greece and Rome; FLLT 322 Antiquity through Modern Eyes; FLLT 322 Greek Comedy), and 6 credits from related disciplines (at the 200-level or above, at least one of which must be at or above the 300-level) reflecting the students’ particular interests in the classical world and selected with prior approval of the advisor (ANTH, ARTH, FLLT, GREK, HIST, LATN, PHIL, POSC, THEA).

CHINESE: 18 credits including 15 credits in CHIN courses at the 200 level or above, with at least 6 of those credits at the 300 level or above, plus 3 credits in a China-related FLLT course.

FRENCH: 18 credits above the 100-level including FREN 211, FREN 301 and FREN 302, one course at the 300 or 400-level, and one other 400-level course.

GERMAN: 18 credits above the 100-level including at least two courses at the 300-level and two courses at the 400-level. GRMN 208 is not for minor credit.

ITALIAN: 18 credits composed of ITAL 211 or ITAL 212; two additional courses at the 200, 300 or 400-level; one 300-level literature course; one 300 or 400-level course; and one 400-level course.

JAPANESE: 18 credits in JAPN courses taught in Japanese at the 200 level and above, including 6 credits at the 300 level and 3 credits at the 400 level. 3 of the 18 credits may be from a Japan-related FLLT course, JAPN 204, or JAPN 208.

RUSSIAN: 18 credits composed of two Russian courses at the 200-level; three courses at the 300 or 400-level, one of which must be a 400-level

In completing one of the language options above, students are required to participate in a semester abroad program sponsored by the Department of Foreign Languages and Literatures (in Paris, or the equivalent, for French; in Salzburg, or the equivalent, for German; in Granada, or the equivalent, for Spanish). The following courses taken abroad count toward the French, German, or Spanish/Political Science major:

Political Science
POSC 441

French
FREN 306 or FREN 406
FREN 308
FREN 355 or FREN 455
HIST 339

German
GRMN 306 or GRMN 406
GRMN 308
GRMN 355 or GRMN 455
HIST 339

Spanish
SPAN 306 or SPAN 406
SPAN 308
SPAN 355 or SPAN 455
HIST 339

ELECTIVES
After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

Honors Degree: An Honors Degree option is available for the BA in French, German, or Spanish/Political Science.

CREDITS TO TOTAL A MINIMUM OF 124
course; and 3 credits of related work (e.g., Russian history, political science, art, music, etc.).

SPANISH: 21 credits including SPAN 200, SPAN 201 and an additional 200-level course taught in Spanish; two 300-level courses (one must be a Survey of Literature) and two 400-level courses (one must be a literature course).

FOREIGN LANGUAGE STUDIES MINOR:
The Foreign Language Studies (FLS) minor (in French, German or Spanish) requires participation in a UD Department of Foreign Languages and Literatures sponsored semester abroad program. See the Foreign Languages and Literatures Study Abroad Coordinator for details and prerequisites. Credit requirements for the FLS minors are as follows:

<table>
<thead>
<tr>
<th>FRENCH STUDIES MINOR</th>
<th>21 credits including FREN 200, FREN 201, and an additional 200-level course taught in French; two 300-level courses (one must be a Survey of Literature) and two 400-level courses (one must be a literature course).</th>
</tr>
</thead>
<tbody>
<tr>
<td>FREN 2xx, 3xx, 4xx</td>
<td>6</td>
</tr>
<tr>
<td>FREN 306 or FREN 406</td>
<td>3</td>
</tr>
<tr>
<td>FREN 308</td>
<td>3</td>
</tr>
<tr>
<td>Three of: ARTH 339, BUAD 384, FREN 355, FREN 455, HIST 339, POSC 441</td>
<td>9</td>
</tr>
</tbody>
</table>

Minors in French Studies are required to take at least one literature course at the 300-level or above.

Note: A student cannot receive both a French Minor and a French Studies Minor.

GERMAN STUDIES MINOR

GRMN 2xx, 3xx, 4xx (Newark campus only) | 6
GRMN 206, GRMN 306 or GRMN 406 | 3
Four courses at the 200-, 300-, and 400-levels offered during the semester program in Salzburg | 12

No more than 6 of the total 21 credits may be at the 200-level.

Minors in German Studies are required to take at least one literature course at the 300-level or above.

Note: A student cannot receive both a German Minor and a German Studies Minor.

SPANISH STUDIES MINOR

SPAN 2xx, 3xx, 4xx | 6
SPAN 306 or SPAN 406 | 3
SPAN 307 or SPAN 308 | 3
Three of*: ARTH 339, SPAN 370, SPAN 355, SPAN 455, HIST 336, HIST 339, POSC 441, BUAD 384, ANTH 375, POSC 460 | 9

*Courses must be taught in Spanish

Minors in Spanish Studies are required to take at least one literature course at the 300-level or above.

Note: A student cannot receive both a Spanish Minor and a Spanish Studies Minor.

FOREIGN LANGUAGE AND HONORS FOREIGN LANGUAGE CERTIFICATES

The Foreign Language Certificate Program and the Honors Foreign Language Certificate Program are intended to enhance the international dimension of the baccalaureate program for students in majors other than foreign languages by providing them with some first-hand knowledge of a foreign language and a foreign culture.

Students pursuing a major in the Department of Foreign Languages and Literatures or a minor in the language of the certificate are not eligible for these certificates.

To earn a BA degree with a Foreign Language Certificate in Arabic, Brazilian Portuguese, Chinese, French, German, Italian, Japanese, or Spanish, a student is required to complete a designated sequence of four courses at the 200- and 300-levels. This is accomplished through a combination of two courses taken during Study Abroad Sessions in Tunisia, Brazil, China, France, Martinique, Germany, Italy, Japan, Spain, or Latin America, and two courses taken on the Delaware campus. A qualified student must complete the designated sequence of four 200- or 300-level Arabic, Chinese, French, German, Italian, Japanese, or Spanish courses with no grade below a C.

To earn a BA degree with an Honors Foreign Language Certificate in Arabic, French, German, Italian, Japanese, or Spanish, a qualified student must:

- Complete the designated sequence of four 200- or 300-level Arabic, French, German, Italian, Japanese, or Spanish courses with no grade below a B-.
- Achieve a 3.000 cumulative grade index by the time of completion of the course requirements.
- Take all four of these courses for Honors credit.

The Honors Foreign Language Certificate can be earned in addition to other kinds of Honors Certificates. Honors courses taken in the sequence leading to the Honors Foreign Language Certificate can also be applied toward those required for other forms of Honors recognition.
<table>
<thead>
<tr>
<th>ARABIC CERTIFICATE</th>
<th>ITALIAN CERTIFICATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study Abroad Session in Tunisia:</td>
<td>Winter Session in Siena, Italy:</td>
</tr>
<tr>
<td>ARAB 200 Advanced Intermediate Arabic</td>
<td>ITAL 206 Culture through Conversation</td>
</tr>
<tr>
<td>ARAB 208 Contemporary North Africa</td>
<td>ITAL 208 Contemporary Italy I</td>
</tr>
</tbody>
</table>

Delaware Campus: (Check Undergraduate Catalog for prerequisites)
| ARAB 201 Arabic Grammar and Composition | ITAL 211 (or higher) Italian Reading and Composition: Short Fiction |
| ARAB 205 Arabic Conversation | ITAL 3xx |

**ITALIAN CERTIFICATE**

**BRAZILIAN PORTUGUESE CERTIFICATE**

**JAPANESE CERTIFICATE**

**SPANISH CERTIFICATE COURSES**

**ARABIC CERTIFICATE**

**GERMAN CERTIFICATE**

**CHINESE CERTIFICATE**

**FRENCH CERTIFICATE (FRANCE OR MARTINIQUE)**

**GERMANY CERTIFICATE**

**Chinese**

<table>
<thead>
<tr>
<th>Winter Session in Siena, Italy:</th>
<th>Winter Session in Siena, Italy:</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITAL 206 Culture through Conversation</td>
<td>ITAL 208 Contemporary Italy I</td>
</tr>
</tbody>
</table>

Delaware Campus:
| ITAL 211 (or higher) Italian Reading and Composition: Short Fiction | ITAL 208 Contemporary Italy I |
| ITAL 3xx | ITAL 208 Contemporary Italy I |

Alternate Plan for Italian Certificate

Spring Semester in Siena:
| ITAL courses at the 200-, 300- or 400-level | 9 |

plus one of the following, also taught abroad:
| ARTH 339 Art and Architecture of Europe | 3 |
| HIST 339 Topics in Modern European History | 3 |
| POSC 441 Problems of Western European Politics by Country | 3 |

**JAPANESE CERTIFICATE**

<table>
<thead>
<tr>
<th>Study Abroad Session in Kobe, Japan:</th>
<th>Study Abroad Session in Kobe, Japan:</th>
</tr>
</thead>
<tbody>
<tr>
<td>JAPN 206 Culture through Conversation</td>
<td>JAPN 206 Culture through Conversation</td>
</tr>
<tr>
<td>JAPN 208 Contemporary Japan I</td>
<td>JAPN 208 Contemporary Japan I</td>
</tr>
</tbody>
</table>

Delaware Campus:
| JAPN 200 (or higher, excluding 205) Japanese Grammar and Composition | JAPN 200 (or higher, excluding 205) Japanese Grammar and Composition |
| JAPN 3xx | JAPN 3xx |

**SPANISH CERTIFICATE COURSES**

**ARABIC CERTIFICATE**

**GERMAN CERTIFICATE**

**Chinese**

<table>
<thead>
<tr>
<th>Study Abroad Session in Beijing, China:</th>
<th>Study Abroad Session in Beijing, China:</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHIN 206 Culture through Conversation</td>
<td>CHIN 206 Culture through Conversation</td>
</tr>
<tr>
<td>CHIN 208 Contemporary China I</td>
<td>CHIN 208 Contemporary China I</td>
</tr>
</tbody>
</table>

Delaware Campus:
| CHIN 200 (or higher, excluding 205) | CHIN 3xx |
| CHIN 3xx | CHIN 3xx |

**FRENCH CERTIFICATE (FRANCE OR MARTINIQUE)**

<table>
<thead>
<tr>
<th>Study Abroad Session in Caen, France or Fort de France, Martinique:</th>
<th>Study Abroad Session in Caen, France or Fort de France, Martinique:</th>
</tr>
</thead>
<tbody>
<tr>
<td>FREN 206 Culture through Conversation</td>
<td>FREN 206 Culture through Conversation</td>
</tr>
<tr>
<td>One of the following:</td>
<td>One of the following:</td>
</tr>
<tr>
<td>FREN 207 Contemporary Caribbean World (Martinique)</td>
<td>FREN 207 Contemporary Caribbean World (Martinique)</td>
</tr>
<tr>
<td>FREN 208 Contemporary France I (France)</td>
<td>FREN 208 Contemporary France I (France)</td>
</tr>
</tbody>
</table>

Delaware Campus:
| FREN 211 (or higher) French Reading and Composition | FREN 211 (or higher) French Reading and Composition |
| FREN 3xx | FREN 3xx |

**GERMAN CERTIFICATE**

<table>
<thead>
<tr>
<th>Study Abroad Session in Bayreuth, Germany:</th>
<th>Study Abroad Session in Bayreuth, Germany:</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRMN 206 Culture through Conversation</td>
<td>GRMN 206 Culture through Conversation</td>
</tr>
<tr>
<td>GRMN 208 Contemporary Germany I</td>
<td>GRMN 208 Contemporary Germany I</td>
</tr>
</tbody>
</table>

Delaware Campus:
| GRMN 211 (or higher) German Reading and Writing | GRMN 211 (or higher) German Reading and Writing |
| GRMN 3xx | GRMN 3xx |

**History**

Telephone: (302) 831-2371
http://www.udel.edu/History/
Faculty Listing: http://www.udel.edu/History/faculty.html

The History Department offers several options to its undergraduate students. In addition to the regular major, students can choose a concentration in American, European, or World history. In conjunction with the College of Education and Human Development, it offers a History Education program for those choosing careers as secondary school social studies teachers. Concentration options are available for
all majors. Collaboration with the Department of Foreign Languages and Literatures has resulted in a major combining languages with the history of the regions in which those languages are spoken. Honors Degree options are available for all majors and concentrations. The department also maintains an advisory program for prelaw students majoring in history.

The department encourages interdepartmental or double majors that enable a student to develop competence in two areas, such as history and art history, or history and literature. A Degree with Distinction is also possible. An advisor in the History Department can provide details.

BACHELOR OF ARTS - HISTORY

University and College requirements.

MAJOR REQUIREMENTS
HIST 101 Western Civilization to 1648 OR HIST 103 World History I 3
HIST 102 Western Civilization: 1648 to the Present OR HIST 104 World History II 3
HIST 268 Seminar 3

Course in Asian, African, Latin American, or Middle Eastern history 3
History course before 1700, not including HIST 101 and HIST 103 3
History courses at or above the 300 level 12
History seminar at the 400 level or above (excluding HIST 464, HIST 468, HIST 491 and HIST 493 and Independent Study) 3

ELECTIVES
After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF 124

BACHELOR OF ARTS - HISTORY (EUROPEAN HISTORY)

University and College requirements.

MAJOR REQUIREMENTS
HIST 101 Western Civilization to 1648 3
OR
HIST 103 World History I
HIST 102 Western Civilization: 1648 to the Present 3
OR
HIST 104 World History II
HIST 268 Seminar 3

Course in Asian, African, Latin American, or Middle Eastern history 3
History seminar at the 400 level or above (excluding HIST 464, HIST 468, HIST 491 and HIST 493 and Independent Study) 3

Seven (7) courses in the field of emphasis, four of which must be history courses at or above the 300-level. With written approval of the advisor, a student may take two of these courses outside the Department of History.

Eight (8) courses in the field of emphasis, four of which must be history courses at or above the 300-level. With written approval of the advisor, a student may take two of these courses outside the Department of History.

ELECTIVES
After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF 124
BACHELOR OF ARTS - HISTORY EDUCATION

BACHELOR OF ARTS - HISTORY (WORLD HISTORY)

University and College requirements.

MAJORITY REQUIREMENTS

HIST 101  Western Civilization to 1648  3
OR
HIST 103  World History I
HIST 102  Western Civilization: 1648 to the Present  3
OR
HIST 104  World History II
HIST 268  Seminar  3

Course in Asian, African, Latin American, or Middle Eastern history  3

Seven (7) courses in the field of emphasis, four of which must be history courses at or above the 300-level. With written approval of the advisor, a student may take two of these courses outside the Department of History. At least one of these courses has to be non-Western history before 1700 not including HIST 103.

History seminar at the 400 level or above (excluding HIST 464, HIST 468, HIST 491 and HIST 493 and Independent Study)  3

ELECTIVES

After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF 124

BACHELOR OF ARTS - HISTORY EDUCATION

University and College requirements.

MAJOR REQUIREMENTS

HIST 101  Western Civilization to 1648  3
HIST 102  Western Civilization: 1648 to the Present  3
HIST 103  World History I  3
HIST 104  World History II  3
HIST 268  Seminar  3

( Depending on its emphasis, this seminar course can count as three of the required credits in European, American, or Global history.)

History courses on the history of Europe  6
History courses on the history of the United States  12
History courses on the history of Asia, Africa, Latin America, or Middle East  6

The total number of HIST credits required in the major is 36. Course work must include a three credit History seminar at or above the 400 level (excluding HIST 464, HIST468, HIST 491, HIST 493, and independent study), twelve additional credits at or above the 300 level, and six credits at any level.

ECON 151  Introduction to Microeconomics  3
ECON 152  Introduction to Macroeconomics  3
POSC 150  The American Political System  3
GEOG 120  World Regional Geography  3

Additional credits as follows:
3 credits in Economics, 6 credits in Political Science, 6 credits in Geography 15

EDUC 413  Adolescent Development and Educational Psychology  4
EDUC 414  Teaching Exceptional Adolescents  3
EDUC 419  Diversity in Secondary Education  3
HIST 491  Planning a Course of Instruction (fall semester only) (minimum grade C-)  3
HIST 492  Integrating Instructional Technology into Social Studies Teaching  1
HIST 493  Seminar: Problems in Teaching History and Social Sciences (spring semester only)  3
EDUC 420  Reading in the Content Areas  1
EDUC 400  Student Teaching (spring semester only)  9

Grade of C- or better required in all required HIST, major related, and EDUC courses.

To be eligible to student teach, History Education students must have a GPA of 3.0 in their major and an overall GPA of 2.75. They must also pass teacher competency tests as established by the University Council on Teacher Education and complete a learning portfolio. Students must consult with the teacher education program coordinator to obtain the student teaching application and other information concerning student teaching policies.

CREDITS TO TOTAL A MINIMUM OF 124

BACHELOR OF ARTS - HISTORY, HISTORY EDUCATION (AMERICAN HISTORY)

University and College requirements.

MAJOR REQUIREMENTS

HIST 101  Western Civilization to 1648  3
complete a learning portfolio. Students must consult with the teacher education program coordinator to obtain the student teaching application and other information concerning student teaching policies.

**ELECTIVES**

After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

**CREDITS TO TOTAL A MINIMUM OF 124**

**BACHELOR OF ARTS - HISTORY, HISTORY EDUCATION (EUROPEAN HISTORY)**

University and College requirements.

**MAJOR REQUIREMENTS**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 102</td>
<td>Western Civilization: 1648 to the Present</td>
<td>3</td>
</tr>
<tr>
<td>HIST 268</td>
<td>Seminar</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Course in Asian, African, Latin American, or Middle Eastern history</td>
<td>3</td>
</tr>
</tbody>
</table>

Six (6) courses in the field of emphasis, four of which must be history courses at or above the 300-level. With written approval of the advisor, a student may take two of these courses outside the Department of History. 18

History seminar at the 400-level or above (excluding HIST 464, HIST 468, HIST 491, HIST 493 and Independent Study) 3

HIST course work must include a three credit History seminar at or above the 400 level (excluding HIST 464, HIST 491, HIST 493, and independent study), twelve additional credits at or above the 300 level, and six credits at any level.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 151</td>
<td>Introduction to Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 152</td>
<td>Introduction to Macroeconomics</td>
<td>3</td>
</tr>
<tr>
<td>POSC 150</td>
<td>The American Political System</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 120</td>
<td>World Regional Geography</td>
<td>3</td>
</tr>
</tbody>
</table>

Additional credits as follows: 15

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDUC 413</td>
<td>Adolescent Development and Educational Psychology</td>
<td>4</td>
</tr>
<tr>
<td>EDUC 414</td>
<td>Teaching Exceptional Adolescents</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 419</td>
<td>Diversity in Secondary Education</td>
<td>3</td>
</tr>
<tr>
<td>HIST 491</td>
<td>Planning a Course of Instruction (fall semester only) (minimum grade C-)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 492</td>
<td>Integrating Instructional Technology into Social Studies Teaching</td>
<td>1</td>
</tr>
<tr>
<td>HIST 493</td>
<td>Seminar: Problems in Teaching History and Social Sciences (spring semester only)</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 420</td>
<td>Reading in the Content Areas</td>
<td>1</td>
</tr>
<tr>
<td>EDUC 400</td>
<td>Student Teaching (spring semester only)</td>
<td>9</td>
</tr>
</tbody>
</table>

Grade of C- or better required in all required HIST, major related, and EDUC courses.

To be eligible to student teach, History Education students must have a GPA of 3.0 in their major and an overall GPA of 2.75. They must also pass teacher competency tests as established by the University Council on Teacher Education and
EDUC 419  Diversity in Secondary Education  3  
HIST 491  Planning a Course of Instruction (fall semester only) (minimum grade C-)  3  
HIST 492  Integrating Instructional Technology into Social Studies Teaching  1  
HIST 493  Seminar: Problems in Teaching History and Social Sciences (spring semester only)  3  
EDUC 420  Reading in the Content Areas  1  
EDUC 400  Student Teaching (spring semester only)  9  

Grade of C- or better required in all required HIST, major related, and EDUC courses.

To be eligible to student teach, History Education students must have a GPA of 3.0 in their major and an overall GPA of 2.75. They must also pass teacher competency tests as established by the University Council on Teacher Education and complete a learning portfolio. Students must consult with the teacher education program coordinator to obtain the student teaching application and other information concerning student teaching policies.

ELECTIVES
After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF  124

BACHELOR OF ARTS - HISTORY, HISTORY EDUCATION (WORLD HISTORY)

University and College requirements.

MAJOR REQUIREMENTS
HIST 101  Western Civilization to 1648  3  
HIST 102  Western Civilization: 1648 to the Present  3  
HIST 268  Seminar  3  
Course in Asian, African, Latin American, or Middle Eastern history  3  

Seven (7) courses in the field of emphasis, four of which must be history courses at or above the 300-level. With written approval of the advisor, a student may take two of these courses outside the Department of History.  21  

History seminar at the 400-level or above (excluding HIST 464, HIST 468, HIST 491, HIST 493 and Independent Study)  3  

HIST course work must include a three credit History seminar at or above the 400 level (excluding HIST 464, HIST 491, HIST 493, and independent study), twelve additional credits at or above the 300 level, and six credits at any level.

ECON 151  Introduction to Microeconomics  3  
ECON 152  Introduction to Macroeconomics  3  
POSC 150  The American Political System  3  
GEOG 120  World Regional Geography  3  

Additional credits as follows:  15  
3 credits in Economics, 6 credits in Political Science, 6 credits in Geography

EDUC 413  Adolescent Development and Educational Psychology  4  
EDUC 414  Teaching Exceptional Adolescents  3  
EDUC 419  Diversity in Secondary Education  3  
HIST 491  Planning a Course of Instruction (fall semester only) (minimum grade C-)  3  
HIST 492  Integrating Instructional Technology into Social Studies Teaching  1  
HIST 493  Seminar: Problems in Teaching History and Social Sciences (spring semester only)  3  
EDUC 420  Reading in the Content Areas  1  
EDUC 400  Student Teaching (spring semester only)  9  

Grade of C- or better required in all required HIST, major related, and EDUC courses.

To be eligible to student teach, History Education students must have a GPA of 3.0 in their major and an overall GPA of 2.75. They must also pass teacher competency tests as established by the University Council on Teacher Education and complete a learning portfolio. Students must consult with the teacher education program coordinator to obtain the student teaching application and other information concerning student teaching policies.

ELECTIVES
After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF  124
BACHELOR OF ARTS - HISTORY/CLASSICS, FRENCH, GERMAN, RUSSIAN, SPANISH

University and College requirements.

MAJOR REQUIREMENTS

HIST 101 Western Civilization to 1648 3
HIST 102 Western Civilization: 1648 to the Present 3
HIST 268 Seminar 3
Five 300-level HIST courses, at least two of which must deal with countries that use the chosen foreign language 15
History seminar at the 400-level or above (excluding HIST 464, HIST 468, HIST 491, HIST 493 and Independent Study) 3

AND one of the following language options:

Classics:
Civilization: Two classical civilization (or culture) courses: e.g., FLLT 202 (Biblical and Classical Literature) and FLLT 316 (Mythology), FLLT 320/FLLT322/FLLT 330 (Variable Topics, Genres, Authors) 6

Literature: Either 9 credits of Latin at the 200-level or above and 3 credits of Latin at the 300-level or above -OR- GREK 213 and GREK 214 and 6 credits of Latin at the 200-level or above 12

French:
Civilization: FREN 325 French Civilization or FREN 326 French Civilization II or FREN 453 French Civilization III 3

Literature: FREN 301 Introduction to French Literature: Prose 3
FREN 302 Introduction to French Literature: Poetry and Theatre 3
FREN 4xx level literature course 3
Two FREN courses at the 200, 300 or 400-level 6

German:
Civilization: GRMN 325 German Civilization and Culture 3

Literature: GRMN311 Introduction to German

ELECTIVES
After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.
Honors Degree: An Honors Degree option is also available.

CREDITS TO TOTAL A MINIMUM OF 124

HONORS BACHELOR OF ARTS

To receive the BA with Honors, students must complete the following:

All requirements for the BA with a major in History, History Education, or History/Foreign Language.

All the University's generic requirements for the Honors Degree.

For all the History degrees/concentrations, including the joint degree with a Foreign Language, at least six of the Honors credits in the major must be at the 300 level or above.

MINOR IN ISLAMIC STUDIES

The Islamic studies minor without language will require a total 18 credits. In order to complete the minor, students will take two core courses for six credits and four additional courses, three of which will be at the 300 level or above. The six courses that will lead to the Islamic Studies minor are:

Core requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>POSC 201</td>
<td>Introduction to Global Islam</td>
</tr>
<tr>
<td>A second course at the 200-300 level from HIST 381, HIST 377, ARTH 236, or POSC 377</td>
<td></td>
</tr>
</tbody>
</table>

Twelve additional credits to include at least three 300-level courses. Courses are to be chosen from the following approved list:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 212</td>
<td>Peoples and Cultures of the Muslim World</td>
</tr>
<tr>
<td>ANTH 313</td>
<td>Immigrant Islam: The Muslim Diaspora to the West</td>
</tr>
<tr>
<td>ANTH 314</td>
<td>Islam and Gender</td>
</tr>
<tr>
<td>ARTH 236</td>
<td>Arts of the Islamic World</td>
</tr>
<tr>
<td>ENGL 382</td>
<td>Multicultural Literature in English (when offered as the Crescent and the Cross: Contemporary Fiction from Arab Nations and American Writers on the Arab World)</td>
</tr>
<tr>
<td>HIST 130</td>
<td>Islamic Near East 600-1500</td>
</tr>
<tr>
<td>HIST 131</td>
<td>Islamic Near East: 1500-Present</td>
</tr>
<tr>
<td>HIST 340</td>
<td>Ancient Near East and Greece</td>
</tr>
<tr>
<td>HIST 377</td>
<td>Radicalism and Revolution: Islamic Movement/Modern Middle East</td>
</tr>
<tr>
<td>HIST 378</td>
<td>Nationalism in the Modern Middle East</td>
</tr>
<tr>
<td>HIST 380</td>
<td>History of the Arab-Israeli Conflict</td>
</tr>
<tr>
<td>HIST 381</td>
<td>Islam and the West: The History of Mutual Perceptions</td>
</tr>
<tr>
<td>HIST 444</td>
<td>Seminar: Women in the Islamic Middle East</td>
</tr>
<tr>
<td>PHIL 312</td>
<td>Late Medieval Philosophy</td>
</tr>
<tr>
<td>POSC 377</td>
<td>Arab-Israeli Politics</td>
</tr>
<tr>
<td>POSC 410</td>
<td>Islam and Global Affairs</td>
</tr>
<tr>
<td>POSC 430</td>
<td>Intermestic Relations of Islam and America</td>
</tr>
</tbody>
</table>

The designated advisor of the minor will have the authority to make course substitutions for required courses.

Irish Studies

A student may minor in Irish Studies by earning 15 credits in recommended courses, all at or above the 300-level. Required courses include ENGL 351 and HIST 373. For further information, contact Professor John Patrick Montaño by email at jpmont@udel.edu or by phone at (302) 831-0804.

Islamic Studies

Contemporary events dramatically underscore the profound significance of Islam, and the urgent need for a better understanding of global Islam and the Islamic World. Islam has not only become an important force in the global cultural, political and economic spheres, it has become a crucial aspect of the American and Western experience due primarily to the growth of Muslim communities in the West. The minors in Islamic Studies and Islamic Studies with Language are designed to empower students with knowledge of Islam and the Islamic world. For further information contact Professor Muqtedar Khan at mkhan@udel.edu.
The Islamic studies minor with language will require completion of six non-language courses comprising 18 credits, and, additionally, completion of the Arabic language sequence through the 107 level.

Core requirements 6

POSC 201/HIST 201
Introduction to Global Islam
A second course at the 200-300 level from HIST 381, HIST 377, ANTH 212, ARTH 236, or POSC 37 7

Twelve additional credits 12
to include at least three 300-level courses. Courses are to be chosen from the following approved list:

ANTH 212 Peoples and Cultures of the Muslim World
ANTH 313 Immigrant Islam: The Muslim Diaspora to the West
ANTH 314 Islam and Gender
ARTH 236 Arts of the Islamic World
ENGL 382 Multicultural Literature in English (when offered as the Crescent and the Cross: Contemporary Fiction from Arab Nations and American Writers on the Arab World)
HIST 130 Islamic Near East 600-1500
HIST 131 Islamic Near East: 1500-Present
HIST 340 Ancient Near East and Greece
HIST 377 Radicalism and Revolution: Islamic Movement/Modern Middle East
HIST 378 Nationalism in the Modern Middle East
HIST 380 History of the Arab-Israeli Conflict
HIST 381 Islam and the West: The History of Mutual Perceptions
HIST 444 Seminar: Women in the Islamic Middle East
PHIL 312 Late Medieval Philosophy
POSC 377 Arab-Israeli Politics
POSC 410 Islam and Global Affairs
POSC 430 Intermestic Relations of Islam and America

Arabic language courses 12
ARAB 105, ARAB 106, and ARAB 107 (student placement in first course determined according to language placement guidelines)

The designated advisor of the minor will have the authority to make course substitutions for required courses.

**Jewish Studies**

Telephone: (302) 831-3324
E-mail: kaufman@udel.edu
http://www.udel.edu/jsp/index.html

The Jewish Studies Program administers the undergraduate minor in Jewish Studies. The minor examines the Jewish thought and culture in all fields of Western and non-Western civilization. This involves the study of the texts, language, history, and culture of the Jewish people in a variety of environments and in historical and contemporary contexts. As an academic discipline, Jewish Studies concentrates on its own inner continuities, as well as the ways it has affected, and been affected by, its host cultures.

**MINOR IN JEWISH STUDIES**

The interdisciplinary minor in Jewish Studies requires 16 credits. Students must take a minimum of 16 credits from the selection of Jewish Studies courses offered by the Jewish Studies Program (JWST) or cross-listed with another department. The one credit course, JWST 201: Issues and Ideas in Jewish Studies, is the only course required for the minor. Jewish Studies courses are cross-listed with a number of departments including philosophy, English, sociology, history, political science, anthropology and foreign languages. Only 3 credits of Hebrew language and only 3 credits from courses offered during study abroad programs can be counted toward the minor. Three credits of independent course credit can be counted, with approval of the Director of the Jewish Studies Program.

**Journalism**

http://www.english.udel.edu/journalism

The Journalism minor is designed to provide a broad, interdisciplinary approach to journalism education. Coursework focuses on print and broadcast media, with attention to web publishing. Students are encouraged to explore coursework outside the traditional boundaries of the English and Communication departments to include study in areas such as economics, political science, international relations, and visual communications.

This minor is open to students majoring in any academic discipline and across all colleges.

Eighteen credits are required for the Journalism minor. Coursework in the minor must include at least two courses outside a student’s major field. Students must receive a grade of B or better in
The Latin American and Iberian Studies Program offers both a major and minor designed to prepare undergraduate students for careers relating to Latin America and the Iberian Peninsula. This interdisciplinary program provides students with comprehensive training in Spanish language as well as Latin American and Iberian literature, history, politics, geography and anthropology.

Many career opportunities are open to students who major in Latin American and Iberian Studies. Because of their linguistic training and in-depth knowledge of the area, graduates of the program often find employment in government, including the foreign services, as well as in international business and banking, social work, educational organizations and non-governmental organizations that work extensively in Latin America and the Iberian Peninsula. In addition, graduates are well prepared to pursue advanced degrees in Latin American and Iberian Studies.

BACHELOR OF ARTS - LATIN AMERICAN AND IBERIAN STUDIES

University and College requirements.

MAJOR REQUIREMENTS

ANTH 375 Peoples and Cultures of Modern Latin America 3
GEOG 226 Geography of Latin America 3
HIST 135 Introduction to Latin American History 3
POSC 426 Latin American Political Systems 3
SPAN 326 Latin American Civilization and Culture 3

Capstone Approved Capstone Seminar 3

One of the following seven courses: 3
ANTH 251 Ethnic Arts
ANTH 265 High Civilizations in the Americas
ANTH 323 Pre-history of South America
ANTH 337 South American Indians
ANTH 338 Arts and Crafts of Native South America
ANTH 351 Race and Ethnicity in Latin America
ANTH 380 Peoples and Cultures of Mexico and Central America

One of the following six courses: 3
HIST 331/BAMS 331 History of the Caribbean I
HIST 332/BAMS 332 History of the Caribbean II
HIST 349 Modern Hispanic Societies: 1800-present
with the student’s academic advisor, to meet the minimum credit requirement for the degree.

Language Requirement
In addition to the 33 credits required of the major, students must complete SPAN 201 or demonstrate equivalent proficiency. Course work in Portuguese is also recommended.

Study Abroad
Study abroad at a Latin American site for either a semester, or a winter or summer session, is highly recommended. The Puebla, Mexico spring semester is designed for Latin American and Iberian Studies majors and minors.

Advisement and substitutions
In selecting courses for the major, students are encouraged to meet with the Latin American and Iberian Studies advisor and choose courses that together reflect a regional (e.g. Mexico, Caribbean, Central or South America) or topical (e.g. colonialism, development, culture) focus. Substitutions for specified courses may be made with permission of the Director of Latin American and Iberian Studies so long as the same disciplinary distribution is maintained.

CREDITS TO TOTAL A MINIMUM OF 124

HONORS BACHELOR OF ARTS - LATIN AMERICAN AND IBERIAN STUDIES

All Honors degree candidates must complete the following:

1. All requirements for the BA in Latin American and Iberian Studies.
2. All of the University’s generic requirements for the Honors Baccalaureate degree.

MINOR IN LATIN AMERICAN AND IBERIAN STUDIES

Purpose
This is an interdisciplinary program designed to provide undergraduates with an organized focus for their interests in Latin America. The program is designed to enhance, rather than substitute for, a student’s disciplinary major.

Program Requirements: A minimum of 18 credits is required from the following courses, selected from at least four departments:

HIST 135, HIST 336, HIST 430, HIST 477
GEOG 226
SPAN 303, SPAN 304, SPAN 326, SPAN 415, SPAN 430, SPAN 464
This program is designed for any student who is interested in examining the law and its influence on society from a variety of perspectives. Legal studies is not a “pre-law” program, and it does not offer paralegal training. However, the program is a suitable minor for those who plan to pursue professional training. For information on Pre-Law Advisement, consult the Pre-Law web site at www.udel.edu/prelaw.

In addition to offering a minor in Legal Studies, the program sponsors faculty seminars, a lecture series in the law, a student conference and research paper competition, and films.

MINOR IN LEGAL STUDIES

Core Legal Studies Courses
LEST 301  Introduction to Legal Studies (same as CRJU 301) 3
or
LEST 380  Introduction to Law (same as POSC 380)
LEST 210  The Law and You 1
LEST 401  Senior Seminar in Legal Studies (or substitute approved by the Director of LEST) 3

Interdisciplinary Courses
One substantive law course 3
(selected from the list of ten substantive law courses below)
Two electives (selected from the list below) 6
TOTAL CREDITS 16

1. Among the interdisciplinary courses, only one course can be required by the students’ majors or listed (or cross-listed) in the students’ major departments. Interdisciplinary courses must be selected from at least two different departments outside the student’s major.
2. If students are approved to substitute a course in their own major for LEST 401, then none of the interdisciplinary courses may come from the students’ major departments.

If a student has more than one major, the two rules above will be enforced for only one of the majors (whichever one the student chooses).

ELECTIVES:

Accounting
ACCT 350  Business Law I
ACCT 351  Business Law II
ACCT 352  Law and Social Issues in Business

Business Administration
BUAD 315  Legal Aspects of Sport Management
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 345</td>
<td>Legal Issues of the Mass Media</td>
<td>Communication</td>
</tr>
<tr>
<td>CRJU 202</td>
<td>Problems of Criminal Judiciary</td>
<td>Criminal Justice</td>
</tr>
<tr>
<td>CRJU 203</td>
<td>Problems of Corrections</td>
<td>Criminal Justice</td>
</tr>
<tr>
<td>CRJU 301</td>
<td>Introduction to Legal Studies</td>
<td>Criminal Justice</td>
</tr>
<tr>
<td>CRJU 311</td>
<td>Capital Punishment and the Law</td>
<td>Criminal Justice</td>
</tr>
<tr>
<td>CRJU 320</td>
<td>Introduction to Criminal Law</td>
<td>Criminal Justice</td>
</tr>
<tr>
<td>CRJU 324</td>
<td>American Constitutional History</td>
<td>Criminal Justice</td>
</tr>
<tr>
<td>CRJU 345</td>
<td>Sociology of Law</td>
<td>Criminal Justice</td>
</tr>
<tr>
<td>CRJU 346</td>
<td>Psychology and the Law</td>
<td>Criminal Justice</td>
</tr>
<tr>
<td>CRJU 375</td>
<td>Criminal Procedure</td>
<td>Criminal Justice</td>
</tr>
<tr>
<td>CRJU 425</td>
<td>Criminal Law and Social Policy</td>
<td>Criminal Justice</td>
</tr>
<tr>
<td>CRJU 428</td>
<td>Corporate Crime</td>
<td>Criminal Justice</td>
</tr>
<tr>
<td>CRJU 435</td>
<td>Punishing Speech</td>
<td>Criminal Justice</td>
</tr>
<tr>
<td>CRJU 446</td>
<td>Judging the Jury</td>
<td>Criminal Justice</td>
</tr>
<tr>
<td>CRJU 450</td>
<td>Prisoners and the Law</td>
<td>Criminal Justice</td>
</tr>
<tr>
<td>CRJU 456</td>
<td>Lawyers and Society</td>
<td>Criminal Justice</td>
</tr>
<tr>
<td>CRJU 457</td>
<td>Criminal Evidence</td>
<td>Criminal Justice</td>
</tr>
<tr>
<td>CRJU 475</td>
<td>Social Science and the Law</td>
<td>Criminal Justice</td>
</tr>
<tr>
<td>ECON 306</td>
<td>Economic Theory of Politics</td>
<td>Economics</td>
</tr>
<tr>
<td>ECON 360</td>
<td>Government Regulation of Business</td>
<td>Economics</td>
</tr>
<tr>
<td>ECON 408</td>
<td>Economics of Law</td>
<td>Economics</td>
</tr>
<tr>
<td>ECON 461</td>
<td>Industrial Organization and Antitrust</td>
<td>Economics</td>
</tr>
<tr>
<td>ECON 463</td>
<td>Economics of Regulation</td>
<td>Economics</td>
</tr>
<tr>
<td>EDUC 240</td>
<td>Legal and Ethical Issues in American Education</td>
<td>Education</td>
</tr>
<tr>
<td>FINC 418</td>
<td>** Seminar in Corporate Governance</td>
<td>Finance</td>
</tr>
<tr>
<td>FREC 450</td>
<td>** Topics in Environmental Law</td>
<td>Food and Resource Economics</td>
</tr>
<tr>
<td>HIST 309</td>
<td>U.S. Business and Political Economy</td>
<td>History</td>
</tr>
<tr>
<td>HIST 324</td>
<td>American Constitutional History</td>
<td>History</td>
</tr>
<tr>
<td>HIST 479</td>
<td>Law and Social Change in Modern Japan</td>
<td>History</td>
</tr>
<tr>
<td>LEST 210</td>
<td>The Law and You</td>
<td>Legal Studies</td>
</tr>
<tr>
<td>LEST 301</td>
<td>Introduction to Legal Studies</td>
<td>Legal Studies</td>
</tr>
<tr>
<td>LEST 345</td>
<td>Legal Issues of the Mass Media</td>
<td>Legal Studies</td>
</tr>
<tr>
<td>LEST 380</td>
<td>Introduction to Law</td>
<td>Legal Studies</td>
</tr>
<tr>
<td>LEST 383</td>
<td>Language, Power and the Law</td>
<td>Legal Studies</td>
</tr>
<tr>
<td>LEST 385</td>
<td>Language and the Law: Court Interpretation</td>
<td>Legal Studies</td>
</tr>
<tr>
<td>LEST 401</td>
<td>Legal Studies Senior Seminar</td>
<td>Legal Studies</td>
</tr>
<tr>
<td>LEST 408</td>
<td>Economics of Law</td>
<td>Legal Studies</td>
</tr>
<tr>
<td>LEST 450</td>
<td>** Topics in Environmental Law</td>
<td>Legal Studies</td>
</tr>
<tr>
<td>LEST 475</td>
<td>Social Science and the Law</td>
<td>Legal Studies</td>
</tr>
<tr>
<td>LEST 646</td>
<td>Administrative Law and Policy</td>
<td>Legal Studies</td>
</tr>
<tr>
<td>LEST 649</td>
<td>** Civil Rights Law and Policy</td>
<td>Legal Studies</td>
</tr>
<tr>
<td>LEST 673</td>
<td>** International Law</td>
<td>Legal Studies</td>
</tr>
<tr>
<td>LING 383</td>
<td>Language, Power and the Law</td>
<td>Linguistics</td>
</tr>
<tr>
<td>LING 385</td>
<td>Language and the Law: Court Interpretation</td>
<td>Linguistics</td>
</tr>
<tr>
<td>MAST 673</td>
<td>** International Law</td>
<td>Marine Studies</td>
</tr>
<tr>
<td>MAST 674</td>
<td>** Legal Aspects of the Coastal Zone</td>
<td>Marine Studies</td>
</tr>
<tr>
<td>MAST 678</td>
<td>Admiralty and Maritime Law</td>
<td>Marine Studies</td>
</tr>
<tr>
<td>PHIL 446</td>
<td>Philosophy of Law</td>
<td>Philosophy</td>
</tr>
<tr>
<td>POSE 306</td>
<td>Economic Theory of Politics</td>
<td>Political Science and...</td>
</tr>
<tr>
<td>POSE 380</td>
<td>Introduction to Law</td>
<td>Political Science and...</td>
</tr>
<tr>
<td>POSE 401</td>
<td>Topics in Constitutional Law</td>
<td>Political Science and...</td>
</tr>
<tr>
<td>POSE 402</td>
<td>Civil Liberties: Individual Freedoms</td>
<td>Political Science and...</td>
</tr>
<tr>
<td>POSE 403</td>
<td>Civil Liberties: Equal Protection</td>
<td>Political Science and...</td>
</tr>
<tr>
<td>POSE 404</td>
<td>Judicial Process</td>
<td>Political Science and...</td>
</tr>
<tr>
<td>POSE 405</td>
<td>Constitutional Law of the United States</td>
<td>Political Science and...</td>
</tr>
<tr>
<td>POSE 423</td>
<td>Congress and Public Policy</td>
<td>Political Science and...</td>
</tr>
<tr>
<td>POSE 604</td>
<td>** International Law</td>
<td>Political Science and...</td>
</tr>
<tr>
<td>POSE 805</td>
<td>** Seminar in Public Law: Law and Courts in the...</td>
<td>Political Science and...</td>
</tr>
</tbody>
</table>
Liberal Studies

Psychology
PSYC 346  Psychology and the Law (same as CRJU 346)

Sociology
SOCI 330  Population, Law and Society
SOCI 345  Sociology of Law (same as CRJU 345)
SOCI 428  Corporate Crime (same as CRJU 428)
SOCI 456  **Lawyers and Society (same as CRJU 456)
SOCI 637  ** Law and Society in Historical Perspective
SOCI 655  ** Law and Society
SOCI 658  ** Social Science, Law and the Legal Process

Urban Affairs and Public Policy
UAPP 646  Administrative Law and Policy (same as LEST 646)
UAPP 649  **Civil Rights Law and Policy (same as LEST 649)
UAPP 678  Admiralty and Maritime Law (same as MAST 678)

** Courses that qualify as substitutes for LEST 401 (Senior Seminar); other courses may also qualify. All substitutions must be approved by the Director of Legal Studies.

SUBSTANTIVE LAW COURSES:
ACCT 350  Business Law I
ACCT 351  Business Law II
ACCT 352  Law and Social Issues in Business
COMM 345  Legal Issues of the Mass Media
CRJU 320  Introduction to Criminal Law
CRJU 375  Criminal Procedure
POSC 401  Topics in Constitutional Law
POSC 402  Civil Liberties: Individual Freedoms
POSC 403  Civil Liberties: Equal Protection
POSC 405  Constitutional Law of the United States

** Courses that qualify as substitutes for LEST 401 (Senior Seminar); other courses may also qualify. All substitutions must be approved by the Director of Legal Studies.

HONORS BACHELOR OF ARTS: LIBERAL STUDIES

The recipient must complete:

1. All requirements for the Bachelor of Arts in Liberal Studies degree.
2. All the University’s generic requirements for the Honors Degree.
3. The student’s BAL.S. advisor will designate Honors Courses that will count as courses in the major.

Linguistics and Cognitive Science
Telephone: (302) 831-6806
http://www.ling.udel.edu/ling/
Faculty Listing: http://www.ling.udel.edu/ling/

The Department of Linguistics and Cognitive Science offers a BS in Cognitive Science and two minors, one in Linguistics and one in Cognitive Science.
As part of the major in Cognitive Science, concentrations are possible in Linguistics and in a variety of areas of Cognitive Science. The department also has concentration templates for students interested in Pre-professional Speech Pathology. Many of the courses offered by the department fulfill the Group A, Group C, and Group D breadth requirement in the College of Arts and Sciences as well as the University's multicultural requirement.

**BACHELOR OF SCIENCE - COGNITIVE SCIENCE**

The interdisciplinary field of cognitive science studies the human mind viewed as a computational process. It lies at the confluence of computer science, educational and cognitive development, linguistics, neuroscience, neurobiology, philosophy, psychology, and certain areas of mathematics. Cognitive science has arguably been the most important development in the study of human thinking in the past twenty years; its influence can be seen across a wide variety of disciplines, from logic to communication disorders.

As a nascent discipline, cognitive science seeks to model and explain such phenomena as language, reasoning and perception. The goal of cognitive science as a theoretical discipline is to determine those knowledge structures and processes that characterize organisms as biological information processing systems, as well as to explain how these organisms come to possess this knowledge. Applied cognitive science takes the results of this research to such diverse areas as language technology, cognitive approaches to education, human computer interaction etc. The latter field addresses the most effective use of technology by people and includes the study of user interfaces, graphical displays, visualization of data, virtual reality, technology-based education, intelligent agents, and computer-based assistive technology for persons with disabilities. At the University of Delaware the discipline of linguistics plays an especially strong role in cognitive science. This is true because linguists have developed successful models of natural languages in central areas of cognition, and because the Department of Linguistics and Cognitive Science houses the BS in Cognitive Science.

**Admission and Retention Requirements**

During the freshman year students may declare a Cognitive Science Interest Major, but admission to the program as a Cognitive Science Major requires the completion of at least 28 credits of study. The minimal GPA for admission to the program will be 2.0.

**Degree Requirements**

**Required Courses (26 hours/credits)**

All of the following:

- CGSC 100 First Year Experience 1
- CGSC 170 Introduction to Cognitive Science (foundation course) 3
- CGSC 314 Brain and Behavior 3
- CGSC 485 Seminar in Cognitive Science (senior seminar) 3
- LING 101 Introduction to Linguistics 3
- PSYC 100 General Psychology and 3

One of the following:

- BISC 104 Principles of Biology with Laboratory 4
- BISC 207 Introductory Biology I 4

One of the following:

- CISC 108 General Computer Science 3
- CISC 103 Introduction To Computer Science with Web Applications 3
- CISC 181 Introduction to Computer Science II 3
- CISC 280 Program Development Techniques 3

One of the following:

- PHIL 205 Logic 3
- MATH 201 Introduction to Statistical Methods I 3
- MATH 205 Statistical Methods 4
- PSYC 209 Measurement and Statistics 3

**Concentration Requirement**

In addition to completing the required core, students will develop, with the aid of a faculty advisor, a concentration program individualized to their interests of at least 18 credit hours. Concentrations may include a focus of linguistics or pre-professional speech pathology and speech science, natural language processing, animal cognition, artificial intelligence, computer modeling of cognition, or psychological models of cognition, among other possibilities.

The faculty advisor must be among the core departmental faculty listed on the departmental
website (http://www.ling.udel.edu/ling). Further, the concentration program must be proposed by the student, approved by the student's faculty advisor and approved by the Undergraduate Studies Committee of the department. All concentration programs will consist of at least 18 credits drawn from a list of eligible courses which will be maintained on the Department's website. Some concentrations may exceed 18 hours. The list of eligible courses will be updated and posted annually on the Departmental website. Substitute courses may be proposed by the student with the approval of the faculty advisor.

First Year Experience and Discovery Learning
All first-year students in the Cognitive Science Interest major must complete a First Year Experience (FYE). The course, CGSC 100, will meet the first 8 weeks of the semester.

All students are required to participate in a discovery or experiential learning experience. The available Discovery or Experiential Learning Programs are posted on the departmental website (http://www.ling.udel.edu/ling). The Department currently offers opportunities for study abroad and internship possibilities which meet this requirement.

Capstone Course
Senior majors are brought together for a seminar on topics in cognitive science: CGSC 485 Seminar in Cognitive Science. The course requires participants to engage in research that demonstrates grasp of the issues in the field as a whole and in their chosen focus. This work may lead to an Honors Thesis for qualified students.

University and College Requirements
In order to receive the degree of BS in Cognitive Science all students must meet the University requirements for a bachelor's degree. Students are also required to meet the skill requirements of the College of Arts and Sciences.

College Breadth Requirements
Students must meet the following breadth requirements:

Group A Creative Arts and Humanities
These courses provide students with an understanding and appreciation of the visual and performing arts, of aesthetic forms, designs, or craftsmanship, or of literary, philosophical, and intellectual traditions. Courses may focus on a single aesthetic form or intellectual tradition, or cross-cultural comparisons. Nine credits of courses representing at least two departments or appropriate instructional units.

Group B History and Cultural Change
These courses provide students with an understanding of the sources and forces of historical changes in ideas, beliefs, institutions, and cultures. Courses may address social, cultural, intellectual, economic, technological, artistic, scientific, and political development, changes in a discipline, or globalization and its effects. Nine credits of courses representing at least two departments or appropriate instructional units.

Group C Social and Behavioral Sciences
These courses provide students with an understanding of the behavior of individuals and social groups in the context of their human and natural environments. Courses emphasize the empirical findings, applications, and methods of the social and behavioral sciences. Nine credits of courses representing at least two departments or appropriate instructional units.

Group D Mathematics, Natural Sciences and Technology
These courses provide students with an understanding of fundamental and/or applied concepts and phenomena from mathematics, logic, natural or physical sciences, and technology including quantitative reasoning and methods used to approach and solve problems. Ten credits of courses representing at least two departments or appropriate instructional units and including a minimum of one course with an associated laboratory. The laboratory component provides exposure to the working methods of science.

If the grade earned is sufficient, a course may be applied toward more than one requirement (e.g., breadth and major requirements), but the credits are counted only once toward the total credits for graduation. If all but one course in a group has been taken in one department or program, a course cross-listed with that program will not satisfy the distribution requirement.

Requirements for Honors BS in Cognitive Science

The recipient must complete:
All requirements for the Bachelor of Science degree in Cognitive Science:
- A cumulative GPA of at least 3.400 at the time of graduation
- At least 30 credits earned in Honors courses
- At least 12 credits in the major department or in courses in collateral disciplines specifically
required for the major;
At least 12 credits in 300-level courses
or higher, not including the first-year
interdisciplinary Honors colloquium;
Three credits in an Honors Degree seminar
or Honors capstone course or comparable
senior experience approved by the major and
the Honors Program, to be completed in one of
the last two semesters of the student's degree
program.

All of the University's generic requirements for
the Honors Baccalaureate degree.

**Combined BS and M.A. Option**

Qualified undergraduate students in the BS
in Cognitive Science as well as students
completing a Bachelors degree in related fields
like Anthropology, Computer and Information
Science, Philosophy and Psychology (and
other fields by application) may apply for the
Combined BS and M.A. option, which combines
the requirements of the undergraduate and
master's degree programs in Cognitive Science
and Cognitive Science and Linguistics. Whereas
the traditional programs for the BS and M.A.
degrees in Cognitive Science, and Linguistics
and Cognitive Science involve 4 years of
undergraduate work and 2 years of graduate
work, the Combined BS and M.A. option enables
students to earn both degrees in a 5-year
period. Students who complete the Combined
BS and M.A. program will graduate with both a
Bachelor of Science degree in Cognitive Science
and a Master of Arts degree in Linguistics and
Cognitive Science. Students who are candidates
for the Combined BS and M.A. option, and who
complete the requirements for the BS but fail to
complete the additional M.A. requirements, will
receive the BS degree.

**A. Admission into the Combined BS and M.A. Program**

Students may apply for admission to the
Combined BS and M.A. program at the end of
the sophomore year. The application process
requires submission of a completed graduate
application form for review by the Departmental
Graduate Studies Committee. Initial admission
will be based upon the student's ability to meet
the following recommended entrance criteria:
- Combined mathematics and verbal SAT scores
  of at least 1200
- An undergraduate GPA of at least 3.25
- Completion of all core courses for the BS in
  Cognitive Science other than
  CGSC 485
- Submission of an in-person writing sample,

based on work completed in a Cognitive Science
course
Admission is competitive. Meeting the minimal
requirements for admission does not guarantee
admission nor does the failure to meet a
requirement result in an automatic rejection.
The GRE is not required for admission to
the Combined BS and M.A. program by UD
undergraduates.

**B. Maintaining Status within the Program**

Upon admission into the program and prior to
the start of the junior year of study, the student
will meet with his graduate advisor and submit a
planned program of study, including all elective
courses, to the Graduate Studies Committee.
Planned programs of study are due by the end of
fall semester of the student's junior year.

Continuation in the Combined BS and M.A.
program is contingent upon maintaining a
cumulative GPA of at least 3.25 in undergraduate
courses with CGSC and LING designations and
in graduate coursework. Satisfactory progress
includes following the prescribed program of
study.

Each student's progress and GPA will be
evaluated at the end of each academic year by
the student's advisor and the Graduate Studies
Committee. Students who fail to meet the
minimum GPA requirements or fail to show
progress toward the degree will be dropped
from the Combined BS and M.A. program. They
may, however, continue in the undergraduate
major unless their undergraduate progress is
unsatisfactory according to the rules in effect for
the BS program.

**C. Degree Requirements for the Master of Arts in
Linguistics and Cognitive Science and the BS in Cognitive Science**

The graduate level course requirements for
students in the Combined BS and M.A. option
are the same as those for the M.A. in Linguistics
and Cognitive Science. The course requirements
for the degree include 30 credit hours planned
in consultation with the student's advisor and
the Director of Graduate Studies, which must
include at least 21 credit hours in the Linguistics
Department and at least one 800-level seminar.
The M.A. in Linguistics and Cognitive Science
is a flexible program of study that provides
training in both Linguistics and Cognitive
Science. Separate tracks are provided for
students whose emphasis is clearly in Cognitive
Science or in Linguistics. In addition, students
may propose a program of study that combines
elements of the Linguistics and Cognitive
Science tracks. See the Department's Graduate
BACHELOR OF ARTS - LINGUISTICS

Policy Statement for additional information.
Students in the Combined BS and M.A. option must fulfill all graduate and undergraduate course requirements for both the M.A. and their undergraduate degree.

D. Course Overlap
In the event that a student in the Combined BS and M.A. option completes a required graduate course as an undergraduate, and elects to count that course toward the bachelors degree, he will be required to substitute another graduate course, the choice requiring approval of the Director of Graduate Studies. When a student completes a 400-level undergraduate course that has content very similar to that of a parallel 600-level graduate course, he must petition the Director of Graduate Studies to substitute another graduate course for the 600-level course in question.

E. Revisions to Planned Program of Study in Combined BS and M.A. Option
Students who wish to make changes to their program of study must first obtain permission from their advisor. The advisor must then make a written request to the Graduate Studies Committee to revise the program of study.

BACHELOR OF ARTS - LINGUISTICS

University and College Requirements

MAJOR REQUIREMENTS
LING 101 Introduction to Linguistics 3
LING 403 Introduction to Phonology 3
LING 404 Structure of Language 3
LING 418 Meaning and Language Use 3
CGSC 485 Seminar in Cognitive Science 3

Fifteen credits of LING courses or courses from the following list: PHIL 205 (Logic), CGSC 170 (Introduction to Cognitive Science), CGSC 496 (Psycholinguistics). Four courses must be at the 200-level or above. It is strongly recommended that these courses include CGSC 496 (Psycholinguistics) and LING 471 (Discovering Human Language). 15

ELECTIVES
After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF 124

HONORS BACHELOR OF ARTS - LINGUISTICS

All Honors Degree Candidates must complete the following:

1. All requirements for the BA in Linguistics.
2. All of the University’s generic requirements for the Honors Baccalaureate degree.

COMBINED 4+1 BA IN LINGUISTICS/MA IN LINGUISTICS AND COGNITIVE SCIENCE

Admission into the 4+1 Program

Qualifying undergraduates working toward the BA in Linguistics can apply for the 4+1 option, which combines the requirements of the BA in Linguistics and the MA in Linguistics and Cognitive Science. Whereas the traditional programs for the BA degree in Linguistics and the MA degree in Linguistics and Cognitive Science involve four years of undergraduate work and two years of graduate work, the 4+1 option enables students to earn both degrees in a five-year period. Students who complete the 4+1 program will graduate with both a Bachelor of Arts degree in Linguistics and a Master of Arts degree in Linguistics and Cognitive Science.

Students may apply for admission to the 4+1 program at the end of the sophomore year. The application process requires submission of a completed graduate application form for review by the Departmental Graduate Studies Committee. Applicants must also submit SAT scores and a writing sample, based on work completed in a Linguistics course. The GRE is not required for admission to the 4+1 program by UD undergraduates. Admission will be decided by the Departmental Graduate Studies Committee, according to the criteria used for MA applicants generally.

Maintaining Status within the Program

Upon admission into the program and prior to the start of the junior year of study, the student will meet with his or her graduate advisor and submit a planned program of study, including all elective courses, to the Graduate Studies Committee. Planned programs of study are due by the end of the fall semester of the students junior year.

Continuation in the 4+1 program is contingent upon meeting the standards for both degrees. Courses taken at the undergraduate level must meet the University and College requirements for undergraduates, while those taken at the graduate level must meet those for graduate degrees (a cumulative graduate GPA of 3.000, and a minimum grade of C- for a course to count toward the MA). Satisfactory progress also includes following the prescribed program of study.
Each student’s progress and GPA will be evaluated at the end of each academic year by the students’ advisor and the Graduate Studies Committee. Students who fail to meet the minimum GPA requirements or fail to show progress toward the degree will be dropped from the 4+1 program. They may, however, continue in the undergraduate major unless their undergraduate progress is unsatisfactory according to the rules in effect for the BA program.

Degree Requirements
The 4+1 option requires that the student complete all of the requirements for the BA and all of those for the MA. The MA program is quite flexible, with Cognitive Science and Linguistics tracks, as well as individualized programs. They all require 30 credit hours planned in consultation with the student’s advisor, including at least one 800-level seminar in Linguistics or Cognitive Science.

MINOR IN LINGUISTICS
The minor in linguistics requires 18 credits, distributed as follows:
LING 101 Introduction to Linguistics 3
One of the following: 3
LING 403 Introduction to Phonology
LING 404 Structure of Language
LING 418 Meaning and Language Use
Any four additional LING courses, two of which must be at the 300-level or above 12

Special problems courses and courses other than those specified above must have approval of the Undergraduate Studies Committee of the Department of Linguistics.

MINOR IN COGNITIVE SCIENCE
Cognitive Science studies the computational and representational structure of the mind by combining linguistics, philosophy, anthropology, computer science (especially artificial intelligence), and psychology. Courses for the minor in cognitive science focus on three areas: (1) broad foundational issues in linguistics, psychology, and computing; (2) more specialized issues in mental representation, computation, theoretical linguistics, and epistemology; (3) problems in cognition, data processing, language and formal representation that are related to students’ particular interests.

The minor requires 18 credits, distributed as follows (most of these courses have prerequisites, as listed):
A. All of the following: 9
CGSC 170 Introduction to Cognitive Science
LING 101 Introduction to Linguistics
PSYC 100 General Psychology
B. One of the following: 3
CISC 108 Introduction to Computer Science I
CISC 106 General Computer Science for Engineers
CISC 181 Introduction to Computer Science (restriction: programming experience) (coreq: MATH 115, MATH 117, MATH 221 or MATH 241)
C. One of the following: 3
LING 404 Structure of Language
LING 418 Meaning and Language Use (prereq: LING 101)
CGSC 340 Cognition (prereqs: PSYC207 and PSYC 209)
PHIL 205 Logic
ANTH 205 Anthropology and Human Nature
D. One of the following: 3
PSYC 310 Sensation & Perception (prereqs: PSYC207 and PSYC 209)
CGSC 314 Brain & Behavior
CISC 220 Data Structures (prereq: CISC 181)
CGSC 681 Artificial Intelligence (prereq: CISC 220 & CISC 310)
EDUC 462 Language Acquisition
LING 609 Syntax I
PHIL 330 Philosophy of the Mind
ANTH 300 Primatology
or
any of the courses not chosen under C

No more than 3 courses may be from a single department.

Pre-Professional Speech Pathology And Cognitive And Linguistic Science
Students who wish to prepare for graduate or professional work in Speech Pathology and Communication Disorders should major in Cognitive Science. Suggested minors include Psychology, Disability Studies, and/or Linguistics. This allows them to follow a course of study drawing on linguistics, speech science, psychology, neuroscience, and biology. This will include courses in acoustics, physiology, psycholinguistics, normal and abnormal development, and a variety of other scientific and clinical fields. A model concentration for students interested in Pre-Professional Speech Pathology is provided at (http://www.ling.udel.edu/ling).
Material Culture Studies

Telephone: (302) 831-8788
www.udel.edu/materialculture
Faculty Listing: http://materialculture.udel.edu/faculty/faculty.html

The Center for Material Culture Studies offers an interdisciplinary undergraduate minor that engages students in understanding the diversity of cultures through the things and places people create. Courses in the minor help students gain new perspective on objects and sites, from the intimate environments of the home to the historical development of regional landscapes. The minor draws on the University’s rich on-campus resources in material culture studies, including the University Museums, the Paul R. Jones Collection, the Center for Historic Architecture and Design, and the Museum Studies Program, and its long-standing affiliations with such outstanding cultural institutions in the region as the Winterthur Museum and Country Estate and the Hagley Museum and Library. Students in the minor are encouraged, but not required, to complete an internship that would enhance their exposure to behind-the-scenes work in cultural institutions such as museums, historical societies, and historic preservation agencies.

MINOR IN MATERIAL CULTURE STUDIES

The minor in Material Culture Studies requires 18 credit hours distributed as follows: Three core courses and an additional three courses must be selected in consultation with and approved by the student’s minor advisor. These courses should represent major topic areas in material culture studies. All three additional courses must be selected from outside the requirements of the student’s major and outside his or her other minors. All courses included within the minor must be completed with a grade of C- or above.

Core Courses Credits

ANTH 216/MCST 216/ HIST 216 Introduction to Material Culture Studies 3
MCST 402 Research and Writing Seminar 3 (prerequisite: MCST 216)
MCST Internship or independent study 3

Area Courses 9
An additional three courses (9 credits) to be chosen in consultation with the student’s minor advisor from recommended offerings in Material Culture Studies. Two of these courses must be at the 200-level or above. The third course must be at the 300-level or above. Courses must be selected from outside the student’s major and represent at least two different programs/departments.

Mathematical Sciences

Telephone: (302) 831-2653
http://www.math.udel.edu/
Faculty Listing: http://www.math.udel.edu/people/people.html

The Department of Mathematical Sciences administers major programs in Mathematical Sciences leading to the Bachelor of Arts or the Bachelor of Science, as well as BA and BS major programs in Mathematics Education for those students preparing for careers teaching secondary school mathematics. The Department also participates in a BS degree program in Mathematics and Economics and a BS degree in Quantitative Biology. A minor in mathematics is also available.

The Department of Mathematical Sciences also provides courses for others who need to use mathematics and statistics in their careers, be it engineering, science, medicine, or management.

Since mathematics is a highly structured discipline, careful attention must be paid to prerequisites. A successful mathematical sciences major must complete several courses in the major each year to graduate within a reasonable time frame. The Department of Mathematical Sciences carefully monitors student progress and will drop from the major any student not making satisfactory progress in the program. A normally matriculated student majoring in the Department of Mathematical Sciences is not making satisfactory progress if he or she has not successfully completed a required Mathematical Science course by the beginning of the third semester or has failed to successfully complete any required Mathematical Science course for two consecutive semesters.

Consistent with the program requirements, “successfully complete” means to earn a grade of C- or better. A student not making satisfactory progress may petition the department to remain as a major when there are extenuating circumstances.

Departmental requirements and course descriptions are subject to continual revision. Up-to-date statements of requirements, course descriptions, and departmental policies are available at the departmental office or its website.
Courses For Other Majors

The three-semester calculus sequence MATH 241, MATH 242, MATH 243 is the traditional basis for programs in the physical sciences and engineering. Students with a sound preparation in calculus are encouraged to enroll in MATH 242 to avoid repetition of known material. Students with advanced placement are automatically placed in MATH 242, and others should follow the advice given during new student orientation.

The calculus sequence MATH 221, MATH 222 and finite mathematics course MATH 230 are designed for students in the behavioral, management, and social sciences. Trigonometry is not a prerequisite for these courses. Requirements in mathematics preparation for these programs vary greatly; thus students with preparation in trigonometry, a high aptitude for mathematics, or an expectation of pursuing more quantitative aspects might seriously consider taking MATH 241, MATH 242 as an alternative to MATH 221, MATH 222.

The sequence MATH 251, MATH 252, MATH 253 is designed for prospective elementary school teachers and is restricted to declared majors in the appropriate programs of the College of Human Services, Education and Public Policy.

Students who need further preparation in algebra and trigonometry prior to a 200-level course should take MATH 115 or MATH 117. MATH 113 and MATH 114 serve to establish minimal skill levels for students not expecting to continue at the 200-level. MATH 113 may not be appropriate for some majors. Students should check with their department advisor for the correct mathematics requirement.

Ordinarily, credit is not given for 100-level courses that follow successful completion of 200-level courses. Credit for corresponding courses from different tracks will be given only upon approval of the chair: e.g.,
- MATH 114 and MATH 115
- MATH 210 and MATH 230
- MATH 221 and MATH 241
- MATH 222 and MATH 242
- MATH 302, MATH 341, and MATH 351
- MATH 342, MATH 349, and MATH 352

BACHELOR OF ARTS - MATHEMATICAL SCIENCES

UNIVERSITY REQUIREMENTS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 110</td>
<td>Critical Reading and Writing</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>First Year Experience (FYE)</td>
<td>0-4</td>
</tr>
<tr>
<td></td>
<td>University Breadth Requirement (minimum grade C-)</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Up to 3 credits from each of the University Breadth Requirement categories may be used to simultaneously satisfy the College of Arts and Sciences Breadth Requirements.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Discovery Learning Experience (DLE)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Multicultural Course</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Multicultural Course</td>
<td>3</td>
</tr>
</tbody>
</table>

COLLEGE REQUIREMENTS

Second Writing Requirement
(minimum grade C-) 3
A second writing course involving significant writing experience including two papers with a combined minimum of 3,000 words to be submitted for extended faculty critique of both composition and content. This course must be taken after completion of 60 credit hours.

Foreign Language Requirement 0-12
Completion of the intermediate-level course (107 or 112 or 202) in an ancient or modern language. The number of credits needed and initial placement will depend on the number of years of high school study of foreign language. Students with four or more years of high school work in a single foreign language, or who have gained proficiency in a foreign language by other means, may attempt to fulfill the requirement in that language by taking an exemption examination through the Foreign Languages and Literature Department.

ARTS & SCIENCES BREADTH REQUIREMENT
(minimum grade C-)
Group A 9
Group B 9
Group C 9
Group D 12

MAJOR REQUIREMENTS

A grade of C- or better is required for major courses and related work. Students lacking preparation for MATH 242 should begin with MATH 241.

MATH 210 Discrete Mathematics I 3
MATH 242 Analytic Geometry and Calculus B 4
MATH 243 Analytic Geometry and Calculus C 4
MATH 245 An Introduction to Proof 3
or

MATH 268
BACHELOR OF SCIENCE - MATHEMATICAL SCIENCES

UNIV 101  Perspectives on Mathematics
or First Year Seminar  1
MATH 302  Ordinary Differential Equations  3
MATH 349  Elementary Linear Algebra  3
MATH 350  Probability Theory and Simulation Methods  3

Nine credits of mathematics at the 300 level or above. MATH 308, MATH 379, MATH 380, and MATH 382 are not applicable  9
CISC 181  Introduction to Computer Science II  3
and
CISC 220  Data Structures  3
(Students with no previous experience in a programming language should start with CISC 106 or CISC 108.)

Any substitution must be approved by the department Undergraduate Studies Committee.

ELECTIVES
After required courses are completed, sufficient elective credits must be taken to meet the minimum credits requirement for the degree, with at least 79 credits outside Mathematics.

CREDITS TO TOTAL A MINIMUM OF 124

HONORS BACHELOR OF ARTS - MATHEMATICS

The recipient must complete:
All requirements for the Bachelor of Arts degree in Mathematics.
All of the University’s generic requirements for the Honors Baccalaureate degree. All Mathematics courses below the 600-level in which the student takes an Honors component may be counted toward the minimum 12 hours of Honors credits in the major required for the Honors degree. All Mathematics courses at the 600-level or higher may be counted toward the same 12 credit Honors course requirement.

BACHELOR OF SCIENCE - MATHEMATICAL SCIENCES

UNIVERSITY REQUIREMENTS
ENGL 110  Critical Reading and Writing  3
(minimum grade C-)
First Year Experience (FYE)  0-4
University Breadth Requirement  12
(minimum grade C-)
Up to 3 credits from each of the University Breadth Requirement categories may be used to simultaneously satisfy the College of Arts and Sciences Breadth Requirements.

Discovery Learning Experience (DLE)  3
Multi-cultural Courses  3

COLLEGE REQUIREMENTS
Writing: (minimum grade C-)  3
A second writing course involving significant writing experience including two papers with a combined minimum of 3,000 words to be submitted for extended faculty critique of both composition and content. This course must be taken after completion of 60 credit hours, and chosen from one of the following:

ENGL 312  Written Communications in Business  3
or
ENGL 410  Technical Writing  3
or
MATH 308  3
or
MATH 512  3

Foreign Language:  0-12
Completion of the intermediate-level course (107 or 112) in a given language. Number of credits needed and initial placement will depend on number of years of high school study of foreign language. Students with four or more years of high school work in a single foreign language may attempt to fulfill the requirement in that language by taking an exemption examination.

College of Arts and Sciences Breadth Requirements: (minimum grade C-
The College Breadth Requirements are in addition to the University Breadth Requirement. Up to 3 credits from each of the University Breadth Requirement categories may be used to simultaneously satisfy these College of Arts and Sciences Breadth Requirements.

A total of eighteen credits from Groups A, B and C is required with a minimum of six credits in each group. The six credits from each group could be from the same area.

Group A: Creative Arts and Humanities  6
Group B: History and Cultural Change  6
Group C: Social and Behavioral Sciences  6

MAJOR REQUIREMENTS
A grade of C- or better is required for major courses and related work. Students lacking adequate preparation for MATH 242 should begin with MATH 241.
ELECTIVES

After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF 124

HONORS BACHELOR OF SCIENCE - MATHEMATICS

The recipient must complete:

All requirements for the Bachelor of Science degree in Mathematics.

All of the University’s generic requirements for the Honors Baccalaureate degree.

All Mathematics courses below the 600-level in which the student takes an Honors component may be counted toward the minimum 12 hours of Honors credits in the major required for the Honors degree. All Mathematics courses at the 600-level or higher may be counted toward the same 12 credit Honors course requirement.

BACHELOR OF ARTS - MATHEMATICS EDUCATION

UNIVERSITY REQUIREMENTS

ENGL 110 Critical Reading and Writing 3 (minimum grade C-)
First Year Experience (FYE) 0-4

University Breadth Requirement (minimum grade C-) 12
Up to 3 credits from each of the University Breadth Requirement categories may be used to simultaneously satisfy the College of Arts and Sciences Breadth Requirements.

Discovery Learning Experience (DLE) 3
Multi-cultural Courses 3

COLLEGE REQUIREMENTS

Writing: (minimum grade C-) 3 A second writing course involving significant writing experience including two papers with a combined minimum of 3,000 words to be submitted for extended faculty critique of both composition and content. This course must be taken after completion of 60 credit hours.

Foreign Language: 0-12
Completion of the intermediate-level course (107 or 112) in a given language. Number of credits needed and initial placement will depend on number of years of high school study of foreign language. Students with four or more years of

Part A
MATH 210 Discrete Mathematics I 3
MATH 242 Analytic Geometry and Calculus B 4
MATH 243 Analytic Geometry and Calculus C 4
MATH 245 An Introduction to Proof 3
MATH 268
or
UNIV 101 Perspectives on Mathematics
or
First Year Seminar 1
MATH 302 Ordinary Differential Equations 3
MATH 349 Elementary Linear Algebra 3
MATH 350 Probability Theory and Simulation Methods 3
MATH 512 Contemporary Applications of Mathematics 3

Part B
Choose three out of the following six courses 9
MATH 315 Discrete Mathematics II
MATH 401 Introduction to Real Analysis
MATH 426 Numerical Analysis and Algorithmic Computation
MATH 450 Mathematical Statistics
MATH 451 Abstract Algebra I
MATH 535 Introduction to Partial Differential Equations

Part C
Fifteen additional credits in mathematics or in related disciplines at the 300 level or above 15
At least six of these additional credits have to be from Mathematical Sciences. MATH 308, MATH 379, MATH 380, and MATH 382 are not applicable. A maximum of nine credits in this Part C may be chosen from an approved list of courses in Computer Science, Economics, Physics or Statistics. The approved list of courses will be determined by the department Undergraduate Studies Committee and will be posted on the department website.

Two-semester sequence of laboratory science 8 (Courses designed for non-majors in a discipline are not appropriate.)
CISC 181 Introduction to Computer Science II 3
and
CISC 220 Data Structures 3

(Students with no previous experience in a programming language should start with CISC 106 or CISC 108)

Any substitution must be approved by the department Undergraduate Studies Committee.
high school work in a single foreign language may attempt to fulfill the requirement by taking an exemption examination.

BREADTH REQUIREMENTS (minimum grade C-)
Group A 9
Group B 9
Group C 9
Group D 10

MAJOR REQUIREMENTS
A grade of C- or better is required for major courses and EDUC courses and related work. Students lacking preparation for MATH 242 should begin with MATH 241.
MATH 210 Discrete Mathematics I 3
MATH 242 Analytic Geometry and Calculus B 4
MATH 243 Analytic Geometry and Calculus C 4
MATH 245 An Introduction to Proof 3
MATH 308 Historical Development of Mathematical Concepts and Ideas 3
MATH 349 Elementary Linear Algebra 3
MATH 350 Probability Theory and Simulation Methods 3
MATH 450 Mathematical Statistics 3
MATH 451 Abstract Algebra I 3
MATH 518 or another Modeling course
Mathematical Models and Applications 3
MATH 540 Geometry 3

One of the following Mathematics Courses 3
MATH 302 Ordinary Differential Equations
MATH 315 Discrete Mathematics II
MATH 401 Introduction to Real Analysis
MATH 508 Introduction to Complex Variables

One of the following Computer Science Courses 3
CISC 108
or
CISC 181 Introduction to Computer Science I (for those with no previous experience)
or
Introduction to Computer Science II

PHYS 207 Introductory Physics I 4
MATH 279 Problem Solving Strategies I 1
MATH 379 Problem Solving Strategies 1
MATH 380 Approaches to Teaching Mathematics 3
MATH 382 Student Teaching Seminar: Secondary Math 2
EDUC 400 Student Teaching 9
EDUC 413 Adolescent Development and Educational Psychology 4
EDUC 414 Teaching Exceptional Adolescents 3
EDUC 419 Diversity in Secondary Education 3
EDUC 420 Reading in the Content Areas 1

To be eligible to student teach, Mathematics Education students must have a GPA of 2.5 in their mathematics major and an overall GPA of 2.5. They must also pass a teacher competency test as established by the University Council on Teacher Education. Remaining in the program is subject to periodic review of satisfactory progress and, to be admitted to EDUC 400 Student Teaching, students must have completed all the mathematics courses required in the secondary mathematics education program. Students should consult the teacher education program coordinator to obtain the student teaching application and other information concerning student teaching policies.

ELECTIVES
After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree, with 79 credits outside of Mathematics.

CREDITS TO TOTAL A MINIMUM OF 124

HONORS BACHELOR OF ARTS - MATHEMATICS EDUCATION

The recipient must complete:
- All requirements for the Bachelor of Arts degree in Mathematics Education.
- All of the University's generic requirements for the Honors Baccalaureate degree.

All Mathematics courses below the 600-level in which the student takes an Honors component may be counted toward the minimum 12 hours of Honors credits in the major required for the Honors degree. All Mathematics courses at the 600-level or higher may be counted toward the same 12 credit Honors course requirement.

BACHELOR OF SCIENCE - MATHEMATICS EDUCATION

UNIVERSITY REQUIREMENTS
ENGL 110 Critical Reading and Writing 3
(minimum grade C-)
First Year Experience (FYE) 0-4
University Breadth Requirement (minimum grade C-) 12

Discovery Learning Experience (DLE) 3
Multi-cultural Course 3

COLLEGE REQUIREMENTS
Writing: (minimum grade C-) 3
Second writing course taken after completion of 60 credits

Foreign Language 0-12
Completion of the intermediate-level course (107 or 112) in a given language. Number of credits needed and initial placement will depend on number of years of high school study of foreign language. Students with four or more years of high school work in a single foreign language may attempt to fulfill this requirement in that language by taking an exemption examination.

College of Arts and Sciences Breadth Requirements: (minimum grade C-)
The College Breadth Requirements are in addition to the University Breadth Requirement.
Up to 3 credits from each of the University Breadth Requirement categories may be used to simultaneously satisfy these College of Arts and Sciences Breadth Requirements.

Eighteen credits from Groups A, B and C with a minimum of six credits from each group 18

Group A: Creative Arts and Humanities 6
Group B: History and Cultural Change 6
Group C: Social and Behavioral Sciences 6

MAJOR REQUIREMENTS
A grade of C- or better is required for major courses and related work.

Mathematics Section
MATH 210 Discrete Mathematics I 3
MATH 242 Analytic Geometry and Calculus B 4
MATH 243 Analytic Geometry and Calculus C 4
MATH 245 An Introduction to Proof 3
MATH 302 Ordinary Differential Equations 3
MATH 308 Historical Developments of Mathematical Concepts and Ideas 3
MATH 349 Elementary Linear Algebra 3
MATH 350 Probability Theory and Simulation Methods 3
MATH 450 Mathematical Statistics 3
MATH 451 Abstract Algebra 3

MATH 540 College Geometry: A Historical Approach 3
One of the following modeling classes 3
MATH 512 Contemporary Applications of Mathematics
MATH 518 Mathematical Models and Applications

One course from the following list 3
MATH 315 Discrete Mathematics II
MATH 401 Introduction to Real Analysis
MATH 503 Advanced Calculus for Applications
MATH 508 Introduction to Complex Variables and Applications

COMPUTER AND INFORMATION SCIENCES
Either CISC 106 or CISC 108 (for those with no previous equivalent experience) or
CISC 181 3

SCIENCE
A two-semester, 8 credit sequence of laboratory science (courses designed for non-majors in a discipline are not appropriate, except for CHEM 103/CHEM 104) 8

PROFESSIONAL DEVELOPMENT
MATH 279 Problem Solving Strategies 1
MATH 379 Problem Solving Strategies 1
MATH 380 Approaches to Teaching Mathematics 3
MATH 382 Student Teaching Seminar in Secondary Math 2
EDUC 400 Student Teaching 9
EDUC 413 Adolescent Development and Educational Psychology 4
EDUC 414 Teaching Exceptional Adolescents 3
EDUC 419 Diversity in Secondary Education 3
EDUC 420 Reading in the Content Areas 1

Nine additional credits in mathematics or in related disciplines at the 300 level or above 9

Courses not approved for math majors cannot be counted towards these 9 additional credits. Non mathematics courses can be in CISC, ECON, PHYS and STAT from an approved list maintained by the Department of Mathematical Sciences.

CREDITS TO TOTAL A MINIMUM OF 124

HONORS BACHELOR OF SCIENCE: MATHEMATICS EDUCATION
The recipient must complete:
All requirements for the Bachelor of Science
degree in Mathematics Education
All of the University’s generic requirements for the Honors Baccalaureate degree

All Mathematics courses below the 600-level in which the student takes an Honors component may be counted toward the minimum 12 hours of Honors credits in the major required for the Honors degree. All Mathematics courses at the 600-level or higher may be counted toward the same 12 credit Honors course requirement.

BACHELOR OF SCIENCE: QUANTITATIVE BIOLOGY

The College of Arts and Sciences administers an interdisciplinary major program in Quantitative Biology leading to the Bachelor of Science degree. The major provides a strong background in mathematics, biology, chemistry and physics appropriate for students who wish to pursue a career or graduate studies in biomedical and life sciences.

UNIVERSITY REQUIREMENTS
ENGL 110  Critical Reading and Writing  3  (minimum grade C-)
First Year Experience (FYE)  0-4

University Breadth Requirement (minimum grade C-)
Up to 3 credits from each of the University Breadth Requirement categories may be used to simultaneously satisfy the College of Arts and Sciences Breadth Requirements.
Discovery Learning Experience (DLE)  3
Multi-cultural Course  3

COLLEGE REQUIREMENTS
Writing (minimum grade C-)  3
A second writing course involving significant writing experience including two papers with a combined minimum of 3,000 words to be submitted for extended faculty critique of both composition and content. This course must be taken after completion of 60 credit hours

BREADTH REQUIREMENTS (minimum grade C-)
Eighteen credits from Groups A, B and C with a minimum of six credits from each group. One of the courses should be in the area of Bioethics
Group A  6
Group B  6
Group C  6

MAJOR REQUIREMENTS
A grade of C- or better is required for major courses and related work.

Biology
BISC 207  Introduction to Biology I  4
BISC 208  Introduction to Biology II  4

Three of the following three-credit courses  9
BISC 302  General Ecology
BISC 305  Cell Physiology
BISC 306  General Physiology
BISC 401  Molecular Biology of the Cell
BISC 403  Genetic and Evolutionary Biology

One of the following three-credit laboratory classes  3
BISC 312  General Ecology Laboratory
BISC 315  Experimental Cell Biology
BISC 316  Experimental Physiology
BISC 411  Experimental Molecular Biology
BISC 413  Advanced Genetics Laboratory

Either CISC 106 or CISC 108 (for those with no previous equivalent experience), or CISC 181  3

Chemistry
One of the following options (A, B or C)  8-12
Option A
CHEM 103  General Chemistry  4
CHEM 104  General Chemistry  4
Option B
CHEM 111  General Chemistry  3
CHEM 112  General Chemistry  3
CHEM 119  Quantitative Chemistry I  3
CHEM 120  Quantitative Chemistry II  3
Option C
CHEM 111  General Chemistry  3
CHEM 112  General Chemistry  3
CHEM 220  Quantitative Analysis  3
CHEM 221  Quantitative Laboratory  1
CHEM 321  Organic Chemistry  4
CHEM 322  Organic Chemistry  4
CHEM 527  Introductory Biochemistry  3

Mathematics
MATH 210  Discrete Mathematics I  3
MATH 241  Analytic Geometry and Calculus A  4
MATH 242  Analytic Geometry and Calculus B  4
MATH 243  Analytic Geometry and Calculus C  4
MATH 302  Ordinary Differential Equations  3
MATH 349  Elementary Linear Algebra  3
MATH 350  Probability Theory and Simulation Methods  3
MATH 426  Introduction to Numerical Analysis and Algorithmic Computation  3
MATH 450  Mathematical Statistics  3
MATH 460  Introduction to Systems
To count toward the minor, a grade of C- or better is required. MATH 305, MATH 341 and MATH 351 are not considered above MATH 302 since they are comparable courses from a different track. However, MATH 342 or MATH 352 may be counted as above MATH 302, provided MATH 349 is not included in the count.

Courses which are cross-listed with a Mathematical Sciences MATH course may also be counted toward the minor. Courses in mathematics education (e.g., MATH 379, MATH 380, MATH 382) may not be counted toward the minor.

MATHEMATICS AND ECONOMICS (BS)

The College of Arts and Sciences administers an interdisciplinary major program in Mathematics and Economics leading to the Bachelor of Science degree. The major, with courses taught by faculty in the Departments of Economics and of Mathematical Sciences, provides a strong background in mathematics for students in economics. Students graduating with this degree will be well prepared for graduate studies in economics or in mathematics.

BACHELOR OF SCIENCE - MATHEMATICS AND ECONOMICS

UNIVERSITY REQUIREMENTS
ENGL 110 Critical Reading and Writing 3
First Year Experience (FYE) 0-4
University Breadth Requirement (minimum grade C-) 12

Discovery Learning Experience (DLE) 3
Multi-cultural Course 3

COLLEGE REQUIREMENTS
Writing: (minimum grade C-) 3
A second writing course involving significant writing experience including two papers with a combined minimum of 3,000 words to be submitted for extended faculty critique of both composition and content. This course must be taken after completion of 60 credit hours.

ENGL 312 Written Communications in Business 3
(or other approved second writing course including MATH 308 or MATH 512)
College of Arts and Sciences Breadth Requirements: (minimum grade C-)
The College Breadth Requirements are in addition to the University Breadth Requirement. Up to 3 credits from each of the University Breadth Requirement categories may be used to simultaneously satisfy these College of Arts and Sciences Breadth Requirements.

A total of eighteen credits from Groups A, B and C is required with six credits from each group. The six credits from each group could be from the same area.

Group A: Creative Arts and Humanities 6
Group B: History and Cultural Change 6
Group C: Social and Behavioral Sciences 6

MAJOR REQUIREMENTS
A grade of C- or better is required for major courses and related work. Students lacking adequate preparation for MATH 242 should begin with MATH 241. Students must take a minimum of 39 credits in Mathematics and Economics at the 300-level or above. MATH 308, MATH 379, MATH 380 and MATH 382 are not applicable.

Mathematics Section
MATH 242 Analytic Geometry and Calculus B 4
MATH 243 Analytic Geometry and Calculus C 4
MATH 268 Perspectives on Mathematics 1
MATH 302 Ordinary Differential Equations 3
MATH 349 Elementary Linear Algebra 3
MATH 529 Fundamentals of Optimization 3
MATH 530 Applications of Mathematics in Economics 3

One of the following 3
MATH 210 Discrete Mathematics I
or
MATH 230 Finite Mathematics with Applications

One of the following options (A or B, 6 credits total):

Option A
MATH 350 Probability Theory and Simulation Methods 3
and
MATH 450 Mathematical Statistics 3

Option B
MATH 201 Introduction to Statistical Methods I 3
and
MATH 202 Introduction to Statistical Methods II 3

One of the following options (C or D):

Option C
MATH 245 An Introduction to Proof 3
and
MATH 401 Introduction to Real Analysis 3

Option D
One of the following three courses 3
MATH 426 Numerical Analysis and Algorithmic Computations
MATH 503 Advanced Calculus for Applications
MATH 512 Contemporary Application of Mathematics and Modeling

Students intending to pursue a graduate education in financial mathematics should select at least MATH 210, Options A and C. Students intending to go into actuarial sciences should select Option A.

Economics Section
ECON 301 Quantitative Microeconomic Theory 3
(prerequisites: ECON 151 and MATH 241)
ECON 303 Intermediate Macroeconomic Theory 3
(prerequisites: ECON 152 and one of ECON 251, ECON 300 or ECON 301; or permission of instructor.
ECON 422 Econometric Methods and Models I 3
ECON 423 Econometric Methods and Models II 3

One of the following 3
ECON 406 Markets: Information and Uncertainty
ECON 426 Mathematical Economic Analysis

One of the following 3
ECON 302 Banking and Monetary Policy
ECON 430 Advanced Macroeconomic Theory
ECON 443 International Monetary Economics
ECON 471 Futures and Options Markets
FINC 311 Principles of Finance

One of the following Computer Science courses 3
CISC 108 Introduction to Computer Science I
or
CISC 181 Introduction to Computer Science II
Any substitutions must be approved by the department Undergraduate Studies Committee.

ELECTIVES
After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF 124

HONORS BACHELOR OF SCIENCE - MATHEMATICS AND ECONOMICS

The recipient must complete:

All requirements for the Bachelor of Science degree in Mathematics and Economics.
All of the University's generic requirements for the Honors Baccalaureate degree.

Of the minimal 12 Honors credits required in the major department or in courses in collateral disciplines specifically required for the major, at least three credits have to be taken from the Department of Economics and at least three from the Department of Mathematical Sciences.

All Mathematics and Economics courses below the 600-level in which the student takes an Honors component may be counted toward the minimum 12 Honors credits in the major required for the Honors degree. All Mathematics and Economics courses at the 600-level or higher may be counted toward the minimum 12 honors of Honors credits in the major or collateral discipline required for the Honors degree.

Medical Humanities
Telephone: (302) 831-2359
http://www.udel.edu/medicalhumanities/

The undergraduate minor in medical humanities explores how different kinds of humanistic inquiry inform and are informed by the science and practice of medicine.

MINOR IN MEDICAL HUMANITIES

Grounding 3-4
One 3-4 credit class
BISC 103 or BISC 104
Principles of Biology
BISC 106 Elementary Human Physiology
BISC 276 Human Physiology
BISC 306 General Physiology
HESC 220 Anatomy and Physiology

Humanistic Approaches 12
One three credit class from each of the following three disciplinary groups (9 credits), plus one additional class from any one of the groups (3 credits).

Ethics and Policy
PHIL 241 Ethical Issues in Health Care
PHIL 313 Killing and Letting Die
PHIL 444 Medical Ethics

Art, Literature, and History
HIST 382 History of Western Medicine

Human Sciences
POSC 343/SOCI 343 Society Politics and Healthcare
SOCI 311 Sociology of Healthcare
WOMS 389 Topics: Women and Health Issues

Capstone 1 Credit Independent Study (pass/fail)
A short (1000 word) discussion of how humanistic studies can inform and improve the practice of healthcare, with specific reference to the content of one or more classes taken (must include specific reference to any classes substituted for a listed class). Restriction: must be in senior year or have completed 12 units of the minor to enroll.

Class substitutions: Relevant alternative classes, or 3 credit independent study, may be substituted within each group if approved by the minor's faculty advisor.

Medieval Studies
Telephone: (302) 831-3328

The College of Arts and Sciences offers an undergraduate minor in Medieval Studies. Students interested in the Middle Ages and Medieval Studies have the opportunity to draw on the resources of a number of departments and structure individual programs of breadth and variety. Students pursuing a minor in Medieval Studies must take a minimum of 18 credits from the following courses, selected from at least three departments.

MINOR IN MEDIEVAL STUDIES

ARTH 209 Early Medieval Art (200-1000 AD)
ARTH 210 Later Medieval Art (1000-1400 AD)
ARTH 213 Art of the Northern Renaissance
ARTH 217 Early Renaissance Art
ARTH 220 Italian Renaissance Architecture
ARTH 236 Arts of the Islamic World
ARTH 406/ARTH 606 Seminar in Medieval Art
ARTH 413 Seminar in Italian Renaissance Art
CMLT 320 Varying Authors and Genres (on
Military Science - Army ROTC

CMLT 321 Medieval Literature and Culture
ENGL 321 Medieval Literature and Culture
ENGL 322 Chaucer
ENGL 323 Studies in Medieval Literature
FLLT 320 Varying Authors and Genres (on medieval topics)
FREN 423/FREN 623 French Medieval Literature
HIST 241 History of Christianity to 1300
HIST 245 Medieval Kings and Queens
HIST 342 Barbarian Europe
HIST 343 Medieval Europe 1050-1350
HIST 344 Renaissance Europe
HIST 471/HIST 671 Seminar in Medieval History
MUSC 311 Music History: 400 through 1600
PHIL 311 Early Medieval Philosophy
PHIL 312 Later Medieval Philosophy
SPAN 420 Topics: Medieval Literature
SPAN 421 Spanish Medieval Literature

Substitutions may be arranged with the permission of the faculty coordinator, provided that the required disciplinary distribution is maintained.

Military Science - Army ROTC

Telephone: (302) 831-8213
http://www.udel.edu/armyrotc/

The mission of the Military Science - Army ROTC program is to produce leaders of character to serve in the nation's defense. The cornerstone of the leadership program is developing self-confidence, teamwork, responsibility, professional ethics, and the development of all aspects of leadership.

Students at the University of Delaware can earn a commission as a Second Lieutenant in the U.S. Army upon completion of the military science program and a baccalaureate degree. The normal four-year ROTC program requires the completion of eight one-semester courses, totaling 12 credit hours, and successful completion of a five-week leadership camp during the summer prior to the senior year. Many challenging and fun training events are scheduled.

ROTC Program

The ROTC program consists of two major subsets - the Basic Course and the Advanced Course. Both courses are straightforward rather than conceptual and tend to be small (25 or less) with much personal interaction between the cadre and the students.

Basic Course - for freshmen and sophomores.
A series of four 1-credit classes that are open to all students with no military obligation. Student instruction includes basic leadership skills, orientation to the US Army, time management and other academic skills, decision making, and adventure training opportunities (rappelling, land navigation, etc.).

Faculty and the advanced course Cadets form support groups and act as mentors to the basic course students, providing assistance and a positive environment. Students enrolled in the basic course can compete for 2- and 3-year scholarships that will pay full tuition/fees and provide stipends.

While the Army may not be for everyone, and some of the Basic Course students decide not to continue in the Advanced program, they all unequivocally state that the ROTC Basic Course instruction provided them with excellent life skills, abilities, and confidence.

Advanced Course - for juniors, seniors and graduate students leading to a commission as a Second Lieutenant. This series of four 2-credit classes involves advanced practical leadership and military skills training as well as a 4-credit summer training course conducted at Fort Lewis, in Washington State. Students are paid and all travel, medical needs, lodging, and meals are provided while attending the Leadership Development and Advanced Course.

No military obligation is incurred until the beginning of this phase. Once the student satisfactorily completes all ROTC requirements and graduates from the University, he/she receives a commission in the US Army (Active Duty or Reserve status).

Army ROTC Benefits

Four, three, and two-year scholarships are awarded to deserving ROTC students each year. Scholarships provide for total tuition costs (in- or out-of-state rates) plus a $1,200 book allowance and a tiered stipend which starts at $3,000 annually. All these benefits may be combined with other scholarship benefits. Typically, 70% of all UD ROTC students are on some type of scholarship incentive.

Many of the graduating Cadets elect to go on Active Duty to put their ROTC leadership training into practice. The annual salary for a new Second Lieutenant exceeds $35,000.
A minor in music is available in applied music, composition, church music, musical studies, jazz studies or music management studies.

Department Policies

Entering majors are expected to demonstrate a high level of musical achievement and aptitude. Placement auditions and musicality tests for those students who wish to enter in the fall semester should be completed by June 1 of the preceding spring and must be completed before acceptance is granted. Acceptance to the University does not indicate acceptance as a music major. Students who transfer from accredited colleges are placed in appropriate levels of music theory, literature, and applied music according to the results of tests given at the time of transfer.

Part-time music majors must have the permission of the department chair to enroll for private study.

Credit for large ensembles, as required by various curricula, is given only for participation during the fall and spring semesters. The Department of Music requires the successful completion of a Sophomore Review before continuation as a music major. Detailed information about these and other aspects of curricular policy is published in the Department's Student Handbook, available online at www.music.udel.edu/current/.

Opportunities For Non-Majors

For the general University undergraduate, the department offers courses in the fundamentals of music, music literature, and class study of voice, guitar and organ. All courses in the department are available to any University student who meets course and department prerequisites. Some music courses may be taken as partial fulfillment of breadth requirements in the College of Arts and Sciences. Private study is also available to freshmen in the University Honors Program and to other non-majors, on a space-available basis, through the Music Merit Program. Auditions for these programs are held on the Monday before the first day of class of the academic year by arrangement with the department office. A variety of performing organizations are available to all University students: marching band, wind and jazz ensembles, orchestra, choral groups, the early music ensemble, opera workshop, steel band, and various chamber ensembles.
BACHELOR OF ARTS - MUSIC

The department is a leader in the development and implementation of instructional technology. It is an accredited institutional member of the National Association of Schools of Music.

BACHELOR OF ARTS - MUSIC

UNIVERSITY REQUIREMENTS
ENGL 110  Critical Reading and Writing  3
(minimum grade C-)

First Year Experience (FYE)  1
Discovery Learning Experience (DLE)  3
Multi-cultural Courses  3

MAJOR REQUIREMENTS
No more than 45 credits of Music courses may count toward the degree.

Applied Music
MUSC 100  Recital Attendance (four semesters required)  0
MUSC 153  Private Study: BA/Minor  2
MUSC 154  Private Study: BA/Minor  2
MUSC 175  Class Piano: Elementary I  1
MUSC 253  Private Study: BA/Minor  2
MUSC 254  Private Study: BA/Minor  2

Theory
MUSC 185/MUSC 186  Ear Training and Sight Singing I and II  4
MUSC 195/MUSC 196  Harmony I and II  6
MUSC 285/MUSC 286  Advanced Ear Training and Sight Singing I and II  4
MUSC 295/MUSC 296  Advanced Harmony I and II  6

Ensemble
Four Semesters  4
Students must consult with the Department for appropriate ensemble placement. Students must be enrolled in an appropriate ensemble during all semesters in which they are enrolled in Private Study.

Literature
MUSC 211  Introduction to Music History  3
MUSC 311  Music History: 400-1600  3
MUSC 312  Music History: 1600-1827  3
MUSC 313  Music History: 1827 to the Present  3

ELECTIVES
After required courses are completed sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

BACHELOR OF ARTS - MUSIC (MUSIC MANAGEMENT STUDIES)

UNIVERSITY REQUIREMENTS
ENGL 110  Critical Reading and Writing  3
(minimum grade C-)

First Year Experience (FYE)  1
University Breadth Requirement
Up to 3 credits from each of the University Breadth Requirement categories may be used to simultaneously satisfy the College of Arts and Sciences Breadth Requirements.  12

Discovery Learning Experience (DLE)  3
Multi-cultural Courses  3

MAJOR REQUIREMENTS
No more than 57 credits of Music courses may count toward the degree.

Applied Music
MUSC 100  Recital Attendance (four semesters required)  0
MUSC 153  Private Study: BA/Minor  2
MUSC 154  Private Study: BA/Minor  2
MUSC 175  Class Piano: Elementary I  1
MUSC 253  Private Study: BA/Minor  2
MUSC 254  Private Study: BA/Minor  2

Theory
MUSC 185/MUSC 186  Ear Training and Sight Singing I and II  4
MUSC 195/MUSC 196  Harmony I and II  6
MUSC 285/MUSC 286  Advanced Ear Training and Sight Singing I and II  4
MUSC 295/MUSC 296  Advanced Harmony I and II  6

Ensemble
Four Semesters  4
Students must consult with the Department for appropriate ensemble placement. Students must be enrolled in an appropriate ensemble during all semesters in which they are enrolled in Private Study.

Literature
MUSC 211  Introduction to Music History  3
MUSC 311  Music History: 400-1600  3

Grade of C- or better required in all courses in major.

CREDITS TO TOTAL A MINIMUM OF 124
MATH 113  Contemporary Mathematics (designed for students who do not intend to continue the study of mathematics)
MATH 114  College Mathematics and Statistics (designed for students who do not intend to continue the study of mathematics)
MATH 115  Pre-Calculus (designed for students who intend to continue the study of mathematics)
MATH 221  Calculus I
MATH 241  Analytic Geometry and Calculus A

Successful performance on the college proficiency exam (0 credits awarded).

Conclusion of the intermediate-level course (106) in an ancient or modern language. The number of credits needed and initial placement will depend on the number of years of high school student of foreign language. Students with three or more years of high school work in a single foreign language, or who have gained proficiency in a foreign language by other means, may attempt to fulfill the requirement in that language by taking an exemption examination through the Foreign Languages and Literatures Department.

BACHELOR OF MUSIC - APPLIED MUSIC-INSTRUMENTAL (PRINCIPAL INSTRUMENTS)

The concentration designates the student’s principal instrument. A list of instrumental options can be found in the chart on page vi at the front of this catalog, or can be obtained from the Department or the University Advisement Center.

UNIVERSITY REQUIREMENTS
ENGL 110  Critical Reading and Writing 3
(minimum grade C-)
First Year Experience (FYE) 1
University Breadth Requirement
Up to 3 credits from each of the University Breadth Requirement categories may be used to simultaneously satisfy the College of Arts and Sciences Breadth Requirements. 12
Discovery Learning Experience (DLE) 3
Multi-cultural Courses 3

COLLEGE REQUIREMENTS
Writing: (minimum grade C-) 3
A second writing course involving significant writing experience including two papers with a combined minimum of 3,000 words to be submitted for extended faculty critique of both composition and content. This course must be taken after completion of 60 credit hours. Appropriate writing courses are normally designated in the semester’s Registration Booklet. (See list of courses approved for second writing requirement.)

Mathematics: One of the following 0-4

BREADTH REQUIREMENTS
Group A 6
Creative Arts and Humanities. Six credits representing two different areas (excluding Music).
One course may be used to satisfy the University Breadth Requirement.
Group B 6
History and Cultural Change. Six credits representing two different areas (excluding Music).
One course may be used to satisfy the University Breadth Requirement.
Group C 6
Social and Behavioral Sciences. Six credits representing two different areas.
One course may be used to satisfy the University Breadth Requirement.
Group D 6
Mathematics, Natural Sciences and Technology. Six credits representing two different areas.
One course may be used to satisfy the University Breadth Requirement.

MAJOR REQUIREMENTS
Applied Music
MUSC 100  Recital Attendance (six semesters required) 0
MUSC 151  Private Study 2
MUSC 152 Private Study 2
MUSC 251 Private Study 2
MUSC 252 Private Study 2
MUSC 357 Advanced Private Study 3
MUSC 358 Advanced Private Study 3
MUSC 457 Advanced Private Study 4
MUSC 458 Advanced Private Study 4
MUSC 175/MUSC 176
Class Piano: Elementary I and II 2
MUSC 301 Junior Recital 0
MUSC 401 Senior Recital 0

Theory
MUSC 185/MUSC 186 Ear Training and Sight Singing I and II 4
MUSC 195/MUSC 196 Harmony I and II 6
MUSC 285/MUSC 286 Advanced Ear Training and Sight Singing I and II 4
MUSC 295/MUSC 296 Advanced Harmony I and II 6
MUSC 335 Basic Conducting 2
MUSC Theory electives 4-6

Ensemble
Twelve credits selected from the following: 12
MUSC 113 Marching Band, MUSC 114 Symphonic Band, MUSC 115 Wind Ensemble, MUSC 116 Jazz Ensemble, MUSC 117 University Orchestra, MUSC 118 Percussion Ensemble, and MUSC 321 Ensemble.
(All Ensembles may be repeated.)

Guitarists must complete the following:
MUSC 321 Ensemble: Guitar 8
Two semesters of any departmental ensemble 2

Literature
MUSC 211 Introduction to Music History 3
MUSC 311 Music History: 400-1600 3
MUSC 312 Music History: 1600-1827 3
MUSC 313 Music History: 1827 to the Present 3
MUSC 403 Chamber Music Literature 3
MUSC 405 Symphonic Literature 3

Music Electives
Excludes private study on primary instrument. 7-9
May include two credits of ensemble.

Grade of C- or better required in all courses in major.

CREDITS TO TOTAL A MINIMUM OF 126

BACHELOR OF MUSIC - APPLIED MUSIC - PIANO

UNIVERSITY REQUIREMENTS
ENGL 110 Critical Reading and Writing 3
(minimum grade C-)
First Year Experience (FYE) 1

University Breadth Requirement
Up to 3 credits from each of the University Breadth Requirement categories may be used to simultaneously satisfy the College of Arts and Sciences Breadth Requirements. 12

Discovery Learning Experience (DLE) 3
Multi-cultural Courses 3

COLLEGE REQUIREMENTS
Writing: (minimum grade C-) 3
A second writing course involving significant writing experience including two papers with a combined minimum of 3,000 words to be submitted for extended faculty critique of both composition and content. This course must be taken after completion of 60 credit hours. Appropriate writing courses are normally designated in the semester’s Registration Booklet. (See list of courses approved for second writing requirement)

Mathematics: One of the following 0-4
MATH 113 Contemporary Mathematics
(designated for students who do not intend to continue the study of mathematics)
MATH 114 College Mathematics and Statistics
(designated for students who do not intend to continue the study of mathematics)
MATH 115 Pre-Calculus (designated for students who intend to continue the study of mathematics)
MATH 221 Calculus I
MATH 241 Analytic Geometry and Calculus A

Successful performance on the college proficiency exam (0 credits awarded).

Foreign Language
Completion of the intermediate-level course (106) in an ancient or modern language. The number of credits needed and initial placement will depend on the number of years of high school student of foreign language. Students with three or more years of high school work in a single foreign language, or who have gained proficiency in a foreign language by other means, may attempt to fulfill the requirement in that language by taking an exemption examination through the Foreign Languages and Literatures Department. 0-8
COLLEGE BREADTH REQUIREMENTS
Group A 6
Creative Arts and Humanities. Six credits representing two different areas (excluding Music).
One course may be used to satisfy the University Breadth Requirement.
Group B 6
History and Cultural Change. Six credits representing two different areas (excluding Music).
One course may be used to satisfy the University Breadth Requirement.
Group C 6
Social and Behavioral Sciences. Six credits representing two different areas.
One course may be used to satisfy the University Breadth Requirement.
Group D 6
Mathematics, Natural Sciences and Technology. Six credits representing two different areas.
One course may be used to satisfy the University Breadth Requirement.

MAJOR REQUIREMENTS
Applied Music
MUSC 100  Recital Attendance (six semesters required) 0
MUSC 151  Private Study 2
MUSC 152  Private Study 2
MUSC 251  Private Study 2
MUSC 252  Private Study 2
MUSC 357  Advanced Private Study 3
MUSC 358  Advanced Private Study 3
MUSC 457  Advanced Private Study 4
MUSC 458  Advanced Private Study 4
MUSC 481  Pedagogy and Literature 3
MUSC 155  Private Study (Harpsichord or Organ)
or
MUSC 179  Class Organ 1
MUSC 301  Junior Recital 0
MUSC 401  Senior Recital 0

Theory
MUSC 185/MUSC 186  Ear Training and Sight Singing I and II 4
MUSC 285/MUSC 286  Advanced Ear Training and Sight Singing I and II 4
MUSC 195/MUSC 196  Harmony I and II 6
MUSC 295/MUSC 296  Advanced Harmony I and II 6
MUSC 393  Keyboard Harmony 2
MUSC 335  Basic Conducting 2
MUSC Theory courses 4-6

Ensemble
Two semesters of any departmental ensemble 2
MUSC 241  Accompanying Chamber Music: Piano (4 semesters) 4
MUSC 441  Accompanying Chamber Music: Piano (2 semesters) 2

Literature
MUSC 211  Introduction to Music History 3
MUSC 311  Music History: 400-1600 3
MUSC 312  Music History: 1600-1827 3
MUSC 313  Music History: 1825 to the Present 3
MUSC 363  Keyboard Literature I 3

One of the following courses:
MUSC 403  Chamber Music Literature or
MUSC 405  Symphonic Literature 3

Music Electives excludes private study on primary instrument. 8
May include two credits of ensemble.

Grade of C- or better required in all courses in major.

CREDITS TO TOTAL A MINIMUM OF 127

BACHELOR OF MUSIC - APPLIED MUSIC - VOICE

UNIVERSITY REQUIREMENTS
ENGL 110  Critical Reading and Writing 3
(minimum grade C-)
First Year Experience (FYE) 1

University Breadth Requirement
Up to 3 credits from each of the University Breadth Requirement categories may be used to simultaneously satisfy the College of Arts and Sciences Breadth Requirements. 12

Discovery Learning Experience (DLE) 3
Multi-cultural Courses 3

COLLEGE REQUIREMENTS
Writing: (minimum grade C-) 3
A second writing course involving significant writing experience including two papers with a combined minimum of 3,000 words to be submitted for extended faculty critique of both composition and content. This course must be taken after completion of 60 credit hours. Appropriate writing courses are normally designated in the semester’s Registration
**MAJOR REQUIREMENTS**

**Applied Music**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSC 100</td>
<td>Recital Attendance (six semesters required)</td>
<td>0</td>
</tr>
<tr>
<td>MUSC 151</td>
<td>Private Study</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 152</td>
<td>Private Study</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 251</td>
<td>Private Study</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 252</td>
<td>Private Study</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 357</td>
<td>Advanced Private Study</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 358</td>
<td>Advanced Private Study</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 457</td>
<td>Advanced Private Study</td>
<td>4</td>
</tr>
<tr>
<td>MUSC 458</td>
<td>Advanced Private Study</td>
<td>4</td>
</tr>
<tr>
<td>MUSC 175</td>
<td>Class Piano: Elementary I</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 176</td>
<td>Class Piano: Elementary II</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 275</td>
<td>Class Piano: Intermediate I</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 276</td>
<td>Class Piano: Intermediate II</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 301</td>
<td>Junior Recital</td>
<td>0</td>
</tr>
<tr>
<td>MUSC 401</td>
<td>Senior Recital</td>
<td>0</td>
</tr>
</tbody>
</table>

**Theory**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSC 185/MUSC 186</td>
<td>Ear Training and Sight Singing I and II</td>
<td>4</td>
</tr>
<tr>
<td>MUSC 285/MUSC 286</td>
<td>Advanced Ear Training and Sight Singing I and II</td>
<td>4</td>
</tr>
<tr>
<td>MUSC 195/MUSC 196</td>
<td>Harmony I and II</td>
<td>6</td>
</tr>
<tr>
<td>MUSC 295/MUSC 296</td>
<td>Advanced Harmony I and II</td>
<td>6</td>
</tr>
<tr>
<td>MUSC 335</td>
<td>Basic Conducting</td>
<td>2</td>
</tr>
</tbody>
</table>

**Ensemble**

- Thea 226 Acting I 3

**COLLEGE BREADTH REQUIREMENTS**

**Group A**

Creative Arts and Humanities. Six credits representing two different areas (excluding Music).

**Group B**

History and Cultural Change. Six credits representing two different areas (excluding Music).

**Group C**

Social and Behavioral Sciences. Six credits representing two different areas.

**Group D**

Mathematics, Natural Sciences and Technology. Six credits representing two different areas.

- Two of the following courses:
  - MUSC 426 German Lieder 2
  - MUSC 427 French Art Song 2
  - MUSC 428 Twentieth-Century Art Song 2

*Booklet. (See list of courses approved for second writing requirement)*

Mathematics: One of the following 0-4

- MATH 113 Contemporary Mathematics
designed for students who do not intend to continue the study of mathematics)
- MATH 114 College Mathematics and Statistics
designed for students who do not intend to continue the study of mathematics)
- MATH 115 Pre-Calculus (designed for students who intend to continue the study of mathematics)
- MATH 221 Calculus I
- MATH 241 Analytic Geometry and Calculus A
- Successful performance on the college proficiency exam (0 credits awarded).

Completion of the intermediate-level course (106) in either French, German, or Italian and one beginning-level course (105) in the other two. The number of credits needed and initial placement will depend on the number of years of high school student of foreign language.

Students with three or more years of high school work in a single foreign language, or who have gained proficiency in a foreign language by other means, may attempt to fulfill the requirement in that language by taking an exemption examination through the Foreign Languages and Literatures Department. 8-16

- Thea 226 Acting I 3
Music Electives
Six credits from the following: 6
MUSC 103  Introduction to Italian Opera
MUSC 104  Introduction to Opera
MUSC 395  Form Analysis
MUSC 407  Contemporary Music Literature
or one of the following courses not taken as a Related Music Studies course:
MUSC 426  German Lieder
MUSC 427  French Art Song
MUSC 428  Twentieth-Century Art Song

Successful performance on the college proficiency exam (0 credits awarded).

COLLEGE BREADTH REQUIREMENTS
Group A 3
Creative Arts and Humanities. Course should satisfy the University Breadth Requirement.
Group B 3
History and Cultural Change. Course should satisfy the University Breadth Requirement.
Group C 6
Social and Behavioral Sciences. Six credits representing two different areas.
One course may be used to satisfy the University Breadth Requirement.
Group D 3
Mathematics, Natural Sciences and Technology. Course should satisfy the University Breadth Requirement.

MAJOR REQUIREMENTS

Applied Music
MUSC 100  Recital Attendance (six semesters required) 0
MUSC 151  Private Study 2
MUSC 152  Private Study 2
MUSC 251  Private Study 2
MUSC 252  Private Study 2
MUSC 351  Private Study 2
MUSC 352  Private Study 2
MUSC 451  Private Study 2
MUSC 175  Class Piano: Elementary I 1
MUSC 176  Class Piano: Elementary II 1
MUSC 275  Class Piano: Intermediate I 1
MUSC 276  Class Piano: Intermediate II 1
MUSC 174  Class Voice: Beginning 1
MUSC 301  Junior Recital 0

Theory
MUSC 185/MUSC 186  Ear Training and Sight Singing I and II 4
MUSC 285/MUSC 286  Advanced Ear Training and Sight Singing I and II 4
MUSC 195/MUSC 196  Harmony I and II 6

CREDITS TO TOTAL A MINIMUM OF 131
should consult the teacher education program coordinator to obtain the student teaching application and other information concerning student teaching policies.

CREDITS TO TOTAL A MINIMUM OF 133

**BACHELOR OF MUSIC - MUSIC EDUCATION - GENERAL/CHORAL (PIANO)**

**UNIVERSITY REQUIREMENTS**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 110</td>
<td>3</td>
</tr>
<tr>
<td>Critical Reading and Writing (minimum grade C-)</td>
<td></td>
</tr>
<tr>
<td>First Year Experience (FYE)</td>
<td>1</td>
</tr>
</tbody>
</table>

University Breadth Requirement

Up to 3 credits from each of the University Breadth Requirement categories may be used to simultaneously satisfy the College of Arts and Sciences Breadth Requirements. 12

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discovery Learning Experience (DLE)</td>
<td>3</td>
</tr>
<tr>
<td>Multi-cultural Courses</td>
<td>3</td>
</tr>
</tbody>
</table>

**COLLEGE REQUIREMENTS**

Writing: (minimum grade C-) 3

A second writing course involving significant writing experience including two papers with a combined minimum of 3,000 words to be submitted for extended faculty critique of both composition and content. This course must be taken after completion of 60 credit hours. Appropriate writing courses are normally designated in the semester’s Registration Booklet. (See list of courses approved for second writing requirement)

Mathematics: One of the following 0-4

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 113</td>
<td>4</td>
</tr>
<tr>
<td>Contemporary Mathematics (designed for students who do not intend to continue the study of mathematics)</td>
<td></td>
</tr>
<tr>
<td>MATH 114</td>
<td>3</td>
</tr>
<tr>
<td>College Mathematics and Statistics (designed for students who do not intend to continue the study of mathematics)</td>
<td></td>
</tr>
<tr>
<td>MATH 115</td>
<td>2</td>
</tr>
<tr>
<td>Pre-Calculus (designed for students who intend to continue the study of mathematics)</td>
<td></td>
</tr>
<tr>
<td>MATH 221</td>
<td>3</td>
</tr>
<tr>
<td>Calculus I</td>
<td></td>
</tr>
<tr>
<td>MATH 241</td>
<td>3</td>
</tr>
<tr>
<td>Analytic Geometry and Calculus A</td>
<td></td>
</tr>
</tbody>
</table>

Successful performance on the college proficiency exam (0 credits awarded).

**COLLEGE BREADTH REQUIREMENTS**

Group A 3

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSC 295/MUSC 296</td>
<td>6</td>
</tr>
<tr>
<td>Advanced Harmony I and II</td>
<td></td>
</tr>
<tr>
<td>MUSC 431</td>
<td>2</td>
</tr>
<tr>
<td>Orchestration</td>
<td></td>
</tr>
</tbody>
</table>

**Ensemble**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSC 113 Marching Band</td>
<td>3</td>
</tr>
<tr>
<td>An additional four credits from MUSC 113, MUSC 114, MUSC 115, MUSC 117</td>
<td>4</td>
</tr>
</tbody>
</table>

**Literature**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSC 211 Introduction to Music History</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 311 Music History: 400-1600</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 312 Music History: 1600-1827</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 313 Music History: 1827 to the Present</td>
<td>3</td>
</tr>
</tbody>
</table>

**Secondary Instruments**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSC 214 Stringed Instruments Class</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 215 High Brass Instruments Class</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 216 Low Brass Instruments Class</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 217/MUSC 218 Woodwind Instruments Class I and II</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 219 Percussion Instruments</td>
<td>1</td>
</tr>
</tbody>
</table>

**Music Methods**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUED 179 Freshman Seminar in Music Education</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 287 Music Technology</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 335 Basic Conducting</td>
<td>2</td>
</tr>
<tr>
<td>MUED 279 Elementary General Music Methods and Materials</td>
<td>3</td>
</tr>
<tr>
<td>MUED 337 Instrumental Conducting</td>
<td>2</td>
</tr>
<tr>
<td>MUED 379 Music in the Elementary and Junior High (or Middle) School</td>
<td>3</td>
</tr>
<tr>
<td>MUED 479 Secondary Music Materials and Approaches</td>
<td>3</td>
</tr>
</tbody>
</table>

**Music Electives**

Six music electives excluding ensemble and private study on primary instrument 6

**Professional Studies**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDUC 413 Adolescent Development and Educational Psychology</td>
<td>4</td>
</tr>
<tr>
<td>EDUC 414 Teaching Exceptional Adolescents</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 419 Diversity in Secondary Education</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 400 StudentTeaching</td>
<td>12</td>
</tr>
</tbody>
</table>

Grade of C- or better required in all major and Professional Studies courses.

To be eligible to student teach, Music Education students must have a GPA of 2.75 in their music major and an overall GPA of 2.5. Students must also pass the Praxis II exam in order to enroll in student teaching (EDUC 400). Students
Creative Arts and Humanities. Course should satisfy University Breadth Requirement.
Group B  3

History and Cultural Change. Course should satisfy University Breadth Requirement.
Group C  6

Social and Behavioral Sciences. Six credits representing two different areas.
One course may be used to satisfy the University Breadth Requirement.
Group D  3

Mathematics, Natural Sciences and Technology. Course should satisfy University Breadth Requirement.

MAJOR REQUIREMENTS

Applied Music
MUSC 100  Recital Attendance (six semesters required)  0
MUSC 151  Private Study: Piano  2
MUSC 152  Private Study: Piano  2
MUSC 251  Private Study: Piano  2
MUSC 252  Private Study: Piano  2
MUSC 351  Private Study: Piano  2
MUSC 352  Private Study: Piano  2
MUSC 451  Private Study: Piano  2
MUSC 155  Private Study: Voice (four semesters required)  4
MUSC 480  Vocal Pedagogy  3
MUSC 171  Diction: English and Italian  1
MUSC 271  Diction: German  1
MUSC 272  Diction: French  1
MUSC 301  Junior Recital  0

Theory
MUSC 185/MUSC 186  Ear Training and Sight Singing I and II  4
MUSC 285/MUSC 286  Advanced Ear Training and Sight Singing I and II  4
MUSC 195/MUSC 196  Harmony I and II  6
MUSC 295/MUSC 296  Advanced Harmony I and II  6
MUSC 407  Contemporary Music Literature  3
or
MUSC 431  Orchestration  2

Ensemble: One of the following (any 7 semesters)  7
MUSC 108  University Singers
or
MUSC 109  Schola Cantorum
or
MUSC 110  Chorale

Literature
MUSC 211  Introduction to Music History  3
MUSC 311  Music History: 400-1600  3
MUSC 312  Music History: 1600-1827  3
MUSC 313  Music History: 1827 to the Present  3
MUSC 328  Choral Literature  2

Secondary Instruments
MUSC 214  Stringed Instruments Class  1
MUSC 215  High Brass Instruments Class  1
or
MUSC 217  Woodwind Instruments Class I

Music Methods
MUED 179  Freshman Seminar in Music Education  1
MUSC 287  Music Technology  3
MUSC 335  Basic Conducting  2
MUED 279  Elementary General Music Methods and Materials  3
MUED 336  Choral Conducting  2
MUED 378  Secondary Music Methods and Materials  3
MUED 478  Secondary Music Materials and Approaches: Choral  3

Music Electives
Three credits of music electives excluding ensemble and private study on primary instrument. (MUSC 407 recommended)  3

Professional Studies
EDUC 413  Adolescent Development and Educational Psychology  4
EDUC 414  Teaching Exceptional Adolescents  3
EDUC 419  Diversity in Secondary Education  3
EDUC 400  Student Teaching  12

Grade of C- or better required in all major and Professional Studies courses.

To be eligible to student teach, Music Education students must have a GPA of 2.75 in their music major and an overall GPA of 2.5. Students must also pass the Praxis II exam in order to enroll in student teaching (EDUC 400). Students should consult the teacher education program coordinator to obtain the student teaching application and other information concerning student teaching policies.

CREDITS TO TOTAL A MINIMUM OF 133
BACHELOR OF MUSIC - MUSIC EDUCATION - GENERAL/CHORAL (VOICE)

UNIVERSITY REQUIREMENTS

ENGL 110 Critical Reading and Writing 3
(should satisfy University Breadth Requirement.
First Year Experience (FYE) 1

University Breadth Requirement
Up to 3 credits from each of the University
Breadth Requirement categories may be used
to simultaneously satisfy the College of Arts and
Sciences Breadth Requirements. 12

Discovery Learning Experience (DLE) 3
Multi-cultural Courses 3

COLLEGE REQUIREMENTS

Writing: (minimum grade C-) 3
A second writing course involving significant
writing experience including two papers with
a combined minimum of 3,000 words to be
submitted for extended faculty critique of both
composition and content. This course must
be taken after completion of 60 credit hours.
Appropriate writing courses are normally
designated in the semester's Registration
Booklet. (See list of courses approved for second
writing requirement.)

Mathematics: One of the following 0-4
MATH 113 Contemporary Mathematics
(designed for students who do not intend to
continue the study of mathematics)
MATH 114 College Mathematics and Statistics
(designed for students who do not intend to
continue the study of mathematics)
MATH 115 Pre-Calculus (designed for
students who intend to continue the study of
mathematics)
MATH 221 Calculus I
MATH 241 Analytic Geometry and
Calculus A
Successful performance on the college
proficiency exam (0 credits awarded).

COLLEGE BREADTH REQUIREMENTS

Group A 3
Creative Arts and Humanities. Course should
satisfy University Breadth Requirement.

Group B 3
History and Cultural Change. Course should
satisfy University Breadth Requirement.

Group C 6
Social and Behavioral Sciences. Six credits
representing two different areas.

One course may be used to satisfy the University
Breadth Requirement.

Group D 3
Mathematics, Natural Sciences and Technology.
Course should satisfy University Breadth
Requirement.

MAJOR REQUIREMENTS

Applied Music

MUSC 100 Recital Attendance (six semesters
required) 0
MUSC 151 Private Study 2
MUSC 152 Private Study 2
MUSC 251 Private Study 2
MUSC 252 Private Study 2
MUSC 351 Private Study 2
MUSC 352 Private Study 2
MUSC 451 Private Study 2
MUSC 175 Class Piano: Elementary I 1
MUSC 176 Class Piano: Elementary II 1
MUSC 275 Class Piano: Intermediate I 1
MUSC 276 Class Piano: Intermediate II 1
MUSC 171 Diction: English and Italian 1
MUSC 271 Diction: German 1
MUSC 272 Diction: French 1
MUSC 480 Vocal Pedagogy 3
MUSC 301 Junior Recital 0

Theory

MUSC 185/MUSC 186
Ear Training and Sight Singing
I and II 4
MUSC 285/MUSC 286
Advanced Ear Training and
Sight Singing I and II 4
MUSC 195/MUSC 196
Harmony I and II 6
MUSC 295/MUSC 296
Advanced Harmony I and II 6
MUSC 407 Contemporary Music
Literature 3
or
MUSC 431 Orchestration 2

Ensemble: One of the following (any 7
semesters) 7
MUSC 108 University Singers
or
MUSC 109 Schola Cantorum
or
MUSC 110 Chorale

Literature

MUSC 211 Introduction to Music History 3
MUSC 311 Music History: 400-1600 3
MUSC 312 Music History: 1600-1827 3
MUSC 313 Music History: 1827 to the
Present 3
MUSC 328 Choral Literature 2
Up to 3 credits from each of the University Breadth Requirement categories may be used to simultaneously satisfy the College of Arts and Sciences Breadth Requirements.

Discovery Learning Experience (DLE) 3
Multi-cultural Courses 3

COLLEGE REQUIREMENTS
Writing: (minimum grade C-) 3
A second writing course involving significant writing experience including two papers with a combined minimum of 3,000 words to be submitted for extended faculty critique of both composition and content. This course must be taken after completion of 60 credit hours. Appropriate writing courses are normally designated in the semester’s Registration Booklet. (See list of courses approved for second writing requirement.)

Mathematics: One of the following 0-4
MATH 113 Contemporary Mathematics
(designed for students who do not intend to continue the study of mathematics)
MATH 114 College Mathematics and Statistics
(designed for students who do not intend to continue the study of mathematics)
MATH 115 Pre-Calculus (designed for students who intend to continue the study of mathematics)
MATH 221 Calculus I
MATH 241 Analytic Geometry and Calculus A

Completion of the intermediate-level course (106) in German, French, Italian, or Spanish. The number of credits needed and initial placement will depend on the number of years of high school student of foreign language. Students with three or more years of high school work in a single foreign language, or who have gained proficiency in a foreign language by other means, may attempt to fulfill the requirement in that language by taking an exemption examination through the Foreign Languages and Literatures Department.

BACHELOR OF MUSIC - MUSIC COMPOSITION

UNIVERSITY REQUIREMENTS

ENGL 110 Critical Reading and Writing (minimum grade C-) 3
First Year Experience (FYE) 1

University Breadth Requirement

COLLEGE BREADTH REQUIREMENTS

Group A 6
Creative Arts and Humanities. Six credits representing two different areas (excluding Music).
One course may be used to satisfy the University Breadth Requirement.

Group B 6
History and Cultural Change. Six credits representing two different areas (excluding
## Major Requirements

### Applied Music
- **MUSC 100** Recital Attendance (six semesters required) 0
- **MUSC 151** Private Study 2
- **MUSC 152** Private Study 2
- **MUSC 251** Private Study 2
- **MUSC 252** Private Study 2
- **MUSC 351** Private Study 2
- **MUSC 352** Private Study 2
- **Ensemble** (six semesters) 6
- **MUSC 321** Still Breathing 2

### Core Courses
- **MUSC 175/MUSC 176** Class Piano: Elementary I and II 2
- **MUSC 275/MUSC 276** Class Piano: Intermediate I and II 2
- **MUSC 185/MUSC 186** Ear Training and Sight Singing I and II 4
- **MUSC 285/MUSC 286** Advanced Ear Training and Sight Singing I and II 4
- **MUSC 195/MUSC 196** Harmony I and II 6
- **MUSC 295/MUSC 296** Advanced Harmony I and II 6
- **MUSC 335** Basic Conducting 2
- **MUSC 392** Contrapuntal Writing 2
- **MUSC 393** Keyboard Harmony I 2
- **MUSC 431** Orchestration 2
- **MUSC 495** Form and Analysis 3

### Music History and Literature
- **MUSC 211** Introduction to Music History 3
- **MUSC 311** Music History: 400-1600 3
- **MUSC 312** Music History: 1600-1827 3
- **MUSC 313** Music History: 1827 to the Present 3
- **MUSC 407** Contemporary Music Literature 3
- **MUSC 205** Music of the World 3

### Composition
- **MUSC 298** Beginning Composition (4 semesters) 4
- **MUSC 420** Advanced Composition 12
- **MUSC 401** Senior Degree Recital 0

### Music Electives
3

Grade of C- or better required in all courses in major.

CREDITS TO TOTAL A MINIMUM OF 128

## Bachelor of Music - Music Theory

### University Requirements
- **ENGL 110** Critical Reading and Writing (minimum grade C-) 3
- **First Year Experience (FYE)** 1

### University Breadth Requirements
Up to 3 credits from each of the University Breadth Requirement categories may be used to simultaneously satisfy the College of Arts and Sciences Breadth Requirements. 12

### Discovery Learning Experience (DLE) 3

### Multicultural Course 3

### College Requirements
- **Writing** (minimum grade C-):
  A second writing course involving significant writing experience including two papers with a combined minimum of 3,000 words to be submitted for extended faculty critique of both composition and content. This course must be taken after completion of 60 credit hours. Appropriate writing courses are normally designated in the semester’s Registration Booklet. (See list of courses approved for second writing requirement.) 3

### Mathematics
Choose one of the following courses: 0-4
- **MATH 113** Contemporary Mathematics (designed for students who do not intend to continue the study of mathematics)
- **MATH 114** College Mathematics and Statistics (designed for students who do not intend to continue the study of mathematics)
- **MATH 115** Pre-Calculus (designed for students who intend to continue the study of mathematics)
- **MATH 221** Calculus I
- **MATH 241** Analytic Geometry and Calculus A
Foreign Language 4-12
Completion of the intermediate-level course (106) in German, French, Italian, or Spanish. The number of credits needed and initial placement will depend on the number of years of high school student of foreign language. Students with three or more years of high school work in a single foreign language, or who have gained proficiency in a foreign language by other means, may attempt to fulfill the requirement in that language by taking an exemption examination through the Foreign Languages and Literatures Department.

COLLEGE BREADTH REQUIREMENTS
Group A 6
Creative Arts and Humanities. Six credits representing two different areas (excluding Music). One course may be used to satisfy the University Breadth Requirement.
Group B 6
Creative Arts and Humanities. Six credits representing two different areas (excluding Music). One course may be used to satisfy the University Breadth Requirement.
Group C 6
History and Cultural Change. Six credits representing two different areas (excluding Music). One course may be used to satisfy the University Breadth Requirement.
Group D 6
Mathematics, Natural Sciences and Technology. Six credits representing two different areas. One course may be used to satisfy the University Breadth Requirement.

MAJOR REQUIREMENTS
Applied Music
MUSC 100 Recital Attendance (six semesters required) 0
MUSC 151 Private Study 2
MUSC 152 Private Study 2
MUSC 251 Private Study 2
MUSC 252 Private Study 2
MUSC 351 Private Study 2
MUSC 352 Private Study 2
Ensemble (six semesters) 6
MUSC 125 and/or MUSC 321 Collegium Musicum and/or Still Breathing 3

Core Courses
MUSC 175/ MUSC 176 Class Piano: Elementary I and II 2
MUSC 275/ MUSC 276 Class Piano: Intermediate I and II 2
MUSC 185/MUSC 186 Ear Training and Sight Singing I and II 4
MUSC 285/ MUSC 286 Advanced Ear Training and Sight Singing I and II 4
MUSC 195/ MUSC 196 Harmony I and II 6
MUSC 295/ MUSC 296 Advanced Harmony I and II 6
MUSC 335 Basic Conducting 2
MUSC 211 Introduction to Music History 3
MUSC 311 Music History: 400-1600 3
MUSC 312 Music History: 1600-1827 3
MUSC 313 Music History: 1827 to the Present 3
MUSC 205 Music of the World 3
MUSC 392 Contrapuntal Writing 2
MUSC 393 Keyboard Harmony I 2
MUSC 431 Orchestration 2
MUSC 695 Advanced Analytical Techniques 3
MUSC 419 Music Research Seminar 3
UNIV 401-402 Senior Thesis 6

Electives (Music or other) 3

Grade of C- or better required in all courses in major.

CREDITS TO TOTAL A MINIMUM OF 126

BACHELOR OF MUSIC - MUSIC HISTORY AND LITERATURE

UNIVERSITY REQUIREMENTS
ENGL 110 Critical Reading and Writing (minimum grade C-) 3
First Year Experience (FYE) 1

University Breadth Requirements
Up to 3 credits from each of the University Breadth Requirement categories may be used to simultaneously satisfy the College of Arts and Sciences Breadth Requirements. 12

Discovery Learning Experience (DLE) 3
Multicultural Course 3

COLLEGE REQUIREMENTS
Writing (minimum grade C-): A second writing course involving significant writing experience including two papers with a combined minimum of 3,000 words to be submitted for extended faculty critique of both composition and content. This course must be taken after completion of 60 credit hours. Appropriate writing courses are normally designated in the semester’s Registration
MAJOR REQUIREMENTS

Applied Music

MUSC 100 Recital Attendance (six semesters required) 0
MUSC 151 Private Study 2
MUSC 152 Private Study 2
MUSC 251 Private Study 2
MUSC 252 Private Study 2
MUSC 351 Private Study 2
MUSC 352 Private Study 2
Ensemble (six semesters) 6
MUSC 125 and/or MUSC 321 Collegium Musicum and/or Still Breathing 3

Core Courses

MUSC 175/ MUSC 176 Class Piano: Elementary I and II 2
MUSC 275/ MUSC 276 Class Piano: Intermediate I and II 2
MUSC 185/ MUSC 186 Ear Training and Sight Singing I and II 4
MUSC 285/ MUSC 286 Advanced Ear Training and Sight Singing I and II 4
MUSC 195/ MUSC 196 Harmony I and II 6
MUSC 295/ MUSC 296 Advanced Harmony I and II 6
MUSC 335 Basic Conducting 2
MUSC 211 Introduction to Music History 3
MUSC 311 Music History: 400-1600 3
MUSC 312 Music History: 1600-1827 3
MUSC 313 Music History: 1827 to the Present 3
MUSC 205 Music of the World 3
MUSC 403 Chamber Music Literature 3
MUSC 405 Symphonic Literature 3
MUSC 611 Topics in Music History 3
MUSC 419 Music Research Seminar 3
UNIV 401-402 Senior Thesis 6

Electives (Music or other) 6

Grade of C- or better required in all courses in major.

CREDITS TO TOTAL A MINIMUM OF 126

HONORS BACHELOR OF ARTS - MUSIC

The recipient must complete:

All requirements for the Bachelor of Arts in Music
All the University's generic requirements for the Honors Degree.
HONORS BACHELOR OF MUSIC (All Majors)

Requirements for the Honors Bachelor of Music

COURSEWORK:
A total of 30 hours of honors credit must be earned. These credits must include 12 credits in music and 12 credits at the 300 level or higher.

The following music courses are regularly offered with honors sections:

- MUSC 195  Harmony I (Fall)
- MUSC 295  Advanced Harmony I (Fall)
- MUSC 311  Music History, 400-1600 (Spring)
- MUSC 312  Music History, 1600-1827 (Fall)

In addition, the following courses if taken for graduate credit, will qualify for honors credit:

- MUSC 403/MUSC 603  Chamber Music Literature (Spring)
- MUSC 405/MUSC 605  Symphonic Literature (Spring)
- MUSC 407/MUSC 607  Contemporary Music Literature (Fall)
- MUSC 426/MUSC 608  German Lieder (Spring)
- MUSC 427/MUSC 608  French Arts Song (Spring)
- MUSC 428/MUSC 608  Twentieth Century Art Song (Spring)

CAPSTONE PROJECT:
All students must take an approved capstone course such as UNIV 401/UNIV 402, UNIV 490, or a capstone in a second major. Any capstone course must be taken for a grade and for at least three credits. Students may also take the following options within the music curriculum:

- MUSC 175  Class Piano 1
- MUSC 153, MUSC 154, MUSC 253, MUSC 254  Private Study: BA/Minor 8
- MUSC 403/MUSC 603  Chamber Music Literature (Spring)
- MUSC 405/MUSC 605  Symphonic Literature (Spring)
- MUSC 407/MUSC 607  Contemporary Music Literature (Fall)
- MUSC 426/MUSC 608  German Lieder (Spring)
- MUSC 427/MUSC 608  French Arts Song (Spring)
- MUSC 428/MUSC 608  Twentieth Century Art Song (Spring)

MUSIC EDUCATION:
Music Education majors may take UNIV 468 (3 credits, graded) in the semester of their student teaching, concentrating on a project that will be incorporated into their Student Teaching experience. Contact the Music Office for more information.

APPLIED MUSIC:
Applied Music majors may incorporate their senior recital into their project for UNIV 401/UNIV 402. Contact the Office of Undergraduate Research for more information.

MUSIC THEORY/COMPOSITION
Music Theory majors may substitute UNIV 401/UNIV 402 for MUSC 419 and MUSC 421.

Composition majors may make original compositions the focus of UNIV 401/UNIV 402.

Contact the Office of Undergraduate Research for more information.

MINOR IN MUSIC

A minimum grade of C- is required in each course for music minors.

MUSIC MINOR: APPLIED MUSIC-PRINCIPAL INSTRUMENT

This title represents all applied music minors, the actual titles of which include the name of the instrument of study (e.g. Applied Music-Bassoon). See a list of applied music minors, or they can be obtained from the Department or the Academic Advisement Center.

The Applied Music minor is for nonmusic majors with some musical background who wish to continue their musical training on a more formal basis or music majors who wish to receive formal training on an additional instrument. Places in the minor program are dependent upon the total load of the applied faculty member involved. Admission into the Applied Music minor is determined by audition and musicality testing. The requirements are:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSC 175  Class Piano</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 153, MUSC 154, MUSC 253, MUSC 254  Private Study: BA/Minor</td>
<td>8</td>
</tr>
<tr>
<td>MUSC 153, MUSC 154, MUSC 253, MUSC 254  Private Study: BA/Minor</td>
<td>8</td>
</tr>
<tr>
<td>MUSC 185 and MUSIC 195  Ear Training and Sight Singing/Harmony I</td>
<td>5</td>
</tr>
<tr>
<td>MUSC 185 and MUSIC 195  Ear Training and Sight Singing/Harmony I</td>
<td>5</td>
</tr>
<tr>
<td>Music Literature/History</td>
<td>3</td>
</tr>
<tr>
<td>(MUSC 101 and MUSC 102 do not fulfill this requirement. Any other music history course will do.)</td>
<td></td>
</tr>
</tbody>
</table>

TOTAL CREDITS 21
(For Piano minors 20)
MUSIC MINOR: MUSIC MANAGEMENT STUDIES

The minor in music management studies examines the theory and practice of core principles in both the nonprofit and for-profit sectors of music. It is intended for music majors who wish to broaden the scope of their studies and enhance their career options; and non-music majors with a foundation in music who wish to develop executive careers within the music industry.

Students who are not also music majors must successfully complete (with a grade of C- or better) at least 15 credits of specified music theory courses, before declaring the minor or registering for the core courses listed below. A musicality test will be required for placement in music theory classes. Students interested in the minor in Music Management Studies are strongly urged to seek advisement from the music department upon admission to the University and not later than their sophomore year. Curriculum sheets for this minor are available in the music office and online through the Department of Music website at www.music.udel.edu

All students selecting the minor, both music majors and non-music majors, will complete a core component of 10-12 credits as follows:

CREDITS
- MUSC 389 Elements of Music Management 3
- MUSC 309 Patterns of Patronage 3
- MUSC 464 Internship 1-3
- MUSC 488 Principles of Music Industry Practice 3

TOTAL CREDITS 19-21

MUSIC MINOR: COMPOSITION

For the music major who has a strong interest in musical composition. Admission to the minor requires approval, based on an interview and the submission of three sample scores.

CREDITS
- MUSC 298 Beginning Composition 2
- MUSC 392 Contrapuntal Writing 2
- MUSC 407 Contemporary Music Literature 3
- MUSC 431 Orchestration 2
- MUSC 484 Recording Techniques 3
- MUSC 495 Form and Analysis 3
- MUSC 420 Advanced Composition 6

TOTAL CREDITS 18-23

MUSIC MINOR: MUSICAL STUDIES

The Musical Studies minor is for nonmusic
results of the Graduate Management Admission Test (GMAT-taken in the Junior year), GPA, work experience, letters of recommendation, extracurricular activities, maturity and a personal interview. Those accepted into the MBA program may be considered for graduate assistantships, Corporate Associates and graduate fellowships upon earning their bachelor's degree.

Applicable fees are those for matriculated undergraduate students for the first four years. During the fifth year of study, and any subsequent period if it becomes necessary, applicable fees are those for matriculated MBA graduate students. The MBA degree is granted upon completing all requirements with a grade point average of at least 3.0, participating in required activities and becoming an active member of the MBA community.

For further information about the 4+1 program, contact the Department of Music and Graduate and Executive Program Office of the Lerner College of Business and Economics.

**Philosophy**

Telephone: (302) 831-2359  
http://www.udel.edu/Philosophy  
Faculty Listing:  
http://www.udel.edu/Philosophy/content/home/people.htm

Philosophy provides training in basic methods of reasoning, both clear thinking procedures for everyday decision making and more formal techniques of logical analysis. It examines fundamental issues and ideas about our knowledge and values. It furnishes a critical perspective on the methods and results of other disciplines.

A major, a minor, or a concentration in philosophy is a useful background for many careers including the teaching of philosophy. Majors often go on to graduate work in other Arts and Sciences disciplines, as well as to further schooling in law, theology, education, data processing, or business. In general, philosophy offers all students opportunities to develop their critical and analytical skills.

The American Philosophical Association's national headquarters is on the Delaware campus www.apa.udel.edu/apa/.

**BACHELOR OF ARTS - PHILOSOPHY**

University and College requirements.
BACHELOR OF ARTS - PHYSICS

MAJOR REQUIREMENTS
Both of the following History of Philosophy courses 6
PHIL 301 Ancient Philosophy
PHIL 303 Modern Philosophy

One of the following Logic courses 3
PHIL 105 Critical Thinking
PHIL 205 Logic

One of the following Ethics courses 3
PHIL 201 Social and Political Philosophy
PHIL 203 Ethics

One of the following Epistemology courses 3
PHIL 305* Twentieth Century Philosophy
PHIL 306 Philosophy of Science
PHIL 320 Theory of Knowledge

One of the following Metaphysics courses 3
PHIL 305* Twentieth Century Philosophy
PHIL 315 Metaphysics
PHIL 330 Philosophy of Mind

PHIL 465 Senior Seminar 3

Three Philosophy elective courses, to include: 9
One three-credit course at the 300-level or above
One three-credit course with multicultural content

*Note that PHIL 305 can be used to satisfy either the requirement in Epistemology or the requirement in Metaphysics, but not both. A student who takes PHIL 305 must take at least one additional course from one of those two categories.

ELECTIVES
After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF 124

HONORS BACHELOR OF ARTS - PHILOSOPHY
The recipient must complete:
1. All requirements for the Bachelor of Arts in Philosophy.
2. All the University’s generic requirements for the Honors Degree.
   a At least six of the twelve Honors credits required in the major must be at the 300-level or higher.
   b At least three of these Honors credits must be in either PHIL 301 or PHIL 303.

MINOR IN PHILOSOPHY
A minor in philosophy requires a minimum of 15 credits, consisting of:
PHIL 105 or PHIL 205 3
PHIL 301 or PHIL 303 3
an additional 300-level PHIL course 3
two PHIL electives 6

Physics And Astronomy
Telephone: (302) 831-2661
http://www.physics.udel.edu/
Faculty Listing: http://www.physics.udel.edu/contact/

The Department of Physics and Astronomy offers an undergraduate major program leading to the BS in physics, with the option of a concentration in astronomy/astrophysics. There are also majors leading to the BA in physics and to the BA in Physics Education, as well as minors in physics and in astronomy.

The department maintains a balanced program of instruction for students who wish to acquire some understanding of physics as part of their cultural background, as well as for those who require training in physics in preparation for engineering or scientific careers. Intermediate and advanced courses are offered for students who plan teaching or research careers in physics or related disciplines.

The research activity of the Physics and Astronomy Department and of the Bartol Research Institute, in Sharp Laboratory, is diverse and substantial. Undergraduate participation in research is encouraged.

BACHELOR OF ARTS - PHYSICS

University and College requirements.

MAJOR REQUIREMENTS
PHYS 169 Perspectives on Physics and Astronomy 1
PHYS 207/PHYS 208 Fundamentals of Physics I and II (strongly recommended) 8
PHYS 211 Oscillations and Waves 3

Nineteen credits in Physics, of which fifteen must be at the 300-level or higher 19

MATH 241/MATH 242/ MATH 243
Analytic Geometry and Calculus A, B and C (recommended) 12
All 200-level PHYS courses used to satisfy prerequisite or graduation requirements must be passed with a minimum grade of C-.

PHYS 169 Perspectives: Physics and Astronomy 1
PHYS 207/PHYS 208 Fundamentals of Physics I and II 8
PHYS 211 Oscillations and Waves 3
PHYS 309 20th/21st Century Physics 3
PHYS 310 Introduction to Thermal Physics 3
PHYS 311 Aspects of Modern Physics 3
PHYS 313 Physical Optics 4
PHYS 419 Classical Mechanics I 3
PHYS 424 Quantum Mechanics 3
PHYS 603 Electricity and Magnetism I 3
Additional credits of Physics at or above the 400 level 12

MATH 241/MATH 242/ MATH 243 Analytic Geometry and Calculus A, B and C 12

One of the following: 6
MATH 302/MATH 349 Ordinary Differential Equations and Elementary Linear Algebra
MATH 341/MATH 342 Differential Equations with Linear Algebra

CHEM 103 General Chemistry 4
CISC 106 General Computer Science for Engineers 3

Foreign Language or Computer Science: 0-12
Completion of the intermediate-level course (107 or 112) in a given foreign language. Number of credits needed and initial placement will depend on number of years of high school study of foreign language. Students with four or more years of high school work in a single foreign language may attempt to fulfill the requirement in that language by taking an exemption examination.
Or,
Completion of the following Computer Science sequence:
CISC 106 General Computer Science for Engineers 3
CISC 181 Introduction to Computer Science II 3
CISC 220 Data Structures 3
Additional credits of Computer Science at or above the 260 level 3

ELECTIVES
After required courses are completed, sufficient elective credits must be taken to meet the
minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF 124

BACHELOR OF SCIENCE - PHYSICS
(ASTRONOMY/ASTROPHYSICS)

UNIVERSITY REQUIREMENTS

ENGL 110  Critical Reading and Writing  3
(minimum grade C-)
First Year Experience (FYE)  0-4
University Breadth Requirement (minimum grade C-)  12
Discovery Learning Experience (DLE)  3
Multi-cultural Course  3

COLLEGE REQUIREMENTS

Writing: (minimum grade C-)  3
A second writing course involving significant writing experience including two papers with a combined minimum of 3,000 words to be submitted for extended faculty critique of both composition and content. This course must be taken after completion of 60 credit hours. Appropriate writing courses are normally designated in the semester’s Registration Booklet. (See list of courses approved for second writing requirement)

College of Arts and Sciences Breadth Requirements: (minimum grade C-)
The College Breadth Requirements are in addition to the University Breadth Requirement. Up to 3 credits from each of the University Breadth Requirement categories may be used to simultaneously satisfy these College of Arts and Sciences Breadth Requirements.

A total of eighteen credits from Groups A, B and C is required with a minimum of six credits in each group. The six credits from each group could be from the same area. 18

Group A: Creative Arts and Humanities
Group B: History and Cultural Change
Group C: Social and Behavioral Sciences.

MAJOR REQUIREMENTS

All 200-level PHYS courses used to satisfy prerequisites or graduation requirements must be passed with a minimum grade of C-.

PHYS 169  Perspectives: Physics & Astronomy  1
PHYS 207/PHYS 208  Fundamentals of Physics I and II  8
PHYS 211  Oscillation and Waves  3
PHYS 309  20th/21st Century Physics  3
PHYS 310  Thermodynamics  3
PHYS 311  Aspects of Modern Physics  3
PHYS 313  Physical Optics  4
PHYS 333  Fundamentals of Astrophysics  3
PHYS 419  Classical Mechanics I  3
PHYS 424  Quantum Mechanics  3
PHYS 460  Computational Methods of Physics  3
PHYS 468  Introduction to Research  3
PHYS 469  Observational Astronomy  3
PHYS 603  Electricity and Magnetism I  3

Two of the following  6
PHYS 434  Astrophysics and the Origins of Life
PHYS 630  Galaxies
PHYS 632  Astrophysics
PHYS 633  Stellar Astrophysics
PHYS 634  Physics of the Sun
PHYS 635  Space Physics
PHYS 639  Selected Topics in Astrophysics
PHYS 644  Elementary Particles and Big Bang Cosmology

MATH 241/MATH 242/ MATH 243  Analytic Geometry and Calculus A, B and C  12
CHEM 103  General Chemistry  4
CISC 106  General Computer Science for Engineers  3

Foreign Language or Computer Science:  0-12

Completion of the intermediate-level course (107 or 112) in a given foreign language. Number of credits needed and initial placement will depend on number of years of high school study of foreign language. Students with four or more years of high school work in a single foreign language may attempt to fulfill the requirement in that language by taking an exemption examination.

OR,
Completion of the following Computer Science sequence:
CISC 106  General Computer Science for Engineers  3
CISC 181  Introduction to Computer Science  3
CISC 220  Data Structures  3
Additional credits of Computer Science at or above the 260 level  3

ELECTIVES
After required courses are completed, sufficient
elective credits must be taken to meet the minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF 124

BACHELOR OF ARTS - PHYSICS EDUCATION

University and College requirements.

MAJOR REQUIREMENTS
PHYS 169 Perspectives: Physics and Astronomy 1
PHYS 207/PHYS 208 Fundamentals of Physics I and II 8
PHYS 211 Oscillations and Waves 3
PHYS 309 20th/21st Century Physics 3
Fifteen credits in PHYS, fifteen of which must be at the 300-level or higher. 15

MATH 241/MATH 242/ MATH 243 Analytic Geometry and Calculus A, B and C 12
MATH 302 Ordinary Differential Equations 3
CHEM 103/CHEM 104 General Chemistry 8
CISC 106 General Computer Science for Engineers 3
EDUC 413 Adolescent Development and Educational Psychology 4
EDUC 414 Teaching Exceptional Adolescents 3
EDUC 419 Diversity in Secondary Education 3
EDUC 400 Student Teaching 9
EDUC 420 Reading in the Content Areas 1
SCEN 491 Teaching Science in Secondary Schools 4

A grade of C- or better is required in all required PHYS, MATH, CHEM, EDUC, and SCEN courses.

To be eligible to student teach, Physics Education students must have a GPA of 2.75 in their physics major and an overall GPA of 2.5. They must also pass a teacher competency test as established by the University Council on Teacher Education. Students should consult the teacher education program coordinator to obtain the student teaching application and other information concerning student teaching policies.

CREDITS TO TOTAL A MINIMUM OF 124

HONORS BACHELOR OF SCIENCE - PHYSICS (ALL CONCENTRATIONS)

The recipient must complete:
  All requirements for the Bachelor of Science Degree in Physics
  All of the University's generic requirements for the Honors Baccalaureate Degree.
  At least 8 of the 12 Honors credits required in the major must be in Honors PHYS courses. The remaining Honors credits in the major may come from related courses required for the major.

Note: Courses at the 600-level or higher in physics in excess of the 600-level courses required for the BS degree may be considered as Honors courses.

HONORS BACHELOR OF ARTS - PHYSICS

The recipient must complete:
  All requirements for the Bachelor of Arts Degree in Physics
  All of the University's generic requirements for the Honors Baccalaureate Degree
  At least 7 of the 12 Honors credits required in the major must be in Honors PHYS courses. The remaining Honors credits in the major may come from related courses required for the major.

Note: Courses at the 600-level or higher in physics may be considered as Honors courses.

HONORS BACHELOR OF ARTS - PHYSICS EDUCATION

The recipient must complete:
  All requirements for the Bachelor of Arts Degree in Physics Education
  All of the University's generic requirements for the Honors Baccalaureate Degree
  At least 7 of the 12 Honors credits required in the major must be in Honors PHYS courses. The remaining Honors credits in the major may come from related courses required for the major.

Note: Courses at the 600-level or higher in physics may be considered as Honors courses.

MINOR IN PHYSICS

Students in other majors can declare a physics minor, consisting of PHYS 207/PHYS 208 or PHYS 245 plus 9 credits from PHYS courses at or above the 300-level. PHYS 469/PHYS 669 Observational Astronomy cannot be used to fulfill course requirements for this minor. Students considering minoring in physics should consult the physics Undergraduate Program
BACHELOR OF ARTS - POLITICAL SCIENCE

Director for advice or prerequisites for these courses and for assignment to an advisor.

MINOR IN ASTRONOMY

The requirements for the minor in Astronomy are PHYS 207, PHYS 208, or PHYS 245 and at least 9 credits from among PHYS 133 or PHYS 144 or PHYS 145 and PHYS 333, PHYS 469, PHYS 434, PHYS 630, PHYS 632, PHYS 633, PHYS 634, PHYS 635, PHYS 639 and PHYS 644.

Students considering a minor in Astronomy should consult the Director of Physics and Astronomy Undergraduate Programs for advice on prerequisites for these courses and for assignment to an advisor.

Students can earn a minor or major in Physics as well as a minor in Astronomy. However, with the exception of PHYS207/PHYS208 and PHYS245, courses applied toward the Astronomy minor cannot at the same time count toward either a Physics major or Physics minor.

POLITICAL SCIENCE AND INTERNATIONAL RELATIONS

Telephone: (302) 831-2355
http://www.udel.edu/poscir/
Faculty Listing: http://www.udel.edu/poscir/people/faculty.shtml

The Department of Political Science and International Relations administers undergraduate programs in political science and an interdisciplinary major in international relations.

POLITICAL SCIENCE

Students may earn a Bachelor of Arts through major programs in Political Science and in Political Science Education, and through a joint program with the Department of Foreign Languages and Literatures in French, German, or Spanish/Political Science. Honors degree options are available for all degrees. A minor in political science is also available.

Political science majors acquire a broad introduction to the study of government and politics within a liberal arts tradition. All majors are required to complete a set of core courses that provide an introduction to political science, American government, global politics or political theory, and research methods. Beyond the core courses, majors may choose to specialize in one of three concentrations, or to major in political science without a concentration. In both cases, students are required to take their remaining credits at the upper level (300- and 400-level). Course work for both major options with or without a concentration helps students develop analytical and written and oral communication skills and prepares them for a wide array of careers (including law) and active citizenship. Political science majors are strongly encouraged to take advantage of many experiential learning opportunities including internships, independent research under faculty supervision, study abroad, or service learning. Detailed explanations of major requirements and experiential learning opportunities are available in the department office.

Students wishing to change their major to political science must have a minimum cumulative grade point average of 2.0.

The department maintains an advisory program for pre-law students and for students interested in government service.

BACHELOR OF ARTS - POLITICAL SCIENCE

University and College requirements.

MAJOR REQUIREMENTS

Core Courses for the Major:
POSC 150 American Political System 3
POSC 240 Introduction to International Relations 3
POSC 300 Data Analysis for Political Science 3

One of the following courses:
POSC 220 Introduction to Public Policy
POSC 270 Comparative Politics
POSC 285 Introduction to Political Theory

Students must choose one of the following options:

Option One: Major Without Concentration
Eighteen credits distributed as follows: 18 - nine credits from courses at the 400-level; nine credits from courses at the 300- or 400-level. [Note: three (3) credit hours of either POSC 464 or POSC 468 may count once towards completion of the required 18 hours of upper division coursework.]
A student must take at least one course numbered at the 300- or 400-level in three of the four fields listed below: (Detailed description of
Global Studies Concentration
Six courses (18 credits) from the following two fields, with at least three courses taken in each field and at least three courses taken at the 400-level.

Institutions and Processes
- POSC 309  Political Culture by Country
- POSC 310  European Governments
- POSC 311  Politics of Developing Nations
- POSC 312  Politics of East Asian Development
- POSC 339  Britain and Europe
- POSC 362  Diplomacy
- POSC 363  International Law and Organization
- POSC 372  East Central European Politics
- POSC 408  International Organizations
- POSC 426  Latin American Political Systems
- POSC 427  Politics in China
- POSC 429  Southeast Asia and the World
- POSC 432  Political Systems of the Post-Soviet Union
- POSC 433  African Politics
- POSC 475  Model United Nations

Issues and Politics
- POSC 313  American Foreign Policy
- POSC 315  Third World Women in Politics
- POSC 316  International Political Economy
- POSC 329  International Migration
- POSC 330  Political Terrorism
- POSC 333  Contemporary Political Ideologies
- POSC 377  Arab-Israeli Politics
- POSC 409  Contemporary Problems in World Politics*
- POSC 410  Islam in Global Affairs
- POSC 412  Foreign Policy of the Post-Soviet Union
- POSC 414  Topics in American Foreign Policy*
- POSC 415  Force and World Politics
- POSC 416  International Relations History
- POSC 422  Political Leadership
- POSC 430  The Interimestnic Relations of Islam and America
- POSC 439  Topics in African Politics
- POSC 440  Comparative Public Opinion
- POSC 441  Topics in Western European Politics by Country
- POSC 442  Topics in Western European Politics
- POSC 443  China and the World
- POSC 444  Global Agenda*
- POSC 445  Human Rights and World Politics
- POSC 446  International Human Rights on Film
- POSC 448  Theories of International Relations
- POSC 450  Topics in Latin American Politics

American Politics Concentration
Six courses (18 credits) from the following two fields, with at least three courses taken in each field and at least three courses taken at the 400-level.

Institutions and Processes
- POSC 301  State and Local Government
- POSC 303  Public Administration
- POSC 320  Parties and Interest Groups
- POSC 324  Voting and Elections
- POSC 340  Politics and Media
- POSC 355  Urban Politics
- POSC 404  Judicial Process
- POSC 405  Constitutional Law of the United States
- POSC 407  American Presidency
- POSC 423  Congress and Public Policy
- POSC 447  National Agenda

Issues and Policies
- POSC 313  American Foreign Policy
- POSC 318  Public Opinion, Politics and Society
- POSC 322  Race and Politics
- POSC 323  Introduction to Women and Politics
- POSC 343  Society, Politics and Health Care
- POSC 350  Politics and the Environment
- POSC 387  American Political Thought
- POSC 401  Topics in Constitutional Law*
- POSC 402  Civil Liberties: Individual Freedoms
- POSC 403  Civil Liberties: Equal Protection Clause
- POSC 411  Politics and Poverty
- POSC 413  Topics in American Government*
- POSC 421  Political Psychology
- POSC 422  Political Leadership
- POSC 438  Topics in Political Theory
- POSC 452  Topics in Urban Politics

Three (3) credit hours of either POSC 464 or POSC 468 may count once towards completion of the above fields (Institutions and Processes or Issues and Politics).

POSC 464  Internship in Political Science
or
POSC 468  Undergraduate Research
*May be taken twice when topics differ

Option Two: Major With Concentration
Students may choose from among four concentrations: (1) American Politics, (2) Global Studies, (3) Public Law.

POSC 309  Political Culture by Country
POSC 310  European Governments
POSC 311  Politics of Developing Nations
POSC 312  Politics of East Asian Development
POSC 339  Britain and Europe
POSC 362  Diplomacy
POSC 363  International Law and Organization
POSC 372  East Central European Politics
POSC 408  International Organizations
POSC 426  Latin American Political Systems
POSC 427  Politics in China
POSC 429  Southeast Asia and the World
POSC 432  Political Systems of the Post-Soviet Union
POSC 433  African Politics
POSC 475  Model United Nations

POSC 313  American Foreign Policy
POSC 315  Third World Women in Politics
POSC 316  International Political Economy
POSC 329  International Migration
POSC 330  Political Terrorism
POSC 333  Contemporary Political Ideologies
POSC 377  Arab-Israeli Politics
POSC 409  Contemporary Problems in World Politics*
POSC 410  Islam in Global Affairs
POSC 412  Foreign Policy of the Post-Soviet Union
POSC 414  Topics in American Foreign Policy*
POSC 415  Force and World Politics
POSC 416  International Relations History
POSC 422  Political Leadership
POSC 430  The Interimestnic Relations of Islam and America
POSC 439  Topics in African Politics
POSC 440  Comparative Public Opinion
POSC 441  Topics in Western European Politics by Country
POSC 442  Topics in Western European Politics
POSC 443  China and the World
POSC 444  Global Agenda*
POSC 445  Human Rights and World Politics
POSC 446  International Human Rights on Film
POSC 448  Theories of International Relations
POSC 450  Topics in Latin American Politics

Three (3) credit hours of either POSC 464 or POSC 468 may count once towards completion of the above fields (Institutions and Processes or Issues and Politics).
BACHELOR OF ARTS - POLITICAL SCIENCE EDUCATION

POSC 464 Internship in Political Science
or
POSC 468 Undergraduate Research

*May be taken twice when topics differ.

Public Law Concentration
Six courses (18 credits) from the following two fields, with at least three courses taken in each field and at least three courses taken at the 400-level)

Institutions and Processes
POSC 363 International Law and Organization
POSC 380 Introduction to Law
POSC 404 Judicial Process
POSC 405 Constitutional Law
POSC 407 American Presidency
POSC 423 Congress and Public Policy

Issues and Politics
POSC 387 American Political Thought
POSC 401 Topics in Constitutional Law*
POSC 402 Civil Liberties: Individual Freedoms
POSC 403 Civil Liberties: Equal Protection Clause
POSC 434 Political Thought I
POSC 435 Political Thought II
POSC 445 Human Rights and World Politics

Three (3) credit hours of either POSC 464 or POSC 468 may count once towards completion of the above fields (Institutions and Processes or Issues and Politics).

POSC 464 Internship in Political Science
or
POSC 468 Undergraduate Research
*May be taken twice when topics differ

ELECTIVES
After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF 124

BACHELOR OF ARTS - POLITICAL SCIENCE EDUCATION

University and College requirements.

MAJOR REQUIREMENTS
POSC 150 American Political System 3
POSC 240 Introduction to International Relations 3
POSC 300 Data Analysis for Political Science 3

One of the following courses: 3
POSC 220 Introduction to Public Policy
POSC 270 Comparative Politics
POSC 285 Introduction to Political Theory

Eighteen credits distributed as follows: 18
- nine credits from POSC courses at the 400-level
- nine credits from POSC courses at the 300- or 400-level

Within these eighteen credits, the courses must represent four of the four fields listed below: (Detailed list of courses available from department office.)

American Government and Politics
Comparative Government and Politics
International Relations
Political Theory

ECON 151 Introduction to Microeconomics 3
ECON 152 Introduction to Macroeconomics 3
One additional ECON course 3

GEOG 120 World Regional Geography 3
Two additional GEOG courses 6

HIST 104 World History II 3
HIST 206 U.S. History 1865 to Present 3
HIST 491 Planning a Course of Instruction 3
HIST 492 Integrating Instructional Technology into Social Studies Teaching 1
HIST 493 Seminar: Problems in Teaching History and Social Sciences 3
One additional HIST course 3
EDUC 400 Student Teaching 9
EDUC 413 Adolescent Development and Educational Psychology 4
EDUC 414 Teaching Exceptional Adolescents 3
EDUC 419 Diversity in Secondary Education 3
EDUC 420 Reading in the Content Areas 1

A grade of C- or better is required in all required EDUC, ECON, GEOG, HIST, and POSC courses.

To be eligible to student teach, Political Science Education students must have a GPA of 3.0 in their major and an overall GPA of 2.75. Students must also pass a teacher competency test as established by the University Council on Teacher Education. Students should consult the teacher education program coordinator to obtain the student teaching application and other information concerning student teaching policies.

CREDITS TO TOTAL A MINIMUM OF 124
The following courses taken abroad count toward the French, German, or Spanish/Political Science major:
French
FREN 306 or FREN 406
FREN 308
FREN 355 or FREN 455
HIST 339
German
GRMN 306 or GRMN 406
GRMN 308
GRMN 355 or GRMN 455
HIST 339
Spanish
SPAN 306 or SPAN 406
SPAN 308
SPAN 355 or SPAN 455
HIST 339

ELECTIVES
After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF 124

Admission and Financial Aid. The departments of Political Science and International Relations and Foreign Languages and Literatures will jointly make decisions regarding admission of students to the program and recommendations for financial aid.

HONORS BACHELOR OF ARTS - FRENCH, GERMAN, OR SPANISH/POLITICAL SCIENCE

Students wishing to complete an Honors BA in French, German, or Spanish/Political Science must:

Complete all requirements of the BA in French, German, or Spanish/Political Science.
Complete all the University's generic requirements for the Honors Degree.
At least 6 Honors credits in the major must be at the 300 or 400 level.

MINOR IN POLITICAL SCIENCE

The required 15 credits for a minor in Political Science are as follows:
POSC 150 American Political System 3
POSC 240 Introduction to International Relations 3
POSC 270 Comparative Politics 3
POSC 310 European Governments 3
POSC 441 Topics in Western European Politics by Country 3
or
POSC 442 Topics in Western European Politics

One additional POSC course at the 200-level or

HONORS BACHELOR OF ARTS - POLITICAL SCIENCE OR POLITICAL SCIENCE EDUCATION

A candidate for the Honors Bachelor of Arts in Political Science or Political Science Education must:

Fulfill all requirements for the BA in Political Science or Political Science Education.
Fulfill all the University’s generic requirements for the Honors Degree.
At least 6 Honors credits in the major must be at the 300 or 400 level.

BACHELOR OF ARTS - FRENCH, GERMAN, OR SPANISH/POLITICAL SCIENCE

University and College requirements.

MAJOR REQUIREMENTS
French, German, or Spanish/Political Science majors must complete all designated courses and any prerequisite courses (e.g., for admission to the 200-level language courses) with no grade below a C-.

POSC 150 The American Political System 3
or
POSC 441 Topics in Western European Politics by Country 3

or

POSC 442 Topics in Western European Politics

3 additional courses at the 300 or 400-level with at least 2 at the 400-level and at least 2 in the area of International Relations 9

One of the following language options:
French
FREN 2xx, 3xx, 4xx (prior to semester abroad) 6
FREN 3xx, 4xx 12
FREN 4xx (literature) (Newark campus only) 3
German
GRMN 2xx, 3xx, 4xx (prior to semester abroad; GRMN 255 recommended) 6
GRMN 3xx, 4xx 12
GRMN 4xx (literature) (Newark campus only) 3
Spanish
SPAN 2xx, 3xx, 4xx (prior to semester abroad) 6
SPAN 3xx, 4xx 12
SPAN 4xx (literature) (Newark campus only) 3

The required 15 credits for a minor in Political Science are as follows:
POSC 150 American Political System 3
One additional POSC course at the 200-level or
International Relations

International Relations (IR) is an interdisciplinary major in the College of Arts and Sciences with core (24 credits), concentration (18 credits), and regional specialization (9 credits) requirements. Students must choose one of four concentrations and one of five regional specializations, as detailed in the curriculum below. An honors degree option is available.

Area Studies Programs: International Relations majors should give serious consideration to adding one of the university's Area Studies programs: African Studies, European Studies, East Asian Studies, Islamic Studies, and Latin American Studies. Course work in these area studies programs will allow students to develop much richer and deeper knowledge of these regions. Moreover, most of the courses approved for the Regional Specialization within the International Relations major are also approved as fulfilling the Area Studies requirements thereby facilitating a minor or double major with an area studies program.

Study Abroad, Internships, and Undergraduate Research: International Relations majors are strongly encouraged to consider a study abroad experience as a part of their program. Students participating in study abroad programs not only enrich their education through exposure to foreign cultures, but often have the opportunity to take courses, internships, and undertake other educational experiences abroad not otherwise offered in University of Delaware course lists. In many instances, these courses may count towards IR Concentration and Regional Specialization requirements. Similarly, internships and undergraduate research experiences offered from the Newark campus may be applied to IR Concentration and Regional Specialization requirements. Students should check with the Director of Undergraduate Studies when enrolling in study abroad courses and programs, internships, and undergraduate research programs to determine if the specific course, program, or educational experience meets a particular IR major requirement, or, if some major requirement might be waived by means of study abroad, internships, or undergraduate research programs. A maximum of three credit hours of either POSC 464 (internship) or POSC 468 (undergraduate research) may count once towards either the concentration or regional specialization depending on content and with approval of POSC Director of Undergraduate Studies.

Transfer Students: Students wishing to change their major to international relations must have a minimum cumulative grade point average of 2.0.

CONCENTRATIONS
Students must choose one of four IR concentrations: (1) Development, (2) Diplomacy and World Order, (3) International Political Economy, or (4) U.S. Foreign Policy. Concentrations require 18 hours of course work. Each concentration has a required POSC course and ECON 340 (or ECON 311 for the
Development Concentration). Students must take at least three approved Political Science and International Relations courses. One 3 credit course from IR concentration course lists other than the student's IR concentration may be used to fulfill a student's chosen concentration. At least three courses must be taken at the 400 level in each concentration. Courses used to meet concentration requirements cannot be used to fulfill Specialization requirements.

Development Concentration
Required:
- POSC 311 Politics of Developing Nations 3
- ECON 311 Economics of Developing Countries 3

At least two (6 credits) from:
- POSC 315 Third World Women in Politics 3
- POSC 316 International Political Economy 3
- POSC 362 Diplomacy 3
- POSC 408 International Organization 3
- POSC 410 Islam in Global Affairs 3
- POSC 414 Topics in American Foreign Policy 3
- POSC 444 Global Agenda 3
- POSC 445 Human Rights and World Politics 3
- POSC 446 International Human Rights on Film 3
- POSC 448 Theories of International Relations 3
- POSC 463 The United Nations & World Affairs 3
- POSC 475 Model UN 3

Other courses approved to fulfill the 18 credit minimum in addition to courses listed above 0-6
- ANTH 222 Technology and Culture
- ANTH 225 Peasant Societies
- ANTH 230 Peoples of the World
- ANTH 330 Development and Underdevelopment
- ANTH 370 Culture/Food Production and Economic Development
- ANTH 401 The Idea of Race
- ECON 340 International Economics
- ECON 341 Environment of Multinational Corporations
- ECON 345 Economies in Transition
- ECON 411 Economic Theory of Developing Countries
- ECON 441 International Trade
- ECON 443 International Monetary Economics
- FREC 410 International Agricultural Trade and Marketing
- FREC 420 Agriculture in Economic Development
- GEOG 210 Economic Geography
- GEOG 236 Conservation: Global Issues
- GEOG 422 Resources, Development, and the Environment
- HIST 381 Islam and the West: The History of Mutual Perceptions
- HIST 395 Pan Africanism
- PHIL 204 World Religions
- SOCI 328 Work in Global Economy
- SOCI 331 World Population: Profiles and Trends
- SOCI 360 Sociology of Religion
- SOCI 361 Racial Inequality
- WOMS 363 Women In Cultural Cross-Perspectives

Diplomacy and World Order Concentration
Required:
- POSC 362 Diplomacy 3
- ECON 340 International Economics 3

At least two (6 credits) from:
- POSC 313 American Foreign Policy
- POSC 316 International Political Economy
- POSC 330 Political Terrorism
- POSC 333 Contemporary Political Ideologies
- POSC 363 International Law and Organization
- POSC 408 International Organization
- POSC 409 Contemporary Problems of World Politics
- POSC 410 Islam in Global Affairs
- POSC 414 Topics in American Foreign Policy
- POSC 415 Force and World Politics
- POSC 416 International Relations History
- POSC 430 The Intermestic Relations of Islam and America
- POSC 444 Global Agenda
- POSC 445 Human Rights and World Politics
- POSC 446 International Human Rights/Film
- POSC 448 Theories of International Relations
- POSC 463 The United Nations & World Affairs
- POSC 475 Model UN

Other courses approved to fulfill the 18 credit concentration minimum in addition to courses listed above 0-6
- ANTH 222 Technology and Culture
- ANTH 230 Peoples of the World
- ANTH 401 The Idea of Race
- ECON 331 Economics of Developing Countries
- ECON 341 Environment of Multinational Corporations
- ECON 344 The Making of the European Economy
- ECON 345 Economies In Transition
- ECON 441 International Trade
- ECON 443 International Monetary Economics
- FREC 410 International Agricultural Trade and Marketing
- FREC 420 Agriculture in Economic Development
- GEOG 102 Human Geography
- GEOG 203 Introduction to Cultural Geography
- GEOG 210 Economic Geography
- GEOG 236 Conservation: Global Issues
- GEOG 422 Resources Development and the
<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 438</td>
<td>World Cities in Comparative Perspective</td>
<td>3</td>
</tr>
<tr>
<td>HIST 210</td>
<td>Introduction to Military History</td>
<td>3</td>
</tr>
<tr>
<td>HIST 254</td>
<td>Jewish Holocaust 1933-1945</td>
<td>3</td>
</tr>
<tr>
<td>HIST 302</td>
<td>The World in Our Time</td>
<td>3</td>
</tr>
<tr>
<td>HIST 306</td>
<td>History of American Foreign Policy</td>
<td>3</td>
</tr>
<tr>
<td>HIST 351</td>
<td>Europe in Crisis 1919-1945</td>
<td>3</td>
</tr>
<tr>
<td>HIST 381</td>
<td>Islam and the West: The History of Mutual Perceptions</td>
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<td>PHIL 204</td>
<td>World Religions</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 328</td>
<td>Work in a Global Economy</td>
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</tr>
<tr>
<td>SOCI 331</td>
<td>World Population: Profiles and Trends</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 360</td>
<td>Sociology of Religion</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 361</td>
<td>Racial Inequality</td>
<td>3</td>
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</tbody>
</table>

**International Political Economy Concentration**

**Required:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</tr>
</thead>
<tbody>
<tr>
<td>POSC 316</td>
<td>International Political Economy</td>
<td>3</td>
</tr>
<tr>
<td>ECON 340</td>
<td>International Economics</td>
<td>3</td>
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At least two (6 credits) from:

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<tr>
<th>Course Code</th>
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</tr>
</thead>
<tbody>
<tr>
<td>POSC 333</td>
<td>Contemporary Political Ideologies</td>
<td>3</td>
</tr>
<tr>
<td>POSC 362</td>
<td>Diplomacy</td>
<td>3</td>
</tr>
<tr>
<td>POSC 409</td>
<td>Contemporary Problems of World Politics</td>
<td>3</td>
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<tr>
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<td>Global Agenda</td>
<td>3</td>
</tr>
<tr>
<td>POSC 448</td>
<td>Theories of International Relations</td>
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</tr>
</tbody>
</table>

Other courses approved to fulfill the 18 credit concentration minimum in addition to courses listed above (6 credits):

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<td>U.S. Foreign Policy Concentration Required:</td>
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<td>American Foreign Policy</td>
<td>3</td>
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<td>POSC 330</td>
<td>Political Terrorism</td>
<td>3</td>
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<td>POSC 333</td>
<td>Contemporary Political Ideologies</td>
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<td>Human Rights and World Politics</td>
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<td>International Human Rights on Film</td>
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<tr>
<td>POSC 448</td>
<td>Theories of International Relations</td>
<td>3</td>
</tr>
<tr>
<td>POSC 463</td>
<td>The United Nations &amp; World Affairs</td>
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</table>
HIST 381  Islam and the West: The History of Mutual Perceptions
HIST 483  Seminar in Comparative History
PHIL 204  World Religions
SOCI 331  World Population: Profiles and Trends
SOCI 361  Racial Inequality

REGIONAL SPECIALIZATIONS
Students must choose one of five regional specializations: (1) Africa, (2) Asia, (3) Europe, (4) Latin America, (5) Middle East. Specializations require 9 hours of course work. At least one course must be at the 400-level in each specialization.

African Specialization
Three courses from the following, with at least one course in Political Science, and at least 3 credits at the 400 level
9
POSC 270  Comparative Politics
POSC 311  Politics of Developing Nations
POSC 315  Third World Women in Politics
POSC 433  African Politics
POSC 439  Topics in African Politics
ANTH 225  Peasant Societies
ANTH 326  Anthropology of African Diaspora
ANTH 330  Development and Underdevelopment
ANTH 333  Peoples of Africa
ECON 311  Economics of Developing Countries
HIST 134  History of Africa
HIST 330  Peasants and Revolution in Africa
HIST 381  Islam and the West: The History of Mutual Perceptions
HIST 394  Africa Since 1960
HIST 395  Pan Africanism
HIST 397  History of South Africa
HIST 439  Women and Revolution in Africa
HIST 440  Seminar in Africa Under Colonial Rule
HIST 475  Seminar: The End of the French Empire

Asian Specialization
Three courses from the following, with at least one course in Political Science, and at least 3 credits at the 400 level
9
POSC 270  Comparative Politics
POSC 311  Politics of Developing Nations
POSC 312  East Asian Political Systems
POSC 315  Third World Women in Politics
POSC 427  Politics in China
POSC 429  Southeast Asia and the World
POSC 443  China and the World
ANTH 210  Peoples and Cultures of Southeast Asia
ANTH 211  Peoples and Cultures of East Asia
ANTH 225  Peasant Societies

ANTH 310  Asian Women's Lives
ANTH 312  Asian Women in the Globalized Workplace
ANTH 330  Development and Underdevelopment
ECON 305  Comparative Economic Systems
ECON 311  Economics of Developing Countries
ECON 341  Environment of Multinational Corporations
ECON 345  Economies in Transition
ECON 411  Economic Theory of Developing Countries
HIST 137  East Asian Civilization: China
HIST 138  East Asian Civilization: Japan
HIST 270  History of Modern Asia
HIST 365  Topics in East Asian History
HIST 368  History of China 1600-1920
HIST 369  China Since 1900
HIST 370  History of Modern Japan
HIST 371  Postwar Japan
HIST 372  Japan's Global Pop Culture
HIST 381  Islam and the West: The History of Mutual Perceptions
HIST 393  History of Modern Vietnam
HIST 479  Seminar in Asian History
PHIL 309  Indian Religion and Philosophy
PHIL 310  Chinese Religion and Philosophy

European Specialization
Three courses from the following, with at least one course in Political Science, and at least 3 credits at the 400 level
9
POSC 270  Comparative Politics
POSC 310  European Government
POSC 339  Britain and Europe
POSC 372  East Central European Politics
POSC 412  Foreign Policy of Post-Soviet Union
POSC 432  Political System Post-Soviet Union
POSC 441  Topics in Western European Politics: Countries
POSC 442  Topics in Western European Politics
ANTH 225  Peasant Societies
ANTH 325  Peoples of Europe
ECON 341  Environment of Multinational Corporations
ECON 344  The Making of the European Economy
ECON 444  Analysis of European Economic Performance
HIST 254  The Jewish Holocaust, 1933-1945
HIST 339  Topics in Modern European History
HIST 348  History of Spain: 1479-Present
HIST 351  Europe in Crisis: 1919-1945
HIST 352  Contemporary European Society
HIST 353  Modern Germany: 1770-1919
HIST 354  Germany in the Twentieth Century 1914 - Present
HIST 357  The European City
HIST 359  Soviet Russia: 1917-1990
HIST 373  Modern Ireland: 1660 to Present
HIST 374  History of England to 1715
HIST 375  Britain Since 1714
HIST 474  Seminar in English History
HIST 475  Seminar in Modern European History
SPAN 308  Contemporary Spain II
GRMN 308  Contemporary Germany II
ITAL 308  Contemporary Italy II
FREN 308  Contemporary France II

Latin American Specialization
Three courses from the following, with at least one course in Political Science, and at least 3 credits at the 400 level  9
POSC 270  Comparative Politics
POSC 311  Politics of Developing Nations
POSC 315  Third world Women in Politics
POSC 426  Latin American Political System
POSC 450  Topics in Latin American Politics
ANTH 225  Peasant Societies
ANTH 330  Development and Underdevelopment
ANTH 351  Race in Latin America
ANTH 375  Peoples Cultures of Modern Latin America
ANTH 380  Peoples Cultures of Mexico and Central America
ECON 311  Economics of Developing Countries
ECON 341  Environment of Multinational Corporations
ECON 411  Economic Theory of Developing Countries
GEOG 226  Geography of Latin America
HIST 135  Introduction to Latin American History
HIST 331  History of Caribbean I
HIST 332  History of Caribbean II
HIST 336  Topics in Latin American History
HIST 349  Hispanic Societies: 1800-Present
HIST 430  Seminar in 20th Century Latin American Revolutions
HIST 477  Seminar in Latin American History
SOCI 319  Sociology of Latin America
SPAN 307  Contemporary Latin America II

Middle East Specialization
Three courses from the following, with at least one course in Political Science, and at least 3 credits at the 400 level  9
POSC 270  Comparative Politics
POSC 311  Politics of Developing Nations
POSC 315  Third World Women in Politics
POSC 377  Arab-Israeli Politics
POSC 410  Islam in Global Affairs
POSC 430  The Intermestic Relations of Islam and America
ANTH 212  Peoples and Cultures of the Muslim World
ANTH 261  Peoples and Cultures of the Middle East
ANTH 314  Immigrant Islam: The Muslim Diaspora in the West
ANTH 316  Islam and Gender
ANTH 330  Development and Underdevelopment
ECON 311  Economics of Developing Countries
ECON 341  Environment of Multinational Corporations
HIST 131  Islamic Near East: 1500 to Present
HIST 377  Radicalism and Revolution: Islamic Movement/Modern Middle East
HIST 378  Nationalism in Modern Middle East
HIST 380  History of the Arab-Israeli Conflict
HIST 381  Islam and the West: The History of Mutual Perceptions
HIST 444  Seminar: Women in Islamic Middle East

ELECTIVES
After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF 124

HONORS BACHELOR OF ARTS - INTERNATIONAL RELATIONS

A candidate for the Honors Bachelor of Arts in International Relations must:
1. Fulfill all requirements for the BA in International Relations.
2. Fulfill all the University’s generic requirements for the Honors Degree.

The Honors credits in the major shall come from at least two different departments represented in the International Relations curriculum.

Minor in Political Communication
The Department of Communication and Political Science and International Relations offers a minor in Political Communication. This minor provides University of Delaware undergraduates with the opportunity to experience multidisciplinary teaching and research in the leading edge concepts of political communication and digital technology, as expressed and experienced in political campaigns and public policy debates at the local and national levels. In particular, the minor allows Communication and Political Science majors to specialize in Political Communication as well as make the field accessible to students from other majors. The minor will encourage University of Delaware students to become leaders in this rapidly developing field.
The required 18 credits for the minor in Political Communication are as follows:

- **COMM 340** Politics and the Media or **POSC 340** Politics and the Media

One of the following (Political Science Component):
- **POSC 320** Parties and Interest Groups
- **POSC 407** American Presidency
- **POSC 413** Topics in American Government
- **POSC 423** Congress and Public Policy

One of the following (Communication Component):
- **COMM 305** Topics in Communication and Politics
- **COMM 306** Digital Technology and Politics
- **COMM 309** Introduction to Public Relations
- **COMM 313** Communication Principles in Advertising
- **COMM 319** Topics in Politics and Broadcast Journalism
- **POSC 319** Topics in Politics and Broadcast Journalism

Two of the following (Advance Component):
- **COMM 413** Public Relations Management
- **COMM 418** Topics in Mass Communication (relevant topics taught under this number will be counted toward the minor)
- **COMM 452** Communication and Persuasion
- **COMM 425** Advanced Topics in Politics and Broadcast Journalism
- **POSC 425** Advanced Topics in Politics and Broadcast Journalism
- **POSC 318** Public Opinion, Politics and Society
- **POSC 324** Voting and Elections
- **POSC 421** Political Psychology
- **POSC 440** Comparative Public Opinion

One of the following (Experiential Component):
- **COMM 364** Internship
- **COMM 468** Undergraduate Research in Communication
- **POSC 464** Internship in Political Science
- **POSC 468** Undergraduate Research in Political Science
- **POSC 444** Global Agenda
- **COMM 444** Global Agenda

Note: Students must complete 28 credits before declaring the Political Communication minor. Only three courses or 9 credits may be in a student’s major or crosslisted with a student’s major. Students who double major in Political Science and Communication are not eligible for the Political Communication minor.

**Psychology**

Telephone: (302) 831-2271
http://www.psych.udel.edu
Faculty Listing: http://www.psych.udel.edu/people/index.asp

The department of Psychology offers a BA degree with a major in Psychology, a BS degree with a major in Psychology, a BA degree with a major in Psychology Education, a BS degree with a major in Neuroscience and a minor in Psychology.

Psychology is a biological, behavioral, social, and applied science, whose theories are integral to an understanding of ourselves and our place in the world. Students first learn the fundamentals of biology and psychology and then concentrate on courses that examine the relations of the nervous system and of cognitive and social processes to behavior. Detailed instructions regarding an interdepartmental major are available from the Dean’s Office.

The courses offered by the Department of Psychology provide students with an understanding of the principles of behavior, of the scientific methods used to derive and add to those principles, and of appropriate ways in which to apply such knowledge. Experimental psychology seeks to isolate in the laboratory the basic processes involved in neural systems, learning, perception, social behavior, personality development, thinking, etc. Applied psychology focuses on methods used to approach problems in settings such as industry, government, and the general community, as well as in the field of mental health. The many aspects of theoretical, experimental and applied psychology are represented in the introductory and 300-level courses, and more advanced courses enable students to pursue special interests in greater depth. Laboratory experiences include the study of cognitive, learning, perceptual, physiological, developmental and social processes, and the investigation of clinically interesting phenomena. Facilities are also available, both on campus and...
at nearby institutions, for computer modeling of psychological processes and for data analysis.

**BACHELOR OF ARTS - PSYCHOLOGY**

University and College requirements.

**MAJOR REQUIREMENTS**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>PSYC 100</td>
<td>General Psychology</td>
<td>3</td>
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<tr>
<td>PSYC 207</td>
<td>Research Methods</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 209</td>
<td>Measurement and Statistics</td>
<td>3</td>
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<tr>
<td>PSYC 312</td>
<td>Learning and Motivation</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 314</td>
<td>Brain and Behavior</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 320</td>
<td>Introduction to Neuroscience</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 310</td>
<td>Sensation and Perception</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 340</td>
<td>Cognition</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 344</td>
<td>Psychology of Language</td>
<td>3</td>
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<tr>
<td>PSYC 350</td>
<td>Developmental Psychology</td>
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<tr>
<td>PSYC 380</td>
<td>Psychopathology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 370</td>
<td>Research in Personality</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 390</td>
<td>Social Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 394</td>
<td>Cultural Psychology</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Two courses at or above the 400-level (except PSYC 466 or PSYC 468)</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Three credits of any Psychology course (except PSYC 301, PSYC 303, PSYC 325 and PSYC 334)</td>
<td>3</td>
</tr>
</tbody>
</table>

A grade of C- or better is required in all PSYC major-related courses.

**ELECTIVES**

After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

**CREDITS TO TOTAL A MINIMUM OF** 124

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**BACHELOR OF ARTS - PSYCHOLOGY EDUCATION**

University and College requirements.

**MAJOR REQUIREMENTS**

<table>
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<tr>
<th>Course</th>
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<td></td>
<td>Three credits of any Psychology course (except PSYC 301, PSYC 303, PSYC 325 and PSYC 334)</td>
<td>3</td>
</tr>
</tbody>
</table>

Twenty-four credits in the social sciences with at least three credits in each of the following departments: 24

- Anthropology
- Economics
- Geography
- History
- Political Science
- Sociology

Six additional credits selected from the social science departments listed above 6

**EDUC 413** Adolescent Development and Educational Psychology 4
BACHELOR OF SCIENCE - PSYCHOLOGY

EDUC 414 Teaching Exceptional Adolescents 3
EDUC 419 Diversity in Secondary Education 3
HIST 491 Planning a Course of Instruction 3
HIST 493 Seminar: Problems in Teaching History and Social Sciences 3
EDUC 420 Reading in the Content Areas 1
EDUC 400 Student Teaching 9

A grade of C- or better is required in all required PSYC, EDUC, HIST, and major related courses.

To be eligible to student teach, Psychology Education students must have a GPA of 3.0 in their major and an overall GPA of 2.75. Students must also pass a teacher competency test as established by the University Council on Teacher Education. Students should consult the teacher education program coordinator to obtain the student teaching application and other information concerning student teaching policies.

ELECTIVES
After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF 124

BACHELOR OF SCIENCE - PSYCHOLOGY

ENGL 110 Critical Reading and Writing (minimum grade C-) 3
First Year Experience (FYE) 0-4

University Breadth Requirement
Up to 3 credits from each of the University Breadth Requirement categories may be used to simultaneously satisfy the College of Arts and Sciences Breadth Requirements. 12

Discovery Learning Experience (DLE) 3
Multi-cultural Courses 3

COLLEGE REQUIREMENTS:
Foreign Language 0-12
Breadth Requirements 18
(Minimum of 6 credits each in Groups A, B, and C)
Up to 3 credits from each of the University Breadth Requirement categories may be used to simultaneously satisfy the College of Arts and Sciences Breadth Requirements. 12

SECOND WRITING REQUIREMENT 3

SCIENCE CORE:

Biological Sciences 11
Take these 3 courses:
BISC 207 Introductory Biology I 4
BISC 208 Introductory Biology II 4
BISC 306 General Physiology 3
BISC 207 will be taken in the Spring semester and 208 in the Fall semester, as per agreement with the Biology Dept.

Chemistry and Physics 8
Take 2 courses in sequence:
CHEM 103/CHEM 104 General Chemistry 8
or
PHYS 201/PHYS 202 Introductory Physics I/II 8
Mathematics 3-4
MATH 221 Calculus 3
or
MATH 241 Analytic Geometry and Calculus A 4
Computer Science 3
CISC 108 Introduction to Computer Science I 3

MAJOR REQUIREMENTS:
PSYC 100 General Psychology 3
PSYC 207 Research Methods 3
PSYC 209 Measurement and Statistics 3
One of the following four courses: 3
PSYC 312 Learning and Motivation
PSYC 314 Brain and Behavior
PSYC 320 Introduction to Neuroscience

One of the following three courses: 3
PSYC 310 Sensation and Perception
PSYC 340 Cognition
PSYC 344 Psychology of Language

One of the following two courses: 3
PSYC 350 Developmental Psychology
PSYC 380 Psychopathology

One of the following two courses: 3
PSYC 370 Research in Personality
PSYC 390 Social Psychology
PSYC 394 Cultural Psychology

Three courses at the 400-level or the 600-level: 9

Two courses of supervised research: 6
PSYC 468 Research
or
UNIV 401/UNIV 402 Thesis

A grade of C- or better is required in all BISC, CHEM, PHY, MATH, CISC, and PSYC courses.
REQUIRED COURSES IN NEUROSCIENCE

**NSCI 320** Introduction to Neuroscience 3

Plus One of the following:
- **NSCI 626** Advanced Neuroanatomy 3
- **NSCI 627** Advanced Neurophysiology 3
- **NSCI 628** Advanced Neuropharmacology 3

Plus One of the following:
- **NSCI 629** Integrative Neuroscience I 3
- **NSCI 630** Integrative Neuroscience II 3
- **NSCI 631** Current Topics in Neuroscience 3

**BISC 439/BISC 639** Development Neurobiology 3

**TOTAL CREDITS** 9

REQUIRED COURSES IN RELATED SCIENCE

**PHYS 201/PHYS 202** General Physics I & II 8
**CHEM 103/CHEM 104** General Chemistry I & II 8

**TOTAL CREDITS** 16

**TOTAL CREDITS IN MAJOR** 54

Note: Students wishing to satisfy the pre-med requirements should consult those requirements in choosing options and in choosing additional courses in related sciences and general education courses.

Course Prerequisites
**PSYC 300-level and above**
- **PSYC 100, PSYC 209**
**PSYC 600-level and above**
- **NSCI 320**

**BISC 300-level and above**
- **BISC 207, BISC 208 +1 year of chemistry**

**BISC 600-level and above**
- **BISC 207, BISC 208 +2 year of chemistry**

HONORS BACHELOR OF SCIENCE: NEUROSCIENCE

The recipient must complete:
1. All requirements for the Bachelor of Science degree with a major in Neuroscience.
2. All the University’s generic requirements for the Honors Degree.
Religious Studies

3. Twelve credits of honors courses in Neuroscience, including required collateral courses in other departments. At least six credits must be at the 300 level or higher.

NEUROSCIENCE: A 4+1 BACHELOR + MASTER OF SCIENCE IN NEUROSCIENCE
Telephone: (302) 831-2271
Website: http://www.psych.udel.edu/advisement/index.php/degree-requirements/bachelor-of-science-in-neuroscience-requirements/
Faculty Listing: http://www.psych.udel.edu/index.php/people/list/category/faculty/

The Department of Psychology offers a special 4+1 Bachelor + Master of Science in Neuroscience to highly qualified undergraduate students who are extant Neuroscience majors at the University of Delaware. This program allows exceptional students to accelerate their undergraduate studies in Neuroscience to also earn a Master’s Degree in Neuroscience (30 graduate credits) in 5 years of full-time study at the University of Delaware, with a savings of about 50% in expenses and time required for a traditional Master of Science Degree. Students would normally apply for conditional acceptance in the second semester of their junior year (with a GPA > 3.25, two letters of recommendation, and having identified a faculty research mentor). Thereafter, the student will: a) be mentored into an accelerated undergraduate neuroscience curriculum that includes a senior-year research project, b) satisfy their senior-year evaluation of “good standing” and make formal application to the Graduate School, then c) complete a graduate summer research internship (6 credits) and thesis proposal, d) complete a fifth-year curriculum of graduate studies in neuroscience, and e) submit their Master’s Thesis research and defend it orally.

HONORS BACHELOR OF ARTS - PSYCHOLOGY OR PSYCHOLOGY EDUCATION

The recipient must complete:
All requirements for the Bachelor of Arts or Science in Psychology or in Psychology Education.
All the University’s generic requirements for the Honors Degree.
Twelve credits of honors courses in Psychology. At least six credits must be at the 300 level or higher.

HONORS BACHELOR OF SCIENCE PSYCHOLOGY

The recipient must complete:
1. All requirements for the Bachelor of Science degree with a major in Psychology.
2. All the University's generic requirements for the Honors Degree.
3. Twelve credits of honors courses in Psychology. At least six credits must be at the 300 level or higher.

MINOR IN PSYCHOLOGY

A minor in psychology requires 18 credits including PSYC 100; PSYC 207; PSYC 209; one course chosen from PSYC 310, PSYC 312, PSYC 314, PSYC 320, PSYC 340, or PSYC 344; one course chosen from PSYC 350, PSYC 370, PSYC 380, PSYC 390, or PSYC 394; and any three credits in psychology (with the following restrictions: except PSYC 301, PSYC 303, PSYC 325, and PSYC 334).

Religious Studies
Telephone: (302) 831-8077
E-mail: AFOX@udel.edu
http://www.udel.edu/Philosophy/RelStud/

The Religious Studies undergraduate minor is described as “interdisciplinary” because it involves work in three or more different departments. The general requirements include 15 credits from a list of approved courses. These must include PHIL 204 (World Religions) and at least two courses at the 300-level or higher in any of the three departments listed. For enrollment forms, course substitutions or exemptions, or a list of the approved courses, contact Professor Alan Fox, Department of Philosophy.

School of Public Policy and Administration
(Majors/minors: Organizational and Community Leadership and Public Policy)

School of Public Policy and Administration
Telephone: (302) 831-1687
www.sppa.udel.edu/
www.sppa.udel.edu/faculty/facultylist.htm

The School of Public Policy and Administration (SPPA) offers two undergraduate degrees - a Bachelor of Science in Organizational and Community Leadership and a Bachelor of Arts in Public Policy. SPPA also offers two minors - a minor in Organizational and Community Leadership and a minor in Public Policy.
BACHELOR OF SCIENCE - ORGANIZATIONAL AND COMMUNITY LEADERSHIP

Organizational and Community Leadership majors are prepared to accept the challenge of leadership in an increasingly complex, global, and fast-paced world. Their knowledge and skills enable them to enter and succeed in a wide variety of careers.

Organizational and Community Leadership prepares students, through coursework, experiences and discovery learning, to mobilize people for ethical, socially responsible, and sustainable change that improves the quality of our lives and environments. Organizational and Community Leadership majors gain knowledge of: social, economic, political and technological factors that impact problems and paths of solutions; organizational and personal behaviors; and the complexities of, and the necessity for, collaborations among public, private and non-profit organizations. Organizational and Community Leadership students also make great strides in their own personal and professional development by gaining competencies in effective communication, decision-making, problem recognition, and strategic problem-solving. They acquire the ability to develop, communicate and implement visions and strategies that mobilize organizations and followers for change.

With careful planning and advisement, Organizational and Community Leadership majors have the opportunity to earn a Bachelor of Science degree and a Master of Public Administration (MPA) degree in less than the usual six years. An Honors Degree option is available. Additional information is available from the program office. Students who wish to change from another major in the University are advised to contact the program office regarding policies and procedures.

BREADTH REQUIREMENTS

The following courses have been approved to fulfill science electives for students in the Organizational and Community Leadership major.

Sciences

UNIVERSITY REQUIREMENTS

ENGL 110 Critical Reading and Writing (minimum grade C-) 3
First Year Experience (FYE) 1
University Breadth Requirement (minimum grade C-) 12
Discovery Learning Experience (DLE) 6
Multi-cultural Course 3

MAJOR REQUIREMENTS

Second Writing Course: Three credits chosen from courses designated in the Registration Booklet as satisfying the Arts and Sciences Second Writing Course requirement. This requirement may be fulfilled through a course taken to complete other course requirements. 3

COMM 212 Oral Communications in Business 3

PHIL 200 or PHIL 202 Business Ethics or Contemporary Moral Problems 3

PHIL 105 or PHIL 207 Critical or Scientific Reasoning 3
Modern Foreign Language course 3
Communication course 3

Physical or Biological Science Elective 3
Math Course 3

Only three credits from any combination of MATH 114 and MATH 115 can count toward graduation. 3

MATH 201 Introduction to Statistics I 3
MATH 202 Introduction to Statistics II 3

ANTH 101 Introduction to Social and Cultural Anthropology 3
Sociology course 3
Political Science course 3

ACCT 200, ACCT 207 or FINC 200 3
ACCT 352 Law and Social Issues in Business 3
BUAD 301 Introduction to Marketing 3
ECON 151 Introduction to Microeconomics: Prices and Markets 3
ECON 152 Introduction to Microeconomics: National Economy 3

LEAD 100 Leadership, Integrity and Change 3
LEAD 101 Global Contexts for Leadership 3
LEAD 110 Perspectives on Leadership 1
LEAD 200 The Leadership Challenge 3
LEAD 209 Presentation Strategies 3
LEAD 300 Leadership, Innovation and Creativity 3
LEAD 341 Decision-Making and Leadership 3
LEAD 400 Leadership for the Common Good 3
LEAD 404 Leadership in Organizations 3
LEAD 411 Topics in Leadership Dynamics 3
LEAD 490 Senior Capstone 3

A grade of C- or better is required in all LEAD courses.

AREA OF INTEREST REQUIREMENT 12

Students will also complete 12 credits drawn from a list of eligible courses in one area of interest or 6 credits drawn from a list of eligible courses in each of two areas of interest. The areas of interest and eligible courses will be updated and posted annually on the Organizational Leadership program website. Substitute courses may be proposed by the student with the approval of the faculty advisor. With the approval of their faculty advisor, students may fulfill the area of interest requirement by completing a minor outside of the Organizational Leadership program (examples of appropriate minors: resource economics, political science, legal studies, business administration, entrepreneurial studies, and international business).

Environmental Sustainability
GEOG 230 Humans and the Earth Ecosystem
GEOG 240 Environmental and Behaviour
LEAD 451 Leadership for Sustainability
ECON 343 Environmental Economics
FREC 444 Economics of Environmental Management
UAPP 626 Conservation and Renewable Energy Policy

Global Perspectives
GEOG 210 Economic Geography
GEOG 236 Conservation: Global Issues
ANTH 312 Asian Women in the Globalized Workspace
SOCI 328 Work in a Global Economy

Intercultural Dynamics
HDFS 230 Families and Their Communities
HDFS 333 Development of Human Relationships
GEOG 203 Introduction to Cultural Geography
GEOG 310 Social Geography
SOCI 328 Work in a Global Economy
ANTH 382 Anthropology and Business
COMM 263 Intercultural Dynamics
HRIM 316 Cross Cultural Etiquette and protocol

Limit of one location specific course - examples:
ANTH 210 People and Cultures of southeast Asia
ANTH 211 People and Cultures of East Asia
ANTH 212 People and Cultures of Muslim World
ANTH 261 People and Cultures of the Middle East
ANTH 333 People of Africa
SOCI 319 Sociology of Latin America

Public Policy
UAPP 220 Community and Change
UAPP 325 Public Policy Analysis
UAPP 427 Evaluating Public Policy
UAPP 440 Contemporary Policy Issues
UAPP 419 Policy Leadership and Ethics
UAPP 410 Making Convincing Policy Arguments

ELECTIVES
After required courses are completed, sufficient elective credits must be taken to meet the minimum credits required for the degree. May include Military Science, Music, or Physical Education. Only two credits of activity-type Physical Education and four credits of Music ensemble and four credits 100- and 200-level courses in Military Science/Air Force may be counted toward the degree.

CREDITS TO TOTAL A MINIMUM OF 120

HONORS BACHELOR OF SCIENCE: ORGANIZATIONAL AND COMMUNITY LEADERSHIP

The recipient must complete:
All requirements for the Bachelor of Science degree in Organizational and Community Leadership.
All the University’s generic requirements
The School of Public Policy and Administration (SPPA) within the College of Arts and Sciences offers the Bachelor of Arts degree in Public Policy that provides students the opportunity to examine complex public issues and the policies developed to address them through a multiple set of disciplines such as Sociology, Education, Leadership, History, and Political Science. The Public Policy degree integrates concepts across different disciplines equipping students with the tools required to examine and understand the purpose and impacts of public policies that address the social, economic, political and environmental conditions affecting communities in the U.S. and globally. Within a liberal arts context, the program focuses on building core skills and professional dispositions so students can effectively take on public policy roles of responsibility that contribute to communities and society at large. In addition, students can pursue their individual interests through a minor that fosters a depth of understanding within a specific content area and through directed electives that provide more exploratory opportunities.

Under the guidance of an interdisciplinary faculty and through field-based learning activities, students will develop the capacity to engage in policy analysis and policy formation. The degree is designed to develop students’ curiosity, confidence, and engagement through the direct interaction with challenging, real-world issues and with those whose responsibility it is to address them.

As a result, Public Policy majors will learn how to effect change in the public, nonprofit and private sectors, specifically preparing them to be entry-level policy analysts, public officials, and community/civic leaders. Majors will also be prepared for graduate work in law, public administration, environmental studies, public policy, and health care administration as well as being able to pursue Masters and Ph.D. degrees in the School of Public Policy and Administration.

The BA in Public Policy is awarded to those students who follow a broad course of study and is designed to provide a liberal education. For this degree, students must complete a minimum of 124 credits composed of requirements for general education, college skills and breadth requirements, required courses in a major, and elective courses. A grade of C- is required in all major courses. No more than 45 credits with the same departmental prefix (including cross-
Students who wish to change from another major in the University are encouraged to contact the Undergraduate Office in the School of Public Policy and Administration for more information.

University and College requirements.

Major Core Courses 30

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>UAPP 110</td>
<td>Changing the World: The Role of Public Policy</td>
<td>3</td>
</tr>
<tr>
<td>UAPP 225</td>
<td>Crafting Public Policy</td>
<td>3</td>
</tr>
<tr>
<td>UAPP 325</td>
<td>Public Policy Analysis</td>
<td>3</td>
</tr>
<tr>
<td>UAPP 300</td>
<td>Public Policy Field Experience</td>
<td>3</td>
</tr>
<tr>
<td>UAPP 440</td>
<td>Contemporary Policy Issues</td>
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</table>

Policy Concentration

Students must complete 15 credits of coursework in one of the following concentrations.

Policy Studies
Policy Analysis
Public and Nonprofit Administration
Urban Policy, Planning, and Historic Preservation

Courses in the public policy concentrations are listed online at http://www.sppa.udel.edu/policyconcentrations

Total Required Credits for the Major 120

MINOR IN PUBLIC POLICY

The required 18 credits for a minor in Public Policy are as follows:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>UAPP 220</td>
<td>Citizens, Community, and Change</td>
<td>3</td>
</tr>
<tr>
<td>UAPP 225</td>
<td>Crafting Public Policy</td>
<td>3</td>
</tr>
<tr>
<td>UAPP 325</td>
<td>Public Policy Analysis</td>
<td>3</td>
</tr>
</tbody>
</table>

Three additional UAPP or cross-listed courses from one of the following public policy concentrations:
- Policy Studies
- Policy Analysis
- Public and Nonprofit Administration
- Urban Policy, Planning, and Historic Preservation.

Courses for the four concentrations are listed at the School’s website.

http://www.sppa.udel.edu/policyconcentrations

Elective Courses 9 credits

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 305</td>
<td>The Evolution of Human Sex Roles and Reproduction</td>
<td></td>
</tr>
<tr>
<td>ENGL 214</td>
<td>Literature and Gender/Sexuality</td>
<td></td>
</tr>
<tr>
<td>ENGL 380</td>
<td>Women Writers (when offered as Virginia Woolf and Lesbian Writing)</td>
<td></td>
</tr>
<tr>
<td>ENGL 480</td>
<td>Seminar (when offered as Sexuality and Identity in the Age of Enlightenment)</td>
<td></td>
</tr>
<tr>
<td>FLLT 330</td>
<td>Varying Authors, Themes and Movements</td>
<td></td>
</tr>
<tr>
<td>HIST 387</td>
<td>History of Sexuality in the US</td>
<td></td>
</tr>
<tr>
<td>HDFS 338</td>
<td>Sexuality in Contemporary Society</td>
<td></td>
</tr>
<tr>
<td>POSC 401</td>
<td>Topics in Constitutional Law (when offered as Law and Sexuality)</td>
<td></td>
</tr>
<tr>
<td>SGST 208</td>
<td>Current Issues in Sexuality and Gender</td>
<td></td>
</tr>
<tr>
<td>SGST 301</td>
<td>Gay and Lesbian Film</td>
<td></td>
</tr>
<tr>
<td>SOCI 213</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The interdisciplinary Sexualities and Gender Studies minor explores the relationship of gender and sexuality to the law, politics, religion, criminal justice, psychology, medicine, education, and the arts. For advisement, course substitutions or exemptions, or a list of approved courses, please see our web site.

The SGST minor consists of 18 credits: three required courses and three elective courses of three credits each. From the elective courses students should take at least two courses at the 300 or 400 level.

Required Courses 9 credits

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SGST 200</td>
<td>Cultural Introduction to Sexualities and Gender Studies</td>
<td></td>
</tr>
<tr>
<td>BISC 152</td>
<td>Biology of Human Sexuality</td>
<td></td>
</tr>
<tr>
<td>IFST 401</td>
<td>Foundations of Human Sexuality</td>
<td></td>
</tr>
<tr>
<td>PSYC 336</td>
<td>Psychology of Human Sexuality</td>
<td></td>
</tr>
<tr>
<td>PHIL 216</td>
<td>Race, Gender, Science</td>
<td></td>
</tr>
<tr>
<td>PHIL 327</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

University and College requirements.
Sociology and Criminal Justice

Men and Women in American Society
SOCI 407/WOMS 407
Sociology of Sex and Gender
WOMS 215 Queer Sexual Imagery in the Visual Arts
WOMS 324 Feminism and Sexualities

Other courses as approved by the faculty coordinator of the minor and the Women's Studies Curriculum Committee.

TOTAL CREDITS 18

Sociology and Criminal Justice

Telephone: (302) 831-2581
http://www.udel.edu/soc/
Faculty Listing: http://www.udel.edu/soc/faculty.html

The Department of Sociology and Criminal Justice administers separate undergraduate programs in Sociology and in Criminal Justice.

Sociology

The sociology major is designed to provide students with a broad understanding of the dynamics of society and social relations. The curriculum include core courses in social theory and research methods and emphasizes flexibility by allowing students to design a program that fits their particular needs and objectives. There are also concentrations in Emergency & Environmental Management, Health Services, Law and Society, and Social Welfare. Students changing to the Sociology major from other programs at UD must have a GPA of 2.0 or better.

Field Experience: One important feature of the sociology major program is a field experience in the emergency & environmental management, health services, law and society, and social welfare concentrations. Each field experience involves placement of students in various organizations and departments related to their area of interest, including city offices and agencies, hospitals and other health care organizations, human services and welfare agencies, and law offices and research bureaus. These field placement programs are offered during the winter session and involve four hours of pass/fail course credit. This credit is considered part of the student's related studies requirement.

Over a five-week period students are placed in the field between 120 and 180 hours, depending upon the nature of the work and the need of the student. In addition, students in each field placement meet in a weekly seminar (for five weeks) to discuss and analyze their experiences.

Advantages of the Field Experience Program
- Provides preprofessional training within selected areas of the student's choice.
- Offers future job-related experience with academic supervision and for academic credit.
- Includes certification of these concentrations by the department, which may be beneficial in obtaining employment.
- Offers increased flexibility for the student by allowing choices among various focused, directed concentrations.

BACHELOR OF ARTS - SOCIOLOGY

University and College requirements.

MAJOR REQUIREMENTS
SOCI 201 Introduction to Sociology 3
SOCI 301 Introduction of Sociological Research 4
SOCI 312 Theories of Society 3

Seven Sociology courses with no more than 9 credits at the 200-level 21
At least 6 credits must be at the 400-level or higher, but cannot be fulfilled with 400-level directed study courses (466) or internship courses (SOCI 464, SOCI 410, SOCI 412, SOCI 441, SOCI 442).

Five courses in related subjects 15
chosen in consultation with the advisor, normally from among the following departments: Economics, Black American Studies, Criminal Justice, Geography, History, Philosophy, Political Science and International Relations, Psychology, and Statistics.

ELECTIVES
After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF 124

BACHELOR OF ARTS - SOCIOLOGY (EMERGENCY & ENVIRONMENTAL MANAGEMENT)

University and College requirements.

MAJOR REQUIREMENTS
SOCI 201 Introduction to Sociology 3
SOCI 301 Introduction of Sociological Research 4

Sociology and Criminal Justice

Telephone: (302) 831-2581
http://www.udel.edu/soc/
Faculty Listing: http://www.udel.edu/soc/faculty.html

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- Offers future job-related experience with academic supervision and for academic credit.
- Includes certification of these concentrations by the department, which may be beneficial in obtaining employment.
- Offers increased flexibility for the student by allowing choices among various focused, directed concentrations.

BACHELOR OF ARTS - SOCIOLOGY

University and College requirements.

MAJOR REQUIREMENTS
SOCI 201 Introduction to Sociology 3
SOCI 301 Introduction of Sociological Research 4

Seven Sociology courses with no more than 9 credits at the 200-level 21
At least 6 credits must be at the 400-level or higher, but cannot be fulfilled with 400-level directed study courses (466) or internship courses (SOCI 464, SOCI 410, SOCI 412, SOCI 441, SOCI 442).

Five courses in related subjects 15
chosen in consultation with the advisor, normally from among the following departments: Economics, Black American Studies, Criminal Justice, Geography, History, Philosophy, Political Science and International Relations, Psychology, and Statistics.

ELECTIVES
After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF 124

BACHELOR OF ARTS - SOCIOLOGY (EMERGENCY & ENVIRONMENTAL MANAGEMENT)

University and College requirements.

MAJOR REQUIREMENTS
SOCI 201 Introduction to Sociology 3
SOCI 301 Introduction of Sociological Research 4
### Electives

After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

Credits to total a minimum of 124

**Bachelor of Arts - Sociology (Health Services)**

University and College requirements.

### Major Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCI 201</td>
<td>Introduction to Sociology</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 301</td>
<td>Introduction of Sociological Research</td>
<td>4</td>
</tr>
<tr>
<td>SOCI 311</td>
<td>Sociology of Health Care</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 312</td>
<td>Theories of Society</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 410</td>
<td>Health Services Practicum and Seminar</td>
<td>4</td>
</tr>
</tbody>
</table>

(This course (SOCI 410) is required but does not count as part of the thirty-one sociology credits for the major.)

Any five courses in Sociology, with no more than 9 credits at the 200-level. 15

At least 6 credits must be at the 400-level or higher, but cannot be fulfilled with 400-level directed study courses (466) or internship courses (SOCI 326, SOCI 410, SOCI 412, SOCI 441, SOCI 442, SOCI 464). The following courses are recommended:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCI 204</td>
<td>Urban Communities</td>
<td></td>
</tr>
<tr>
<td>SOCI 209</td>
<td>Social Problems</td>
<td></td>
</tr>
<tr>
<td>SOCI 311</td>
<td>Sociology of Health Care</td>
<td></td>
</tr>
<tr>
<td>SOCI 322</td>
<td>Crowds, Cults, and Revolutions</td>
<td></td>
</tr>
<tr>
<td>SOCI 323</td>
<td>Sociology of Risk</td>
<td></td>
</tr>
<tr>
<td>SOCI 327</td>
<td>Sociology of Organizations</td>
<td></td>
</tr>
<tr>
<td>SOCI 331</td>
<td>World Population: Profiles and Trends</td>
<td></td>
</tr>
<tr>
<td>SOCI 341</td>
<td>Welfare and Society</td>
<td></td>
</tr>
<tr>
<td>SOCI 361</td>
<td>Racial Inequality</td>
<td></td>
</tr>
</tbody>
</table>

Five additional courses in related subjects chosen in consultation with the Concentration coordinator. 15

The following are recommended but the student is not limited solely to these courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANFS 270</td>
<td>Biotechnology: Science and Socio-Economics Issues</td>
<td></td>
</tr>
<tr>
<td>ANTH 101</td>
<td>Introduction to Social and Cultural Anthropology</td>
<td></td>
</tr>
<tr>
<td>COMM 245</td>
<td>Mass Communication and Culture</td>
<td></td>
</tr>
<tr>
<td>COMM 256</td>
<td>Principles of Communication Theory</td>
<td></td>
</tr>
<tr>
<td>GEOG 203</td>
<td>Introduction to Cultural Geography</td>
<td></td>
</tr>
<tr>
<td>GEOG 235</td>
<td>Conservation of Natural Resources</td>
<td></td>
</tr>
<tr>
<td>GEOG 236</td>
<td>Conservation: Global Issues</td>
<td></td>
</tr>
<tr>
<td>GEOG 310</td>
<td>Social Geography</td>
<td></td>
</tr>
<tr>
<td>GEOG 320</td>
<td>Water and Society</td>
<td></td>
</tr>
<tr>
<td>GEOG 449</td>
<td>Environment and Society</td>
<td></td>
</tr>
<tr>
<td>GEOL 112</td>
<td>Earth Resources and Public Policy</td>
<td></td>
</tr>
<tr>
<td>POSC 220</td>
<td>Introduction to Public Policy</td>
<td></td>
</tr>
<tr>
<td>POSC 240</td>
<td>Introduction to International Relations</td>
<td></td>
</tr>
<tr>
<td>POSC 303</td>
<td>Public Administration</td>
<td></td>
</tr>
<tr>
<td>POSC 311</td>
<td>Introduction to Politics in Developing Countries</td>
<td></td>
</tr>
<tr>
<td>POSC 350</td>
<td>Politics and the Environment</td>
<td></td>
</tr>
<tr>
<td>POSC 456</td>
<td>Disasters and Politics</td>
<td></td>
</tr>
</tbody>
</table>

Suggested courses for students with medical social work interest:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCI 204</td>
<td>Urban Communities</td>
<td></td>
</tr>
<tr>
<td>SOCI 209</td>
<td>Social Problems</td>
<td></td>
</tr>
<tr>
<td>SOCI 213</td>
<td>Men and Women in American Society</td>
<td></td>
</tr>
<tr>
<td>SOCI 215</td>
<td>Race and Society</td>
<td></td>
</tr>
<tr>
<td>SOCI 305</td>
<td>Social Class and Inequality</td>
<td></td>
</tr>
<tr>
<td>SOCI 308</td>
<td>The Family</td>
<td></td>
</tr>
<tr>
<td>SOCI 341</td>
<td>Welfare and Society</td>
<td></td>
</tr>
<tr>
<td>SOCI 343</td>
<td>Society, Politics, and Health Care</td>
<td></td>
</tr>
<tr>
<td>SOCI 348</td>
<td>Theories of Social Work Practice</td>
<td></td>
</tr>
<tr>
<td>SOCI 418</td>
<td>Race, Gender, and Poverty</td>
<td></td>
</tr>
</tbody>
</table>

Suggested courses for students with medical administration interest:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCI 204</td>
<td>Urban Communities</td>
<td></td>
</tr>
<tr>
<td>SOCI 209</td>
<td>Social Problems</td>
<td></td>
</tr>
<tr>
<td>SOCI 215</td>
<td>Race and Society</td>
<td></td>
</tr>
</tbody>
</table>
SOCI 305 Social Class and Inequality
SOCI 341 Welfare and Society
SOCI 343 Society, Politics, and Health Care
SOCI 361 Racial Inequality
SOCI 418 Race, Gender, and Poverty
SOCI 428 Corporate Crime

Related Work:
Eleven additional credits of related work are required and may include the following: 11

ACCT 200 Survey of Accounting
ANTH 367 Medical Anthropology
ECON 100 Economic Issues and Policies
ECON 390 Economics of Health Care (ECON 151 is a pre-requisite)
HIST 382 History of Western Medicine
HIST 449 Seminar: Science, Technology and Medicine
HDFS 201 Life Span Development
HDFS 235 Survey of Child and Family Services
HDFS 270 Families and Development
HDFS 332 Counseling Theories
HDFS 403 Concepts in Gerontology
PHIL 241 Ethical Issues in Health Care
PHIL 246 Philosophical Perspectives of Medicine
PHIL 313 Killing and Letting Die
PHIL 444 Medical Ethics
PSYC 420 Mental illness: Historical and Cultural Perspectives
POSC/SOCI 343 Society, Politics and Perspectives
POSC 411 Politics and Poverty
POSC 653 Politics and Healthcare
UAPP 657 Health Policy (seniors only, ECON 100 or 151 recommended)
WOMS 233 Women, Biology and Medicine
WOMS 389 Topics: Women and Health Issues

ELECTIVES
After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

CREDENTIALS TO TOTAL A MINIMUM OF 124

BACHELOR OF ARTS - SOCIOLOGY (LAW AND SOCIETY)

University and College requirements.

MAJOR REQUIREMENTS
SOCI 201 Introduction to Sociology 3
SOCI 301 Introduction of Sociological Research 4
SOCI 312 Theories of Society 3
SOCI 345 Sociology of Law 3
SOCI 442 Law and Society Practicum and Seminar. 4

This course is required but does not count as part of the thirty-one Sociology credits for the major.

One of the following courses: 3
SOCI 416 Social Thought and Contemporary Society
SOCI 450 Politics and Society

Any five other courses in Sociology, with no more than 9 credits at the 200-level. At least 6 credits must be at the 400-level or higher, but cannot be fulfilled with 400-level directed study courses (SOCI 466) or internship courses (SOCI 464, SOCI 410, SOCI 412, SOCI 441, SOCI 442). 15

Suggested courses for the study of family/gender include:
SOCI 213 Men and Women in American Society
SOCI 302 Social Deviance
SOCI 303 Juvenile Delinquency
SOCI 308 The Family
SOCI 330 Population, Law and Society
SOCI 407 Sociology of Sex and Gender

Suggested courses in the organization/work area:
SOCI 327 Sociology of Organizations
SOCI 330 Population, Law and Society
SOCI 428 Corporate Crime
SOCI 450 Political Economy

Twelve credits from the following courses are recommended: 12
CRJU 320 Introduction to Criminal Law
CRJU 347 The Jury: Guilty or Not Guilty
CRJU 357 Seminar on the Police
CRJU 425 Criminal Law and Social Policy
CRJU 4xx Contemporary Debates
POSC 402 Civil Liberties I
POSC 404 The Judicial Process
POSC 405 Constitutional Law of the U.S.
POSC 406 Civil Liberties II
PHIL 201 Social and Political Philosophy
PHIL 446 Philosophy of Law
HIST 301 The Worker in American Life
HIST 309 U.S. Business and Political Economy

A second writing course in any department 3

A course in oral communication is suggested 3
After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree. CREDITS TO TOTAL A MINIMUM OF 124

BACHELOR OF ARTS - SOCIOLOGY EDUCATION

University and College requirements.

MAJOR REQUIREMENTS

SOCI 201 Introduction to Sociology 3
SOCI 301 Introduction of Sociological Research 4
SOCI 312 Theories of Society 3
SOCI 341 Welfare and Society 3
SOCI 348 Theories of Social Work Practice 3
SOCI 441 Social Welfare Practicum and Seminar 4

This course is required but does not count as part of the thirty-one Sociology credits for the major.

Any five courses in Sociology, with no more than 9 credits at the 200-level. 15

At least 6 credits must be at the 400-level or higher, but cannot be fulfilled with 400-level directed study courses (SOCI 466) or internship courses (SOCI 464, SOCI 410, SOCI 412, SOCI 441, SOCI 442). The following courses are recommended:

SOCI 204 Urban Communities
SOCI 215 Race in Society
SOCI 302 Social Deviance
SOCI 303 Juvenile Delinquency
SOCI 304 Criminology
SOCI 305 Social Class and Inequality
SOCI 308 The Family
SOCI 349 Aging and Society
SOCI 361 Race, Power and Social Conflict
SOCI 415 Race, Class and Gender
SOCI 418 Race, Gender and Poverty

Eleven additional credits of related work are required and may include the following: 11

POSC 411 Politics and Poverty
PSYC 301 Personality
PSYC 325 Child Psychology
PSYC 333 Psychology of Women
PSYC 334 Abnormal Psychology
HDFS 235 Survey in Child and Family Services
HDFS 332 Counseling Theories

or

Other courses chosen with the approval of the advisor.

ELECTIVES

After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree. CREDITS TO TOTAL A MINIMUM OF 124

BACHELOR OF ARTS - SOCIOLOGY (SOCIAL WELFARE)

University and College requirements.

MAJOR REQUIREMENTS

SOCI 201 Introduction to Sociology 3
SOCI 301 Introduction of Sociological Research 4
SOCI 341 Welfare and Society 3
SOCI 348 Theories of Social Work Practice 3
SOCI 441 Social Welfare Practicum and Seminar 4

Seven Sociology courses, with no more than 9 credits at the 200-level. 21

At least 6 credits must be at the 400-level or higher, but cannot be fulfilled with 400-level directed study courses (SOCI 466) or internship courses (SOCI 464, SOCI 410, SOCI 412, SOCI 441, SOCI 442).

Twenty-four credits in the social sciences with at least three credits in each of the following departments: 24

Anthropology course, Economics course, Geography course, History course, Political Science course

PSYC 100 General Psychology

Six additional credits selected from the social science departments listed above 6

EDUC 413 Adolescent Development and Educational Psychology 4
EDUC 414 Teaching Exceptional Adolescents 3
EDUC 419 Diversity in Secondary Education 3
EDUC 420 Reading in the Content Areas 1
HIST 491 Planning a Course of Instruction 3
HIST 493 Seminar: Problems in Teaching History and Social Sciences 3
EDUC 400 StudentTeaching 9

A grade of C- or better is required in all required SOCI, EDUC, HIST and major related courses.

To be eligible to student teach, Sociology Education students must have a GPA of 3.0 in their major and an overall GPA of 2.75.

Students must pass a teacher competency test as established by the University Council on Teacher Education. Students should consult the teacher education program coordinator to obtain the student teaching application and other information concerning student teaching policies.

CREDITS TO TOTAL A MINIMUM OF 124
BACHELOR OF ARTS - CRIMINAL JUSTICE

HONORS BACHELOR OF ARTS - SOCIOLOGY (All Concentrations)

Students wishing to receive an Honors BA in Sociology must complete:

All requirements for the Bachelor of Arts degree with a major in Sociology, and where appropriate, concentration requirements (see www.udel.edu/soc/concentr.htm)

All of the University’s generic requirements for the Honors Baccalaureate degree.

Twelve credits of honors courses in Sociology. At least six credits must be at the 300 level or higher.

MINOR IN SOCIOLOGY

The minor in sociology requires SOCI 201 plus 15 credits in sociology, with at least 9 credits at or above the 300-level. SOCI 301 or SOCI 312 is required or an equivalent course in another social science discipline, such as PSYC 209, ECON 422, ECON 426, MATH 205, POSC 300, POSC 434 or POSC 435.

Criminal Justice

The Criminal Justice major program is structured around a core of criminal justice courses on such topics as law enforcement, the judicial process, juvenile justice, corrections, and the criminal law. The Criminal Justice curriculum includes courses in sociology, political science, psychology, and at least one foreign language. Junior and senior majors have the opportunity to be placed in a field experience with a criminal justice-related organization.

Students may become criminal justice majors in one of two ways. First, any incoming freshman or transfer student may choose criminal justice as a major. These students are expected to demonstrate both the ability and the commitment to perform well in all of their course work. Those who do not should meet with their advisor to discuss ways to improve their study skills and/or the possibility of selecting another major. Second, matriculated students who have already declared another major or who presently are undeclared may transfer into the Criminal Justice Program if their overall cumulative average at the University of Delaware is at least 2.0.

Double Major. With the permission of the dean of the college and the department chair a student may combine their academic and professional interests in complementary fields by fulfilling requirements for two majors such as criminal justice and English (for a career in journalism), criminal justice and chemistry (for a career in forensic science), criminal justice and political science (for a career in court administration), criminal justice and psychology (for a career in corrections), or criminal justice and sociology (for a career in social work or related fields).

Residency Requirement. At least 15 credits of courses applicable to the Criminal Justice major (courses with a CRJU prefix) must be taken at the University of Delaware.

BACHELOR OF ARTS - CRIMINAL JUSTICE

University and College requirements.

MAJOR REQUIREMENTS

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRJU 110</td>
<td>Introduction to Criminal Justice</td>
<td>3</td>
</tr>
<tr>
<td>CRJU 201</td>
<td>Problems of Law Enforcement</td>
<td>3</td>
</tr>
<tr>
<td>CRJU 202</td>
<td>Problems of Criminal Judiciary</td>
<td>3</td>
</tr>
<tr>
<td>CRJU 203</td>
<td>Problems of Corrections</td>
<td>3</td>
</tr>
</tbody>
</table>

Criminal Justice courses at the 300 or 400-level (except CRJU 495) 18

A grade of C- or better is required in all CRJU courses.

No more than 6 credits of independent study (CRJU 366 or 466) may count toward the requirements for the major.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCI 201</td>
<td>Introduction to Sociology</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 301</td>
<td>Introduction of Sociological Research</td>
<td>4</td>
</tr>
</tbody>
</table>

(requires a grade of C- or better)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>POSC 150</td>
<td>The American Political System</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 100</td>
<td>General Psychology</td>
<td>3</td>
</tr>
<tr>
<td>One of the following four courses:</td>
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<td>3</td>
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<tr>
<td>PSYC 301</td>
<td>Personality</td>
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<tr>
<td>PSYC 303</td>
<td>Introduction to Social Psychology</td>
<td></td>
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<tr>
<td>PSYC 325</td>
<td>Child Psychology</td>
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<tr>
<td>PSYC 334</td>
<td>Abnormal Psychology</td>
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</table>

One of the following four courses: 3

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>POSC 401</td>
<td>Topics in Constitutional Law</td>
<td></td>
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<tr>
<td>POSC 402</td>
<td>Civil Liberties: Individual Freedom</td>
<td></td>
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<tr>
<td>POSC 403</td>
<td>Civil Liberties: Equal Protection Clause</td>
<td></td>
</tr>
<tr>
<td>POSC 405</td>
<td>Constitutional Law of the United States</td>
<td></td>
</tr>
</tbody>
</table>

ELECTIVES

After required courses are completed sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF 124
BACHELOR OF ARTS - CRIMINAL JUSTICE (LAW AND SOCIETY)

University and College requirements.

MAJOR REQUIREMENTS

CRJU 110 Introduction to Criminal Justice 3
CRJU 201 Problems of Law Enforcement 3
CRJU 202 Problems of Criminal Judiciary 3
CRJU 203 Problems of Corrections 3

Criminal Justice electives totaling 18 credits. 18 Electives must include one of the following introductory courses.
CRJU 301 Introduction to Legal Studies
CRJU 345 Sociology of Law

Electives must also include at least one of the following courses containing significant legal or sociolegal content:
CRJU 311 Capital Punishment and the Law
CRJU 320 Introduction to Criminal Law
CRJU 324 American Constitutional History
CRJU 346 Psychology and the Law
CRJU 375 Criminal Procedure
CRJU 425 Criminal Law and Social Policy
CRJU 446 Judging the Jury
CRJU 450 Prisoners and the Law
CRJU 457 Criminal Evidence
CRJU 475 Social Science and the Law
CRJU 367/CRJU 467 Other experimental courses with significant legal or sociolegal component, with the permission of the student's advisor.

NOTE: CRJU 301 Introduction to Legal Studies and CRJU 345 Sociology of Law, if not used to fulfill the introductory course requirement, are also acceptable for the law-related elective requirement.

A grade of C- or better is required in all CRJU courses.

Required related work:
SOCI 201 Introduction to Sociology 3
SOCI 301 Introduction of Sociological Research 4
POSC 105 American Political System 3
PSYC 100 General Psychology 3

One of the following four courses: 3
POSC 401 Topics in Constitutional Law
POSC 402 Civil Liberties: Individual Freedoms
POSC 403 Civil Liberties: Equal Protection Clause
POSC 405 Constitutional Law of the United States

One of the following four courses: 3
PSYC 301 Personality
PSYC 303 Introduction to Social Psychology

PSYC 325 Child Psychology
PSYC 334 Abnormal Psychology

One of the following practicum courses: 4
CRJU 495 Field Experience in Criminal Justice
SOCI 442 Seminar and Practicum in Law and Society

Or, with permission of advisor, a law-related internship supervised by a Criminal Justice or Sociology faculty member as a 366 or 466 course.

ELECTIVES

After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF 124

HONORS BACHELOR OF ARTS - CRIMINAL JUSTICE

Students wishing to receive an Honors BA in Criminal Justice must complete:

All requirements for the Bachelor of Arts degree with a major in Criminal Justice.

All of the University's generic requirements for the Honors Baccalaureate degree.

Twelve credits of honors courses in Criminal Justice. At least six credits must be at the 300 level or higher.

Theatre

Telephone: (302) 831-1894
http://www.pttp.udel.edu
Faculty Listing: http://www.pttp.udel.edu/faculty.html

The Theatre Department offers three distinct minors all designed to deepen the student's appreciation of the theatre as an art form within the context of a liberal arts education. Coursework in all minors provides students with a foundation for theatre appreciation, focusing on the art and craft of theatre making. The Theatre Department also provides the University with a variety of general education courses in theatre designed to expand appreciation of, and future participation in, theatre. Students interested in performance opportunities should contact one of the amateur theatre groups on campus: E-52, Harrington Theatre Arts Company, or Khulumani Theatre Troupe.

PERFORMANCE STUDIES MINOR

The Performance Studies Minor is designed for those students who are interested in learning about the performance areas of the theatre -
The Theatre Studies Minor is designed for those students who are interested in a variety of areas of the theatre - performance, production, history, directing, and other related subjects - and who desire the opportunity to explore these areas through the prescribed coursework of a minor.

Choose one from the following list: 
THEA 104  Introduction to Theatre and Drama  

Six Theatre (THEA) elective credits at the 200-level  

Six additional credits chosen from the following: 
THEA 309  Fundamentals of Stage Management  
THEA 310  Fundamentals of Maskmaking  
THEA 311  Fundamentals of Scene Design  
THEA 312  CAD and Computer Applications for Theatre Production  
(or other courses as approved by advisor)

THEA 408  Theatre Practicum for Minors  

TOTAL CREDITS  

*Students interested in taking 300-level costume courses as their elective choices should take THEA 203 as their introductory course choice.

**Students electing to take two 300-level electives for a total of 6 crs. must take 6 crs. of THEA 408. Students electing to take three 300-level electives for a total of 9 crs. must take 3 crs. of THEA 408.

**Women's Studies**

Telephone: (302) 831-8474  
http://www.udel.edu/WomensStudies  
Faculty Listing:  
http://www.udel.edu/WomensStudies/facultyAndStaff.shtml  

Women's Studies provides courses that allow students to explore a range of interests from the perspectives of anthropology, cultural
BACHELOR OF ARTS - WOMEN'S STUDIES

The department offers a BA degree in Women's Studies, with an Honors Degree option and a minor in Women's Studies. The department also administers the interdisciplinary minor in Sexualities and Gender Studies. Majors may choose to complete a concentration in Women in Global Perspective. Interdepartmental and double majors are also options. In addition, an internship gives students an opportunity to integrate classroom learning with practical competencies gained from actual experience. No minimum grade point average is required to begin, but students must not be on academic probation.

BACHELOR OF ARTS - WOMEN'S STUDIES

University and College requirements.

MAJOR REQUIREMENTS

WOMS 201 Introduction to Women's Studies 3
WOMS 202 Women's Studies in Global Context 3
WOMS 216/PHIL 216 Introduction to Feminist Theory 3
WOMS 410 The Study of Women's Studies 3

The remaining eighteen credits of coursework from the following list (only sections cross-listed with WOMS):

WOMS200/SGST 200 Cultural Introduction to Sexualities and Gender Studies
WOMS 203/PHIL 202 Contemporary Moral Problems
WOMS204/COMM 204 Gender and Communication
WOMS 205 Women in the Arts and Humanities
WOMS 206 Women and Work
WOMS/SGST 208 Current Issues in Sexuality and Gender Lecture Series
WOMS 210/PHIL 210 Women and Religion

WOMS211/SOCI 211 Men, Conflict, and Social Change
WOMS 212 Motherhood in Culture and Politics
WOMS 213/SOCI 213 Men and Women in American Society
WOMS 215/MSST 215 Queer Sexual Imagery in the Visual Arts
WOMS 222/LING 222 Language and Gender
WOMS 223/ANTH 223 Food, Gender and Culture
WOMS 233/CSCC 233 Women, Biology, and Medicine
WOMS 240 Women and Violence
WOMS 242/ARTH 242 Woman as Image and Imagemaker
WOMS 250 Topics in International Women's Studies
WOMS 260 Women: Cultural Representations
WOMS 290 Gender in International Film
WOMS 291/HIST 291 Women's History through Film
WOMS 298/BAMS 298 Research on Race, Ethnicity, and Culture
WOMS 299 Research on Women
WOMS 300/HIST 300 Women in American History
WOMS 301/SGST 301 Gay and Lesbian Film
WOMS 302/MUSC 302 Women in Music: Alternate Survey
WOMS 304 Adolescent Girls
WOMS 305/ANTH 305 The Evolution of Human Sex Roles and Reproduction
WOMS 310/ANTH 310 Asian Women's Lives
WOMS 311/ARTH 311 Renaissance Women, Society and Art
WOMS 312/ANTH 312 Asian Women in the Globalized Workplace
WOMS 315/POSC 315 Third World Women in Politics
WOMS 316/ANTH 316 Islam and Gender
WOMS 318/ENGL 318 Studies in Film
WOMS 319/FLLT 319 Topics: French Literature in Translation
WOMS 320/FLLT 320 Varying Authors and Genres
WOMS 321/FLLT 321
Topics: Chinese Literature in Translation
WOMS 322/FLLT 322
Topics: Classical Literature in Translation
WOMS 323/POSC 323
Introduction to Women and Politics
WOMS 324 Feminism and Sexualities
WOMS 325/FLLT 325
Topics: German Literature in Translation
WOMS 326/FLLT 326
Topics: Hispanic Literature in Translation
WOMS 327/PHIL 327
Race, Gender, Science
WOMS 328/FLLT 328
Topics: Japanese Literature in Translation
WOMS 329/FLLT 329
Topics: Italian Literature in Translation
WOMS 330/FLLT 330
Varying Authors, Themes, and Movements
WOMS 332 Women, Race and Ethnicity
WOMS 333/PSYC 333
Psychology of Women
WOMS 334/HIST 334
African American Women's History
WOMS 336 Feminist Cultural Studies
WOMS 337/ENGL 337
Victorian Fiction
WOMS 350/CRJU 350
Gender and Criminal Justice
WOMS 352/ENGL 352
Studies in Nineteenth Century Literature
WOMS 353/ENGL 353
Twentieth Century British Literature
WOMS 363/ANTH 363
Women in Cross-Cultural Perspective
WOMS 366 Independent Study
WOMS 372/HIST 372
Popular Culture in Urban Japan
WOMS 375/FLLT 375
Topics: Russian and Soviet Culture in Translation
WOMS 380/ENGL 380
Women Writers
WOMS 381/ENGL 381
Women in Literature
WOMS 382/ENGL 382
Studies in Multicultural Literature in English
WOMS 383/FLLT 383
Topics: Chinese Culture in Translation
WOMS 385/FLLT 385
Women and the Economy
WOMS 387/HIST 387
History of Sexuality in the U.S.
WOMS 389/CSCC 389/PHIL 389
Topics: Women and Health Issues
WOMS 390/ARSC 390
Honors Colloquium
WOMS 401/HDFS 401/HESC 401
Foundations of Human Sexuality
WOMS 402/POSC 401
Topics in Constitutional Law
WOMS 407/SOCI 407
Sociology of Sex and Gender
WOMS 409/HDFS 409
Domestic Violence Services
WOMS 411/HIST 411
Seminar in American History
WOMS 413/POSC 413
Problems in American Government
WOMS 415/SOCI 415/BAMS 415
Race, Class, and Gender
WOMS 417/CRJU 417
Sex Crimes and Punishment
WOMS 418/SOCI 418/BAMS 418
Race, Gender, and Poverty
WOMS 419/FASH 419
Social Psychological Aspects of Clothing
WOMS 420 Women's Studies Senior Thesis
WOMS 430/HDFS 430
Family Life Education
WOMS 436/POSC 436
Politics and Literature
WOMS 439/HIST 439
Women and Revolution in Africa
WOMS 440/COMM 440
Topics: Interpersonal Communication
WOMS 442/COMM 442/PSYC 443
Topics: Organizational Communication
WOMS 444/HIST 444
Seminar: Women in the Islamic Middle East
WOMS 460/SOCI 460/GEOG 460/HDFS 460 Women in International Development
WOMS 465/ENGL 465
Studies in Literature Genres, Types, and Movements
WOMS 466 Independent Study
WOMS 470/PHIL 471
Advanced Philosophical Topics
WOMS 472/HIST 471
Seminar in Medieval History
WOMS 475/HIST 475
Seminar in Modern European
Students must take one of the following courses:

**WOMS/ CRJU 350**
- Gender and Criminal Justice 3

**WOMS/ SOCI/ CRJU 417**
- Sex Crimes and Punishments 3

**WOMS 498 (for repeat credit)**
- Internship in Women's Studies 3

**CRJU 489**
- Crime Victims and Victims’ Rights 3

Students must additionally complete:

Any one WOMS Elective (or course cross-listed with WOMS) 3

**ELECTIVES:**
After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree (124 credits).

**BACHELOR OF ARTS - WOMEN'S STUDIES**

(WOMEN IN GLOBAL PERSPECTIVE)

University and College requirements.

**MAJOR REQUIREMENTS**

**WOMS 201**  
- Introduction to Women's Studies 3

**WOMS 202**
- Introduction to International Women's Studies 3

**WOMS 216 /PHIL 216**
- Introduction to Feminist Theory 3

**WOMS 410**
- The Study of Women's Studies (capstone course) 3

WOMS 410 is offered only once a year in the spring semester. If a student is planning to graduate in the fall or winter, she/he should arrange to take WOMS 410 during the preceding spring semester.

Students must take twelve of their credits of coursework from two clusters, Country or Culture Specific Courses (CS) and Comparative Courses (CC). Up to nine of the concentration credits may be from one cluster.

Culture Specific courses (CS) are:

**WOMS 250**
- Topics in International Women's Studies

**WOMS 311/ARTH 311**
- Renaissance Women, Society and Art

**WOMS 316/ANTH 316**
- Islam and Gender

**WOMS 319/FLT 319**
- Topics: French Literature in Translation

**WOMS 321/FLT 321**
- Topics: Chinese Literature in
After required courses are completed to fulfill both major and concentration requirements, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF 124

HONORS BACHELOR OF ARTS - WOMEN'S STUDIES

The recipient must complete:
- All requirements for the Bachelor of Arts degree in Women's Studies.
- All of the University's generic requirements for the Honors Baccalaureate degree.

The Honors credits required in the major must be in courses in Women's Studies or courses cross-listed with Women's Studies.

MINOR IN WOMEN’S STUDIES

A minimum of 18 credit hours is required, which must include the following:

1. WOMS 201 Introduction to Women's Studies 3
2. Two courses in WOMS or cross-listed with WOMS at or above the 300-level 6
3. Three elective courses in WOMS or cross-listed with WOMS 9

Note: No more than 6 credits in WOMS experimental courses (x67-numbered) may be counted toward the 18-credit requirement.

A minimum grade of C- is required in each course.

MINOR IN DOMESTIC VIOLENCE PREVENTION AND SERVICES

A minimum of 18 credits is required, which must include the following:

1. WOMS 201 Introduction to Women’s Studies 3
2. WOMS 240 Women and Violence 3
3. WOMS/CRJU/HDFS/SOCI 408 Domestic Violence Policy and Prevention 3
4. WOMS/HDFS 409 Domestic Violence Services 3
5. Six additional credits from the following list:
   - WOMS/CRJU 350 Gender and Criminal Justice 3
   - WOMS/CRJU/SOCI 417 Sex Crimes and Punishment 3
   - WOMS 498 Internship in Women’s Studies 3
   - CRJU 489 Crime Victims and Victims’ Rights 3

A minimum grade of C- is required in each course.
The mission of the Alfred Lerner College of Business and Economics is to foster scholarship and to offer distinctive, innovative educational opportunities related to the successful management and leadership of organizations operating in an environment of scarce resources, rapid change, global competition, and advances in technology.


Minors are offered in Advertising, Business Administration, Economics, Entrepreneurial Studies, Global Enterprise Technologies, International Business Studies, International Business/International Business with Language, Management Information Systems and Restaurant Management. Enrollment in minors is limited and certain qualifications must be met. The Certificate of Business Essentials is also offered to non-business majors.

Undergraduate students are admitted as new students into the Accounting, Economics, Economics Education, Finance, Hospitality Industry Studies, Hotel, Restaurant and Institutional Management, International Business Studies, Management, Management Information Systems, Marketing, Operations Management or Sport Management degree programs, or into Undeclared Business. The undeclared students must select a major in the Lerner College by October 1 of their sophomore year. Students already admitted to the University of Delaware who are matriculated in other programs may apply to change their degree program to Accounting, Economics, Finance, International Business Studies, Management, Management Information Systems, Marketing, Operations Management or Sport Management after successfully completing the required microeconomics course, macroeconomics course, and calculus course, and earning a minimum of 28 credits at the University of Delaware. Students may apply to change their major into HRIM after successful completion of 15 credits. Students should consult with the appropriate department as to application deadlines within the Lerner College. Review for admission consideration will first be performed for students who have completed all their coursework (including the microeconomics, macroeconomics, and calculus courses) at the University of Delaware. The major criterion used for admission selection is academic performance. The average grade point of those accepted over the past five years is 2.8. Applications for admission to the minors are also reviewed and have similar criteria. Additional information and application forms are available in the five departments; application forms are also available on-line.

Note that Lerner College students who were previously dismissed for academic deficiency and are now applying for readmission to the University may be eligible for readmission into their degree program in the Alfred Lerner College of Business and Economics if they: (1) had met with the Lerner College’s assistant dean during advance registration of each semester and term in which they were dismissed, and obtained the dean’s prior approval to take courses in the University of Delaware Division of Professional and Continuing Studies to qualify for readmission into the Lerner College, (2) had a minimum of 60 earned credit hours at the time they were dismissed, (3) were enrolled as a Lerner College student at the time of their dismissal, and (4) have a minimum cumulative grade point index of a 2.0 after taking courses in the University of Delaware Division of Professional and Continuing Studies. Only courses that were approved by the Lerner College’s assistant dean prior to enrolling in the courses will count towards readmission into the Lerner College.

Also note that Lerner College students who have earned 59 credit hours or less at the time they were dismissed will not automatically be considered, nor are they guaranteed readmission into the Alfred Lerner College of Business and Economics. The major criterion for readmission selection is academic performance. Upon dismissal from the Lerner College, the student must meet with the Lerner College’s assistant dean to discuss and determine a University major that he or she is best academically qualified to pursue prior to enrolling in courses during the dismissal period. If a major in business continues to be the most appropriate major for the student to pursue, in order to qualify for readmission, the student must: (1) have obtained the assistant dean’s approval, prior to the beginning of each semester or term, to take courses in the University of Delaware
Division of Professional and Continuing Studies, and (2) have a cumulative grade point index of a 2.0.

All dismissed Lerner College students who seek readmission into the Alfred Lerner College of Business and Economics, regardless of their total number of credit hours must, with prior approval of the assistant dean, take courses in the University of Delaware Division of Professional and Continuing Studies. Students will only be permitted to take a maximum total of 7 credit hours each semester or term in the Division of Professional and Continuing Studies during their dismissal period. If a major outside of the Alfred Lerner College of Business and Economics is determined to be more appropriate for the student to pursue, the student must meet with the assistant dean of the college in which the major is offered and comply with that college’s readmission policy.

Dean's Scholar Program

The Dean's Scholar Program exists to serve the needs of students whose clearly defined educational goals cannot be effectively achieved by pursuing the standard curricula for all existing majors, minors, and interdepartmental majors sponsored by the University. Driven by an overarching passion or curiosity that transcends typical disciplinary bounds and curricula, a Dean's Scholar's intellectual interests may lead to broad interdisciplinary explorations of an issue or to more intense, in-depth studies in a single field at a level akin to graduate work. In consultation with faculty advisors and the deputy/assistant dean of their college, Dean's Scholars design an imaginative and rigorous individual plan of study to meet the total credit hours required for graduation. Contact the deputy dean in the Alfred Lerner College of Business and Economics or go to www.udel.edu/deansscholar/ for more information and the application.

Minor in Entrepreneurial Studies

The minor in entrepreneurial studies is designed for students who may be interested in starting their own businesses or working in an entrepreneurial environment (e.g., working in new product development for a large company, working as a venture capitalist, or working for a startup). The minor is open to all undergraduate students, regardless of major. Applications to be admitted into the Entrepreneurial Studies minor should be filled out and submitted online anytime during the student’s freshman or sophomore year. Acceptance will be based on academic standing, motivation for proposed study, and availability of seats. More information is available at www.udel.edu/e-studies. The requirements for the minor are as follows:

Required Courses:
- ECON 151 Introduction to Microeconomics: Prices and Markets 3
- ACCT 207 Accounting I 3
- ECON 350 Economics of Entrepreneurship 3
- ENTR 301 Introductory Entrepreneurship 3
- ENTR 410 Business Venture Competition 3
- ENTR 411 Special Topics in Entrepreneurship 3
- One of the following courses: 3
  - BUAD 444 Entrepreneurship and Small Business Management
  - ENTR 460/ELEG 460 High Technology Entrepreneurship
  - FREC 430 Establishing and Managing a Food and Agribusiness Enterprise
  - HRIM 314 Hospitality Entrepreneurship and Venture Creation
  - LEAD 411 Topics in Leadership Dynamics (permission required from Leadership Studies Department)

Certificate of Business Essentials

The Certificate of Business Essentials is designed to provide non-business majors with an understanding of core business principles and to expose these students to key business tools. The Certificate may be attractive to students in a variety of majors outside of the Alfred Lerner College of Business and Economics to augment their major field of study and provide alternative career options. The following required courses work together to provide these students with a fundamental understanding of the language and fundamental principles of business. All courses require a minimum grade of C-.

CURRICULUM CREDITS
- ECON 100 Economic Issues and Policies 3
- BUAD 100 Introduction to Business 3
- ACCT 200 Survey of Accounting 4
- FINC 200 Fundamentals of Finance 3

Both FINC 200 and BUAD 100 are restricted to students who have been admitted into the Certificate program, and to those students who need to take these classes to fulfill a requirement for their major or minor. It is recommended
that students follow the course sequence listed above. All courses are designed exclusively for non-business majors (excluding Hotel, Restaurant and Institutional Management); these courses will NOT count towards required coursework for any student who eventually transfers into a business major in the Alfred Lerner College of Business and Economics. Full-time matriculated students and professional and continuing studies students may apply to the Certificate program during the semester in which they will complete at least 28 credits and achieve sophomore status, and when the Certificate coursework can be completed prior to graduation. Admission will be limited to top students as measured by GPA. Students should consult the program’s website for application deadlines. Students must meet with their advisor prior to applying for the Certificate of Business Essentials to determine how these credits will be allocated toward their degree program. The application and allowable course substitutions are available on-line at: www.pcs.udel.edu/essentials/

Discovery-And Service-Based Learning Opportunities And Clinical Experiences in HRIM

As a professional, service-oriented department, Hotel, Restaurant and Institutional Management (HRIM) stresses opportunities for learning through experiences that require students to apply their academic training and encourage them to develop their newly acquired skills and knowledge. HRIM has a unique combination of facilities that provide a wide range of practical experience settings, and HRIM offers special programs that encourage personal and professional development.

The Courtyard Newark at the University of Delaware is operated by the Shaner Hotel Group and provides on-campus lodging for alumni, parents, guests and conference attendees. It also provides enhanced educational experiences in the Marriott Center for Hospitality and Tourism for students in the Department of Hotel, Restaurant and Institutional Management by offering opportunities to gain hundreds of hours of practical experience in a teaching and research laboratory located in a hotel setting. Students gain valuable experience in sales, marketing, revenue management, hotel engineering and housekeeping. For further information, call (302) 831-6077.

The Vita Nova/Foodservice Laboratory is part of the HRIM Department and is located on the second floor of the Trabant University Center. The laboratory consists of Vita Nova, a student-operated, 65-seat dining room open to the public; a display kitchen; the Copeland Vinotek wine cellar; the Darden Bistro; and a teaching and demonstration kitchen. Students in the HRIM program use the facility to understand the challenges and dynamics of operating a business. On a daily basis, students rotate through management and skill-level assignments to learn the details required to exceed guest expectations. For further information, call (302) 831-6077.

Accounting and Management Information Systems

Telephone: (302) 831-2961
http://www.lerner.udel.edu/departments/accounting-mis
Faculty Listing: http://www.lerner.udel.edu/faculty-staff/acctmis

The mission of the Department of Accounting and Management Information Systems (MIS) is to offer distinctive and innovative educational opportunities related to the professions of Accounting and MIS, promote scholarship in Accounting and MIS, and to advance successful leadership in a rapidly changing technological environment. The Department offers majors in Accounting and MIS, as well as minors in Global Enterprise Technologies (GET), MIS and Entrepreneurial Studies, to undergraduate students.

The Bachelor of Science for Accounting majors is designed to prepare students for an accounting career in industry, in government, or in public accounting. An Honors Degree option is available. During the first two years, the accounting major follows a format of courses that enables the student to acquire a broad liberal arts background. The accounting program is designed to provide flexibility in the selection of humanities and social and natural science courses from broad groupings to augment the professional development of the student. The undergraduate accounting major includes work in accounting information systems, intermediate, cost, income tax, advanced accounting, and auditing.

The program provides preparation for the Uniform Certified Public Accountant Examination, the Certificate in Management Accounting, and other professional certifications.

Candidates for a Bachelor of Science degree must: (1) earn a minimum of 120 credits, (2)
achieve a minimum cumulative GPA of C (2.0) on all work undertaken at the University of Delaware, (3) fulfill the course requirements of the degree program, and (4) achieve at least a C- in specified business, finance, economics, and accounting courses. Of the required upper division ACCT courses (ACCT 302, ACCT 315, ACCT 316, ACCT 327, ACCT 413, ACCT 415, ACCT 417, and ACCT 425), no more than two may be transferred from another AACSB institution.

The Department offers a 4 + 1, 150 credit combined, Bachelor’s and Master’s degree in Accounting. Please see the description in the Graduate Catalog.

The Management Information Systems major is designed to prepare students for careers that leverage information technology in a business environment, enabling graduates to use information systems to manage the organization. An Honors Degree option is available. During the first two years, the MIS major follows a format of courses that enables the student to acquire a broad liberal arts background. The MIS program is designed to provide flexibility in the selection of humanities and social and natural science courses from broad groupings to augment the professional development of the student. The undergraduate MIS major includes work in programming languages, databases, system analysis and design, business problem solving, and project management. MIS majors are also required to select a professional concentration in one discipline of business (Accounting, Economics, Finance, Management, Marketing or Operations Management) to promote a thorough understanding of the issues, needs, and practices of that area of business.

Students in the Lerner College of Business and Economics and students outside the Lerner College may take courses leading to the minors in Global Enterprise Technologies or Management Information Systems.

Telephone: (302) 831-2961
www.lerner.udel.edu/departments/accounting-mis/undergraduate/mis-minor

BACHELOR OF SCIENCE - ACCOUNTING

CURRICULUM CREDITS
UNIVERSITY REQUIREMENTS
ENGL 110 Critical Reading and Writing 3
(first minimum grade C-)

First Year Experience (FYE) 0-4

University Breadth Requirements 12

Discovery Learning Experience (DLE) 3

Multi-cultural Courses 3
Three credits in an approved course or courses stressing multi-cultural, ethnic, and/or gender-related course content.

MAJOR REQUIREMENTS

Additional credits from Creative Arts and Humanities and/or History and
Cultural Change: 6

Choose one of the following MATH combinations (Option I, II, or III): 6-12

Option I
MATH 221 Calculus I
MATH 230 Finite Mathematics with Applications

Option II
MATH 241 Analytic Geometry and Calculus A
MATH 230 Finite Mathematics with Applications

Option III
MATH 241 Analytic Geometry and Calculus A
MATH 242 Analytic Geometry and Calculus B
MATH 243 Analytic Geometry and Calculus C
MATH 201/MATH 202 Introduction to Statistics I and II 6

One of the following: 3
ENGL 301 Expository Writing
ENGL 302 Advanced Composition
ENGL 312 Written Communications in Business
ENGL 410 Technical Writing
COMM 212 Oral Communication in Business

Additional credits from Mathematics, Natural Sciences and Technology (except CISC, STAT and 100-level MATH courses): 6

ECON 151 Introduction to Microeconomics: Prices and Markets (minimum grade C-) 3
ECON 152 Introduction to Macroeconomics: National Economy (minimum grade C-) 3
BUAD 301 Introduction to Marketing (minimum grade C-) 3
BUAD 306 Operations Management
The Honors credits in the major will normally include ACCT 207 and ACCT 208. They may include required courses from other departments in the Alfred Lerner College of Business and Economics. An ACCT course taken at the 600-level will count for Honors credit.

**BACHELOR OF SCIENCE - MANAGEMENT INFORMATION SYSTEMS (MIS)**

**CURRICULUM CREDITS**

**UNIVERSITY REQUIREMENTS**

ENGL 110  Critical Reading and Writing 3  
(minimum grade C-)

First Year Experience (FYE) 0-4

University Breadth Requirement 12

Discovery Learning Experience (DLE) 3

Multi-cultural Course 3

Three credits in an approved course or courses stressing multi-cultural, ethnic, and/or gender-related course content.

**MAJOR REQUIREMENTS**

Twelve Humanities credits from: 12

Art History, History, English (except composition or similar course), Foreign Languages (up to 6 credits may be grammar courses), Philosophy, Music (except credit for participation in instrumental and/or choral organizations), Theatre (except performance), Comparative Literature, and literature courses in a foreign language. No more than nine credits may be taken in one department.

Six social and behavioral science credits from Anthropology, Psychology, or Sociology 6

ECON 151  Introduction to Microeconomics: Prices and Markets 3  
(minimum grade C-)

ECON 152  Introduction to Macroeconomics: National Economy 3  
(minimum grade C-)

COMM 212  Oral Communication in Business 3

MATH 221  Calculus I 3

MATH 230  Finite Mathematics with Applications 3

MATH 201/MATH 202  Introduction to Statistics I and II 6

In the following 5 required courses, a grade of C- or better must be earned in all but one:

ACCT 327  Cost Accounting 3

ACCT 413  Income Tax Accounting 3

ACCT 415  Advanced Accounting 3

ACCT 417  Auditing 3

ACCT 425  Strategic Information Systems and Accounting 3

Professional Electives

ACCT or FINC courses  
(at 300-level or higher) 6

See ACCT course descriptions for enrollment restrictions. (ACCT 352, may not apply).

**ELECTIVES**

In addition to required courses, sufficient credits must be taken to meet the minimum credits required for the degree. Elective courses should be chosen from outside the Alfred Lerner College of Business and Economics (with some exceptions and exclusions: see Department for specifics). No more than two credits of BHAN 120 may apply.

CREDITS TO TOTAL A MINIMUM OF 120

**HONORS BACHELOR OF SCIENCE - ACCOUNTING**

The recipient must complete:

- All requirements for the Bachelor of Science in Accounting.
- All of the University's generic requirements for the Honors Baccalaureate degree.
HONORS BACHELOR OF SCIENCE - MANAGEMENT INFORMATION SYSTEMS (MIS)

The recipient must complete:

- All requirements for the Bachelor of Science degree
- All of the University's generic requirements for Honor's Baccalaureate degree.

The Honors credits in the major will normally include MISY 160 and MISY 225. They may include required courses from other departments in the Alfred Lerner College of Business and Economics.

MINOR IN GLOBAL ENTERPRISE TECHNOLOGIES (GET)

GLOBAL ENTERPRISE TECHNOLOGIES MINOR

The Global Enterprise Technologies (GET) minor is designed to extend the education of undergraduate students in the use and deployment of large scale systems in global organizations to solve complex problems.

Applications for the minor are accepted on a rolling basis. Students must have completed 28 credits, have a minimum cumulative GPA of 2.75. Students from any major may apply by logging on to UDSIS and submitting a request for change of program plan. Students interested in the immersion option must apply to the minor no later than October prior to their immersion, and submit an application and be accepted by companies offering extended internships through the GET program.

REQUIRED PREREQUISITE FOR BOTH OPTIONS
MISY 160  Business Computing: Tools and Concepts (or equivalent course)  3

REQUIREMENTS for IMMERSION OPTION
Students must earn a grade of C or better in all of the following courses:

MISY 261  Business Information Systems 3
MISY 300  The Business Value of IT 3
MISY 330 or CISC 437

Database Design and Implementation 3
*MISY 370  Large IT Projects: Business and IT View 3
*MISY 375  GET Immersion Experience Internship 3
*MISY 420  Global IT Enabled Innovation and Change 3
*MISY 421  Global Business Communication 3

Total Credits  21

Six Credits chosen from:
Mathematics beyond Calculus I, Biological Sciences, Chemistry, Entomology, Geology, Physical Geography, Marine Studies, Physical Science, or Plant Science.

Minimum grade C- in all of these courses:
ACCT 207  Accounting I 3
ACCT 208  Accounting II 3
BUAD 301  Introduction to Marketing 3
BUAD 306  Operations Management 3
BUAD 309  Management and Organizational Behavior 3
CISC 250  Business Telecommunication Networks 3
FINC 311  Principles of Finance 3
MISY 160  Business Computing: Tools and Concepts 3
MISY 225  Intro to Programming Business Applications 3
MISY 330  Database Design and Implementation 3
MISY 350  Web Design 3
MISY 430  Systems Analysis and Implementation 3
MISY 431  MIS Project Management 3
MISY 432  MIS Projects 3

PROFESSIONAL CONCENTRATION  12
(Minimum grade of C- in all of these courses)
Twelve Credits from any one area of business.
Students must select ONE of the following disciplines: Accounting, Economics, Finance, Management, Marketing, or Operations Management, and complete 12 credits of 300 and/or 400 level courses in that ONE discipline and approved by the student's academic advisor.

MIS ELECTIVES  9
(minimum grade C- in all of these courses)
MISY courses 300-level or above (excluding MISY courses listed above) and CISC courses 300-level or above and approved by the student's academic advisor.

ELECTIVES
In addition to the required courses, sufficient credits must be taken to meet the minimum credits required for the degree. Elective courses should be taken outside of the Lerner College of Business & Economics (with some exceptions and exclusions; see Department for specifics).
No more than two credits of BHAN 120 may apply.

CREDITS TO TOTAL A MINIMUM OF  120
Business Administration

MISY 160  Business Computing: Tools and Concepts  3
MISY 225  Intro to Programming  Business Applications  3
MISY 330  Database Design and Implementation  3
MISY 430  Systems Analysis and Implementation  3
MISY 431  MIS Project Management  3
MISY 432  MIS Projects  3

All substitutions must be approved in writing by the MIS Project Coordinator PRIOR to taking ANY MISY course.

Professional education in business administration serves to develop the capabilities of students so that they may assume positions of leadership and responsibility at all levels of management in our society.

Students pursuing a program of study leading to the degree of Bachelor of Science within the Department of Business Administration must select one of five majors: international business studies, management, marketing, sport management, or operations management. Honors Degree options are available in all the majors. Students may apply to the minors in management information systems, economics, or a variety of other fields. Minors in advertising, international business/international business with language are available for students majoring in marketing, management, operations management, MIS, accounting, or finance. Minors in business administration and international business studies are also available to students majoring in other fields.

Each candidate for a degree must: (1) earn a minimum of 121 credits (122 credits for sport management majors, 126 credits for international business studies majors), (2) achieve a minimum cumulative GPA of C (2.0) on all work undertaken at the University of Delaware, (3) fulfill the course requirements of the degree program, and (4) achieve at least a C- in specified business, finance, accounting, math and economics courses. Students seeking a Bachelor of Science Degree in any major within the Department of Business Administration may take only one of the four required upper-level courses in their major at another institution.
BACHELOR OF SCIENCE - INTERNATIONAL BUSINESS STUDIES

International Business Studies focuses on in-depth study of a region of the world with heavy emphasis on advanced language skills and international studies to accompany a strong curriculum of business and international business courses. Along with the requirements below, all International Business Studies majors must complete a fall or spring semester abroad studying in a region of the world consistent with their language of choice.

University Requirements
ENGL 110 (minimum grade C-) 3
BUAD 110, First Year Experience (FYE), (minimum grade C-) 3
Discovery Learning Experience (DLE) 3
Multicultural course 3
University Breadth Requirements
Creative Arts and Humanities (minimum grade C-) 3
History and Cultural Change (minimum grade C-) 3
Social and Behavioral Sciences (minimum grade C-) 3
Mathematics, Natural Sciences, and Technology (minimum grade C-) 3
These four courses must be chosen from four different departments.

Some of the university requirements may be met by the major requirements listed below. The student should consult with their advisor for clarification.

Major Requirements
Social and Behavioral Sciences 6
A PSYC and a SOCI course are required. See the undergraduate catalog at www.udel.edu/catalog for the specific list of PSYC and SOCI course options.

Region Studies Courses: courses related to a region of the world consistent with the student’s language of choice, selected from the following:
Art History, Foreign Language and Literature, History, and Philosophy 6

Anthropology, Geography, Political Science and International Relations 6
Mathematics, Natural Sciences, and Technology 7
See the undergraduate catalog at www.udel.edu/catalog for the specific list of courses (Note: STAT, MATH, and CISC courses may NOT apply). This requirement includes one associated laboratory credit.

Fifteen credits from:
Foreign Languages and Literatures (Five courses in the language of choice, Chinese, French, German, Italian, Japanese, or Spanish at the 200-level and above. Of these five courses at least two must be at the 300-level and one is recommended to be a business language course, depending upon the language of choice. All International Business Studies majors must complete a fall or spring semester abroad studying in a region of the world consistent with their language of choice.)

MATH 221 Calculus I (minimum grade C-) 3
MATH 201/MATH 202 Introduction to Statistics I and II (minimum grade C-) 6
COMM 212 Oral Communication in Business 3
ECON 151 Introduction to Microeconomics: Prices and Markets (minimum grade C-) 3
ECON 152 Introduction to Macroeconomics: National Economy (minimum grade C-) 3
ACCT 207 Accounting I (minimum grade C-) 3
ACCT 208 Accounting II (minimum grade C-) 3
ACCT 352 Law and Social Issues in Business 3
MISY 160 Business Computing: Tools and Concepts 3
MISY 261 Introduction to Business Information Systems 3
FINC 311 Principles of Finance (minimum grade C-) 3

Only one of the following will count toward graduation:
MISY 261 Introduction to Business Information Systems
or
ACCT 302 Accounting Information Systems

Students must earn a grade of C- or better in all the following courses:
BUAD 301 Introduction to Marketing 3
**BACHELOR OF SCIENCE - MANAGEMENT**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUAD 306</td>
<td>Operations Management</td>
<td>3</td>
</tr>
<tr>
<td>BUAD 309</td>
<td>Management and Organizational Behavior</td>
<td>3</td>
</tr>
<tr>
<td>BUAD 384</td>
<td>Global Business Environment</td>
<td>3</td>
</tr>
<tr>
<td>BUAD 386</td>
<td>International Business Management</td>
<td>3</td>
</tr>
<tr>
<td>BUAD 441</td>
<td>Strategic Management</td>
<td>3</td>
</tr>
<tr>
<td>BUAD 475</td>
<td>International Marketing</td>
<td>3</td>
</tr>
<tr>
<td>ECON 340</td>
<td>International Economics</td>
<td>3</td>
</tr>
<tr>
<td>FINC 415</td>
<td>International Finance</td>
<td>3</td>
</tr>
</tbody>
</table>

One Information Technology related course from the following: (minimum grade C-)
- MISY 427 Management of Information Systems
- BUAD 477 IT Applications in Marketing

Professional Electives
- ACCT, BUAD, ENTR, FINC, or MISY courses (at the 300-level or higher) 6

**ELECTIVES**
After required courses are completed, sufficient credits must be taken to meet the minimum credits required for the degree. These credits may be 100-level language courses. Elective courses should be chosen from outside the Alfred Lerner College of Business and Economics, and no more than two credits can be from BHAN120.

**CREDITS TO TOTAL A MINIMUM OF** 126

**HONORS BACHELOR OF SCIENCE: INTERNATIONAL BUSINESS STUDIES**

The recipient must complete:

- All requirements for the Bachelor of Science degree.
- All of the University's generic requirements for the Honors Baccalaureate degree.

The Honors credits in the major must include six credits of BUAD and/or FINC courses and six credits of the chosen language (CHIN, FREN, GRMN, ITAL, JAPN, or SPAN).

**BACHELOR OF SCIENCE - MANAGEMENT**

Managers are essential to every organization because they work with people to make and implement decisions that move organizations forward. The Management major prepares students to be productive and insightful managers. It enhances students’ leadership, communication, and analytical skills; provides strategies and models for solving problems ethically and effectively; and equips students to become managers who can make things happen in a dynamic global economy.

**University Requirements**
- ENGL 110 (minimum grade C-) 3
- BUAD 110, First Year Experience (FYE) (minimum grade C-) 3
- Discovery Learning Experience (DLE) 3
- Multicultural course 3

**University Breadth Requirements**
- Creative Arts and Humanities (minimum grade C-) 3
- History and Cultural Change (minimum grade C-) 3
- Social and Behavioral Sciences (minimum grade C-) 3
- Mathematics, Natural Sciences, and Technology (minimum grade C-) 3

These four courses must be chosen from four different departments.

**Major Requirements**
- Additional credits from Creative Arts and Humanities, History and Cultural Change, and/or foreign language instruction 6
- Additional credits from the Social and Behavioral Sciences 12
- PSYC 100 and a SOCI course are required. See the undergraduate catalog at www.udel.edu/catalog for the specific list of SOCI and additional course options. No more than six credits may be taken in the same department.

**Additional credits of Mathematics, Natural Sciences, and Technology** 7
See the undergraduate catalog at www.udel.edu/catalog for the specific list of courses (Note: STAT, MATH, and CISC courses may NOT apply). This requirement includes one associated laboratory credit.

- MATH 221 Calculus I (minimum grade C-) 3
- MATH 201/MATH 202 Introduction to Statistics I and II (minimum grade C-) 6
- COMM 212 Oral Communication in Business 3
- ECON 151 Introduction to Microeconomics: Prices and Markets (minimum grade C-) 3
- ECON 152 Introduction to Macroeconomics: National Economy (minimum grade C-) 3
ACCT 207 Accounting I (minimum grade C-) 3
ACCT 208 Accounting II (minimum grade C-) 3
ACCT 352 Law and Social Issues in Business 3
FINC 311 Principles of Finance (minimum grade C-) 3
MISY 160 Business Computing: Tools and Concepts 3
MISY 261 Introduction to Business Information Systems 3

Only one of the following will count toward graduation:
MISY 261 or ACCT 302

Students must earn a grade of C- or better in all of the following courses:
BUAD 301 Introduction to Marketing 3
BUAD 306 Operations Management 3
BUAD 309 Management and Organizational Behavior 3
BUAD 421 Human Resource Management 3
BUAD 422 Designing Effective Organizations 3
BUAD 441 Strategic Management 3

Three of the following seven courses: (minimum grade C- in each course)
BUAD 384 Global Business Environment 3
BUAD 386 International Business Management 3
BUAD 420 Labor Relations 3
BUAD 423 Negotiation and Conflict Resolution 3
BUAD 424 Ethics in the Workplace 3
BUAD 425 Current Issues in Global Management 3
BUAD 429 Selected Topics in Management 3
BUAD 444 Small Business Management 3

One Information Technology related course from the following: (minimum grade C-)
MISY 427 Management of Information Systems 3

One of the following International theme courses: 3
ACCT 395 Seminar: International Accounting
ACCT 483 Introduction to International Accounting
BUAD 383 Seminar on International Business
BUAD 384 Global Business Environment
BUAD 386 International Business Management
BUAD 391 Seminar on International Management
BUAD 393 Seminar on International Marketing Management

BUAD 394 Seminar on International Operations Management 3
BUAD 425 Current Issues in Global Business 3
BUAD 475 International Marketing 3
ECON 311 Economics of Developing Countries 3
ECON 340 International Economics 3
ECON 441 International Trade 3
ECON 443 International Monetary Economics 3
FINC 392 Seminar on International Financial Management 3
FINC 415 International Finance 3
MISY 395 Global Issues in Information Technology 3

Professional Electives
ACCT, BUAD, ENTR, FINC, or MISY courses (at the 300-level or higher) 3

ELECTIVES
After required courses are completed, sufficient credits must be taken to meet the minimum credits required for the degree. Elective courses should be chosen from outside the Alfred Lerner College of Business and Economics, and no more than two credits can be from BHAN 120.

CREDITS TO TOTAL A MINIMUM OF 121

BACHELOR OF SCIENCE - MARKETING

Marketing majors learn how to gather information regarding consumers’ needs and wants and use this information to make strategic decisions regarding goods or services, pricing, promotion and distribution. The goal of marketing is to create, build and maintain mutually beneficial exchanges with consumers and/or businesses to achieve organizational objectives.

UNIVERSITY REQUIREMENTS

ENGL 110 (minimum grade C-) 3
BUAD 110, First Year Experience (FYE), (minimum grade C-) 3
Discovery Learning Experience (DLE) 3
Multicultural course 3
University Breadth Requirements
Creative Arts and Humanities (minimum grade C-) 3
History and Cultural Change (minimum grade C-) 3
Social and Behavioral Sciences (minimum grade C-) 3
Mathematics, Natural Sciences, and Technology (minimum grade C-) 3

These four courses must be chosen from four different departments.
### Major Requirements

**BUAD 477**  
Information Technology Applications in Marketing  
3

**BUAD 479**  
Marketing Strategy for the Firm  
3

Three of the following courses:  
(minimum grade C- in each course)  
(must include either BUAD 471 or BUAD 473)

- **BUAD 470**  
Sales Management and Selling  
3

- **BUAD 471**  
Advertising Management  
3

- **BUAD 472**  
Marketing, Society and Environment  
3

- **BUAD 473**  
Buyer Behavior  
3

- **BUAD 474**  
Marketing Channels and Retailing  
3

- **BUAD 475**  
International Marketing  
3

- **BUAD 478**  
Field Projects in Marketing  
3

One of the following International theme courses:  
3

- **ACCT 395**  
Seminar: International Accounting  
3

- **ACCT 483**  
Introduction to International Accounting  
3

- **BUAD 383**  
Seminar on International Business  
3

- **BUAD 384**  
Global Business Environment  
3

- **BUAD 386**  
International Business Management  
3

- **BUAD 391**  
Seminar on International Management  
3

- **BUAD 393**  
Seminar on International Marketing Management  
3

- **BUAD 394**  
Seminar on International Operations Management  
3

- **BUAD 425**  
Current Issues in Global Business  
3

- **BUAD 475**  
International Marketing  
3

- **ECON 311**  
Economics of Developing Countries  
3

- **ECON 340**  
International Economics  
3

- **ECON 441**  
International Trade  
3

- **ECON 443**  
International Monetary Economics  
3

- **FINC 311**  
Principles of Finance  
3

- **FINC 392**  
Seminar on International Financial Management  
3

- **FINC 415**  
International Finance  
3

- **MISY 160**  
Business Computing: Tools and Concepts  
3

- **MISY 261**  
Introduction to Business Information Systems  
3

- **MISY 395**  
Global Issues in Information Technology  
3

Only one of the following will count toward graduation:  
MISY 261 or ACCT 302

Students must earn a grade of C- or better in all of the following courses:

- **BUAD 301**  
Introduction to Marketing  
3

- **BUAD 302**  
Marketing Research  
3

- **BUAD 306**  
Operations Management  
3

- **BUAD 309**  
Management and Organizational Behavior  
3

- **BUAD 441**  
Strategic Management  
3

### Professional Electives

ACCT, BUAD, ENTR, FINC, or MISY courses  
(at the 300-level or higher)  
3

### ELECTIVES

After required courses are completed, sufficient credits must be taken to meet the minimum credits required for the degree. Elective courses should be chosen from outside the Alfred Lerner College of Business and Economics, and no more than two credits can be from BHAN 120.

**CREDITS TO TOTAL A MINIMUM OF 121**
The Operations Management (OM) Major focuses on the process by which a firm produces a product or provides a service. OM majors are concerned with addressing questions such as, how much of a product should be produced? What is the most efficient way to produce that amount of product or that level of service? OM is all about the transformation of raw materials, labor and capital into final products and/or services. The OM major prepares students to be effective problem solvers by increasing their ability to analyze and interpret quantitative information that they then can use to make solid business decisions.

University Requirements

ENGL 110 (minimum grade C-) 3
BUAD 110, First Year Experience (FYE) (minimum grade C-) 3
Discovery Learning Experience (DLE) 3
Multicultural Course 3

University Breadth Requirements
Creative Arts and Humanities (minimum grade C-) 3
History and Cultural Change (minimum grade C-) 3
Social and Behavioral Sciences (minimum grade C-) 3
Mathematics, Natural Sciences, and Technology (minimum grade C-) 3

These four courses must be chosen from four different departments.

Major Requirements

Additional credits from Creative Arts and Humanities, History and Cultural Change, and/or foreign language instruction 6

Additional credits from the Social and Behavioral Sciences 12
PSYC 100 and a SOCI course are required. See the undergraduate catalog at www.udel.edu/catalog for the specific list of SOCI and additional course options. No more than six credits may be taken in the same department.

Additional credits of Mathematics, Natural Sciences, and Technology 7
See the undergraduate catalog at www.udel.edu/catalog for the specific list of courses (Note: STAT, MATH, and CISC courses may NOT apply). This requirement includes one associated laboratory credit.
BUAD 425 Current Issues in Global Business
BUAD 475 International Marketing
ECON 311 Economics of Developing Countries
ECON 340 International Economics
ECON 441 International Trade
ECON 443 International Monetary Economics
FINC 392 Seminar on International Financial Management
FINC 415 International Finance
MISY 395 Global Issues in Information Technology

Professional Electives
ACCT, BUAD, ENTR, FINC, or MISY courses (at the 300-level or higher) 6

ELECTIVES
After required courses are completed, sufficient credits must be taken to meet the minimum credits required for the degree. Elective courses should be chosen from outside the Alfred Lerner College of Business and Economics, and no more than two credits can be from BHAN 120.

CREDITS TO TOTAL A MINIMUM OF 121

HONORS BACHELOR OF SCIENCE: MANAGEMENT, MARKETING, OR OPERATIONS MANAGEMENT

The recipient must complete:

All requirements for the Bachelor of Science (any major).
All of the University's generic requirements for the Honors Baccalaureate degree.

The Honors credits in the major must include at least six credits of BUAD and/or FINC courses. They may include required courses from other departments in the Alfred Lerner College of Business and Economics.

BACHELOR OF SCIENCE - SPORT MANAGEMENT

The sport management program prepares students for career opportunities in the sport industry. The majority of those opportunities are in the areas of sales and marketing, leadership and management, finance, and operations. The sport management curriculum is grounded in business theory, with core courses similar to other majors in business, while still offering courses focused on sport management.

University Requirements
ENGL 110 (minimum grade C-) 3

BUAD, First Year Experience (FYE), (minimum grade C-) 3
Discovery Learning Experience (DLE) 3
Multicultural course 3
University Breadth Requirements
Creative Arts and Humanities (minimum grade C-) 3
History and Cultural Change (minimum grade C-) 3
Social and Behavioral Sciences (minimum grade C-) 3
Mathematics, Natural Sciences, and Technology (minimum grade C-) 3

These four courses must be chosen from four different departments.

Major Requirements

Additional credits from Creative Arts and Humanities, History and Cultural Change, and/or foreign language instruction 3

Additional credits from the Social and Behavioral Sciences 9
PSYC 100 and a SOCI course are required. See the undergraduate catalog at www.udel.edu/catalog for the specific list of SOCI and additional course options. No more than six credits may be taken in the same department.

Additional credits of Mathematics, Natural Sciences, and Technology 7
See the undergraduate catalog at www.udel.edu/catalog for the specific list of courses (Note: STAT, MATH, and CISC courses may NOT apply). This requirement includes one associated laboratory credit.
ACCT 207* Accounting I 3
ACCT 208* Accounting II 3
BUAD 301* Introduction to Marketing 3
BUAD 306* Operations Management 3
BUAD 309* Management and Organizational Behavior 3
BUAD 441* Strategic Management 3
COMM 212 Oral Communications in Business 3
ECON 151* Introduction to Microeconomics: Prices and Markets 3
ECON 152* Introduction to Macroeconomics: The National Economy 3
FINC 311* Principles of Finance 3
MATH 201* Introduction to Statistical Methods I 3
MATH 202* Introduction to Statistical Methods II 3
MATH 221* Calculus I 3

BACHELOR OF SCIENCE - SPORT MANAGEMENT

The sport management program prepares students for career opportunities in the sport industry. The majority of those opportunities are in the areas of sales and marketing, leadership and management, finance, and operations. The sport management curriculum is grounded in business theory, with core courses similar to other majors in business, while still offering courses focused on sport management.

University Requirements
ENGL 110 (minimum grade C-) 3
MISY 261  Business Information Systems  3
Only one of the following will count toward graduation:
MISY 261 or ACCT 302

* Courses with an asterisk require a minimum grade of C-

Courses in Major:
BUAD 210*  Foundations of Sport Management  3
BUAD 311  Practicum in Sport Management  1
BUAD 314*  Financial Aspects of Sport Management  3
BUAD 315*  Legal Aspects of Sport Management  3
BUAD 416*  International Sport Management  3
BUAD 417*  Sport Marketing  3
BUAD 419*  Ethics and Issues in Sport Management  3
BUAD 464  Internship  9
BUAD elective  3

* Courses with an asterisk require a minimum grade of C-

In addition to required courses, sufficient credits must be taken to meet the minimum credits required for the degree. Elective courses should be chosen from outside the Alfred Lerner College of Business and Economics. For Economics, International Business, or Management Information/Decision Support Systems minors only, six credits from the Alfred Lerner College of Business and Economics may be applied to the elective category. No more than two credits can be from BHAN 120.

CREDITS TO TOTAL A MINIMUM OF 122

MINOR IN ADVERTISING

The minor in advertising is designed to give students from any major an increased understanding of the concepts of marketing, economics, mass communication, and public relations, as well as the strategies and tactics of advertising management. In addition, students will gain familiarity with the rapidly changing digital media landscape and examine some of the social and cultural issues inherent in the new media and technologies. The minor is awarded only to students who have applied and been admitted to the program. Admission will be based on the availability of seats and the GPA of the student; a minimum cumulative GPA of 2.7 will be required for consideration. Students must have completed 28 credits at the University of Delaware prior to application. Applications are reviewed each September and February. The credits required for the minor may also be used to meet other distribution requirements, such as degree breadth requirements and professional electives. Also, students with a minor in Business Administration qualify to apply for the minor.

Majors outside the Lerner College of Business & Economics must earn a grade of C- or better in all the following courses:

Marketing and Economics Courses:
BUAD 301  Introduction to Marketing  3
BUAD 471  Advertising Management  3
BUAD 473  Buyer Behavior  3

ECON 100  Economic Issues and Policies  3
or
ECON 152  Introduction to Microeconomics: The National Economy  3

Art Course:
ART 204  Media/Design/Culture  3

Communication Courses:  6
Six credits from:
COMM 245  Mass Communication and Culture  3
COMM 309  Introduction to Public Relations  3
COMM 313  Communication Principles in Advertising  3
COMM 325  Studio Television Production  3
COMM 486  Multimedia Literacy  3

Total Credits:  21

Majors in the Lerner College of Business & Economics must earn a grade of C- or better in all the following courses:

Marketing Courses:
BUAD 301  Introduction to Marketing  3
BUAD 471  Advertising Management  3
BUAD 473  Buyer Behavior  3

Art Course:
ART 204  Media/Design/Culture  3

Communication Courses:
COMM 245  Mass Communication and Culture  3
COMM 486  Multimedia Literacy  3

Three credits from:
COMM 309  Introduction to Public Relations  3
COMM 313  Communication Principles in Advertising  3
COMM 325  Studio Television Production  3

Total Credits  21
MINOR IN BUSINESS ADMINISTRATION

The minor in Business Administration provides students in degree programs in Economics and those outside the Lerner College of Business and Economics with an opportunity to acquaint themselves with the basic concepts of business administration. Completion of the requirements for the minor provides a basic understanding of the language and major functional areas of business. The minor is awarded only to students who have applied and been admitted to the program. Admission will be based on the availability of seats and the GPA of the student; a minimum cumulative GPA of 2.7 will be required for consideration. Students must have completed 28 credits at the University of Delaware prior to application. Applications are reviewed each September and February. The credits required for the minor may also be used to meet other distribution requirements, such as degree breadth requirements and professional electives. Students seeking a minor in Business Administration may only take one of the required Business or Finance courses at another AACSB institution.

Majors outside the Lerner College of Business and Economics must earn a grade of C- or better in all the following courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 200</td>
<td>Survey of Accounting</td>
<td>4</td>
</tr>
<tr>
<td>BUAD 301</td>
<td>Introduction to Marketing</td>
<td>3</td>
</tr>
<tr>
<td>BUAD 306</td>
<td>Operations Management</td>
<td>3</td>
</tr>
<tr>
<td>BUAD 309</td>
<td>Management and Organizational Behavior</td>
<td>3</td>
</tr>
<tr>
<td>ECON 100</td>
<td>Economic Issues and Policies</td>
<td>3</td>
</tr>
<tr>
<td>FINC 200</td>
<td>Fundamentals of Finance</td>
<td>3</td>
</tr>
<tr>
<td>MATH 201</td>
<td>Introduction to Statistical Methods I</td>
<td>3</td>
</tr>
</tbody>
</table>

CREDITS TO TOTAL A MINIMUM OF 22

Majors in the Economics degree program must earn a grade of C- or better in all the following courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 207</td>
<td>Accounting I</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 208</td>
<td>Accounting II</td>
<td>3</td>
</tr>
<tr>
<td>BUAD 301</td>
<td>Introduction to Marketing</td>
<td>3</td>
</tr>
<tr>
<td>BUAD 306</td>
<td>Operations Management</td>
<td>3</td>
</tr>
<tr>
<td>BUAD 309</td>
<td>Management and Organizational Behavior</td>
<td>3</td>
</tr>
<tr>
<td>FINC 311</td>
<td>Fundamentals of Finance</td>
<td>3</td>
</tr>
</tbody>
</table>

CREDITS TO TOTAL A MINIMUM OF 18

MINOR IN INTERNATIONAL BUSINESS/
MINOR IN INTERNATIONAL BUSINESS WITH LANGUAGE

The minor in international business is designed to give increased understanding of the important international dimension of business to students with a major in accounting, finance, hotel, restaurant, and institutional management, management, management information systems, marketing, operations management or sport management. The minor is awarded only to students who have applied and been admitted to the program. Admission will be based on the availability of seats and the GPA of the student; a minimum cumulative GPA of 2.7 will be required for consideration. Students must have completed 28 credits at the University of Delaware prior to application. Applications are reviewed each September and February. The 18 credits required for the minor may also be used to meet other distribution requirements, such as the University Discovery Learning Experience, degree breadth requirements, and professional electives. Also, students with a minor in business administration qualify to apply for the minor. Students electing the International Business minor are encouraged to incorporate a short-term study abroad program into their course of study.

International Business and Economics Courses:

9

Nine credits must be passed with a minimum grade of C- from the following courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 395</td>
<td>Seminar International Accounting</td>
<td></td>
</tr>
<tr>
<td>BUAD 384</td>
<td>Global Business Environment</td>
<td></td>
</tr>
<tr>
<td>BUAD 386</td>
<td>International Business Management</td>
<td></td>
</tr>
<tr>
<td>BUAD 391</td>
<td>Seminar on International Business</td>
<td></td>
</tr>
<tr>
<td>BUAD 393</td>
<td>Seminar on International Management</td>
<td></td>
</tr>
<tr>
<td>BUAD 394</td>
<td>Seminar on International Operations Management</td>
<td></td>
</tr>
<tr>
<td>BUAD 425</td>
<td>Current Issues in Global Management</td>
<td></td>
</tr>
<tr>
<td>BUAD 475</td>
<td>International Marketing</td>
<td></td>
</tr>
<tr>
<td>ECON 340</td>
<td>International Economic Relations</td>
<td></td>
</tr>
<tr>
<td>FINC 392</td>
<td>Seminar on International Financial Management</td>
<td></td>
</tr>
<tr>
<td>FINC 415</td>
<td>Finance Seminar: International Finance</td>
<td></td>
</tr>
</tbody>
</table>

ACCT 395, BUAD 384, BUAD 391, BUAD 393 and BUAD 394, and FINC 392 are taught abroad.

Students seeking a minor in International Business may take only one of the required
Alfred Lerner College of Business and Economics courses at another institution unless advance permission is granted for credit earned in
taught in the language of choice count toward the minor. The 21 credits required for the minor may also be used to meet other distribution requirements.

Students must earn a grade of C- or better in all courses taken for the minor.

Required Courses:

Core Business Courses 6 Credits
BUAD 100 Introduction to Business 3
One of the following: 3
ECON 152 Introduction to Macroeconomics: The National Economy or
FINC 200 Fundamentals of Finance
(Students taking ECON 152 are required to take ECON 151 as a prerequisite.)

International Business Courses 9 Credits
BUAD 384 Global Business Environment 3
BUAD 386 International Business Management 3
One of the following: 3
BUAD 425 Current Issues in Global Business
BUAD 475 International Marketing
ECON 340 International Economics
FINC 415 International Finance
(Students taking FINC 415 are required to take ECON 302 as a prerequisite.)

Foreign Language Courses 6
Foreign Languages and Literatures (Two courses at the 200-level or above, taught in the language of choice: Arabic, Chinese, French, German, Italian, Japanese, Russian, or Spanish.)

MINOR IN INTERNATIONAL BUSINESS STUDIES

The minor in International Business Studies is designed for students who may be interested in language and business, but who are not majoring in a business area. The minor is restricted to students pursuing a major in Economics or any major outside the Lerner College of Business and Economics. Other Lerner College students who desire an international business minor must pursue the Minor in International Business or Minor in International Business with Language options. Admission will be based on the availability of seats and the GPA of the student; a minimum cumulative GPA of 2.7 will be required for consideration. Students must have completed 28 credits at the University of Delaware prior to application. Applications are reviewed each September and February. Students electing the International Business Studies minor are encouraged to incorporate a short-term study abroad program into their courses of study, especially a Foreign Languages and Literatures trip to a country that uses the student's target language; however, only courses taught in the language of choice count toward the minor. The 21 credits required for the minor may also be used to meet other distribution requirements.

Students must earn a grade of C- or better in all courses taken for the minor.

Required Courses:

International Business Courses 9 Credits
BUAD 384 Global Business Environment 3
BUAD 386 International Business Management 3
One of the following: 3
BUAD 425 Current Issues in Global Business
BUAD 475 International Marketing
ECON 340 International Economics
FINC 415 International Finance
(Students taking FINC 415 are required to take ECON 302 as a prerequisite.)

Foreign Language Courses 6
Foreign Languages and Literatures (Two courses at the 200-level or above, taught in the language of choice: Arabic, Chinese, French, German, Italian, Japanese, Russian, or Spanish.)

CREDITS TO TOTAL A MINIMUM OF 21

Economics
Telephone: (302) 831-2565
http://www.lerner.udel.edu/economics
Faculty Listing:
http://www.lerner.udel.edu/faculty-staff/economics

Economists study how markets work in order to determine what is produced, how it is produced, and how income is distributed. Among the many topics studied in economics are such things as the role and impact of international trade, the impact of monopoly on the economy, and the problems of unemployment and inflation. An understanding of economic principles is critical to success in business and to the design of effective government policy.

The Department of Economics offers a Bachelor of Science and a Bachelor of Arts degree in Economics and a Bachelor of Arts degree in
Economics Education. In addition, a B.S. degree in Economics and Mathematics is available through the Department of Mathematics in the College of Arts and Sciences. A minor in Economics is also available.

Honors degree options are available for all programs. Optional concentrations in Applied Economics and in Economic Theory and Econometrics are available to students in all programs. Students may also declare interdepartmental majors. Requirements for all programs are listed below.

APPLICATION FOR MAJOR

Any University student who is not an Economics major but wishes to become one must apply for admission into the major. Applications may be submitted online through the student's UDSIS account. The principal criteria for acceptance are academic achievement, particularly in Economics courses, and potential for academic success in Economics. Students seeking admission to an Economics degree program must complete at least 28 credit hours at the University of Delaware, including ECON 151 and ECON 152, (each with a grade of C- or better) prior to submitting an application. In addition, students applying for the B.S. degree must complete either MATH 221 or MATH 241 with a grade of C- or better.

BACHELOR OF SCIENCE - ECONOMICS

UNIVERSITY REQUIREMENTS
ENGL 110 Critical Reading and Writing 3
(minimum grade C-)

First Year Experience (FYE) 0-4

University Breadth Requirement 12

Discovery Learning Experience (DLE) 3

Multi-cultural Courses 3

Three credits in an approved course or courses stressing multi-cultural, ethnic, and/or gender-related course content

MAJOR REQUIREMENTS
Second Writing Requirement: (minimum grade C-) 3
A writing course involving significant writing experience including two papers with a combined minimum of 3,000 words to be submitted for extended faculty critique of both composition and content. This course must be taken after completion of 60 credit hours. See second writing courses.

One of the following: (minimum grade C-) 3-4
MATH 221 Calculus I
or
MATH 241 Analytic Geometry and Calculus A

Quantitative Proficiency Requirement: (minimum grade C-) 9
An additional nine credits of course work in the quantitative area. At least three credits in addition to MATH 221 or MATH 241 must be taken in Mathematics at or above the 200-level except MATH 201, MATH 202, MATH 205, MATH 250, MATH 251, MATH 252, and MATH 253. The remaining six credits may be chosen from other Mathematics courses at or above the 200-level (except MATH 201, MATH 202, MATH 205, MATH 250, MATH 251, MATH 252, and MATH 253), ACCT 208, Statistics and Computer Science courses at or above the 300-level, BUAD 306, BUAD 346, and BUAD 446, MISY 261, MISY 430, and MISY 431, and ECON 415, ECON 422, ECON 423, and ECON 426. A maximum of one economics course may be used to satisfy this requirement while simultaneously being used to satisfy Economics course requirements.

BREADTH REQUIREMENTS (See Description)
Creative Arts and Humanities 9
Nine credits representing at least two areas.
History and Cultural Change 9
Nine credits representing at least two areas.
Social and Behavioral Sciences 3
Cannot be satisfied by an Economics course.
Mathematics, Natural Sciences and Technology 4
This course must have an associated laboratory.

MATH 201/MATH 202
Introduction to Statistics I and II: (minimum grade C-) 6

Related Work Requirement 9
Nine credits chosen from any 300-level or higher courses in Accounting, Anthropology, Business Administration, Computer Science, Finance, Geography, History, Mathematics, Philosophy, Political Science, Psychology, Sociology, and Statistics. Also acceptable are ACCT 207, ACCT 208, any 200-level Mathematics course except MATH 201, MATH 202, MATH 205, MATH 250, MATH 251, MATH 252, and MATH 253, and any MISY courses. Courses used to satisfy the Related Work Requirement may not be used to fulfill the quantitative proficiency requirement.
combined minimum of 3,000 words to be submitted for extended faculty critique of both composition and content. This course must be taken after completion of 60 credit hours. See approved second writing courses.

Language Requirement

3-4
Completion of the intermediate-level course (107 or 112) in a given foreign language. Students with four or more years of high school work in a single foreign language may attempt to fulfill the requirement in that language by taking an exemption examination 3-4.

One of the following: (minimum grade C-) 3-4
MATH 114 College Mathematics and Statistics
(for students who do not intend to continue the study of mathematics)
MATH 115 Pre-Calculus
(for students who intend to continue the study of mathematics)
MATH 221 Calculus I
MATH 241 Analytic Geometry and Calculus A

BREADTH REQUIREMENTS (See Description)
Creative Arts and Humanities 9
History and Cultural Change 9
Social and Behavioral Sciences 3
Cannot be satisfied by an Economics course.
Mathematics, Natural Sciences and Technology 7
At least one course must have an associated laboratory.

CREDITS TO TOTAL A MINIMUM OF 120

BACHELOR OF ARTS - ECONOMICS

UNIVERSITY REQUIREMENTS

ENGL 110 Critical Reading and Writing 3 (minimum grade C-)
First Year Experience (FYE) 0-4
University Breadth Requirement 12
Discovery Learning Experience (DLE) 3
Multi-cultural Courses 3
Three credits in an approved course or courses stressing multi-cultural, ethnic, and/or gender-related course content

MAJOR REQUIREMENTS
Second Writing Requirement:
(minimum grade C-) 3
A writing course involving significant writing experience including two papers with a

ECON 151 Introduction to Microeconomics: Prices and Markets (minimum grade C-) 3
ECON 152 Introduction to Macroeconomics: National Economy (minimum grade C-) 3
ECON 301 Quantitative Microeconomic Theory (minimum grade C-) 3
ECON 303 Intermediate Macroeconomic Theory (minimum grade C-) 3

Six additional Economics courses at or above the 300 level, at least two of which are at or above the 400-level. At least one of the 400 level Economics electives must be chosen from courses other than ECON 415, ECON 422, or ECON 423: (minimum grade C-) 18

Credit will not be allowed for both courses of any of the following sets of corresponding courses:
ECON 251, ECON 300, and ECON 301; ECON 332 and ECON 433, ECON 344 and ECON 444; ECON 360 and ECON 463, ECON 381 and ECON 483, and ECON 390 and ECON 490.

ELECTIVES
After required courses are completed, sufficient credits must be taken to meet the minimum credits required for the degree. No more than three credits can be from HESC/BHAN 120.

BACHELOR OF ARTS - ECONOMICS

UNIVERSITY REQUIREMENTS

ENGL 110 Critical Reading and Writing 3 (minimum grade C-)
First Year Experience (FYE) 0-4
University Breadth Requirement 12
Discovery Learning Experience (DLE) 3
Multi-cultural Courses 3
Three credits in an approved course or courses stressing multi-cultural, ethnic, and/or gender-related course content

MAJOR REQUIREMENTS
Second Writing Requirement:
(minimum grade C-) 3
A writing course involving significant writing experience including two papers with a combined minimum of 3,000 words to be submitted for extended faculty critique of both composition and content. This course must be taken after completion of 60 credit hours. See approved second writing courses.

Language Requirement

3-4
Completion of the intermediate-level course (107 or 112) in a given foreign language. Students with four or more years of high school work in a single foreign language may attempt to fulfill the requirement in that language by taking an exemption examination 3-4.

One of the following: (minimum grade C-) 3-4
MATH 114 College Mathematics and Statistics
(for students who do not intend to continue the study of mathematics)
MATH 115 Pre-Calculus
(for students who intend to continue the study of mathematics)
MATH 221 Calculus I
MATH 241 Analytic Geometry and Calculus A

BREADTH REQUIREMENTS (See Description)
Creative Arts and Humanities 9
History and Cultural Change 9
Social and Behavioral Sciences 3
Cannot be satisfied by an Economics course.
Mathematics, Natural Sciences and Technology 7
At least one course must have an associated laboratory.

CREDITS TO TOTAL A MINIMUM OF 120

BACHELOR OF ARTS - ECONOMICS

UNIVERSITY REQUIREMENTS

ENGL 110 Critical Reading and Writing 3 (minimum grade C-)
First Year Experience (FYE) 0-4
University Breadth Requirement 12
Discovery Learning Experience (DLE) 3
Multi-cultural Courses 3
Three credits in an approved course or courses stressing multi-cultural, ethnic, and/or gender-related course content

MAJOR REQUIREMENTS
Second Writing Requirement:
(minimum grade C-) 3
A writing course involving significant writing experience including two papers with a combined minimum of 3,000 words to be submitted for extended faculty critique of both composition and content. This course must be taken after completion of 60 credit hours. See approved second writing courses.

Language Requirement

3-4
Completion of the intermediate-level course (107 or 112) in a given foreign language. Students with four or more years of high school work in a single foreign language may attempt to fulfill the requirement in that language by taking an exemption examination 3-4.

One of the following: (minimum grade C-) 3-4
MATH 114 College Mathematics and Statistics
(for students who do not intend to continue the study of mathematics)
MATH 115 Pre-Calculus
(for students who intend to continue the study of mathematics)
MATH 221 Calculus I
MATH 241 Analytic Geometry and Calculus A

BREADTH REQUIREMENTS (See Description)
Creative Arts and Humanities 9
History and Cultural Change 9
Social and Behavioral Sciences 3
Cannot be satisfied by an Economics course.
Mathematics, Natural Sciences and Technology 7
At least one course must have an associated laboratory.

CREDITS TO TOTAL A MINIMUM OF 120
BACHELOR OF ARTS OR BACHELOR OF SCIENCE - ECONOMICS (APPLIED ECONOMICS)

Credit will not be allowed for both courses of any of the following sets of corresponding courses:
ECON 251, ECON 300 and, ECON 301, ECON 332 and ECON 433, ECON 344 and ECON 444, ECON 360 and ECON 463, ECON 381 and ECON 483, and ECON 390 and ECON 490.

MATH 201/MATH 202
Introduction to Statistics I and II: (minimum grade C-)
6

Related Work Requirement
9

Nine credits chosen from any 300-level or higher courses in Accounting, Anthropology, Business Administration, Computer Science, Finance, Geography, History, Mathematics, Philosophy, Political Science, Psychology, Sociology, and Statistics. Also acceptable are ACCT 207, ACCT 208, any 200-level Mathematics except MATH 201, MATH 202, MATH 205, MATH 250, MATH 251, MATH 252, MATH 253, and any MISY courses.

ELECTIVES

After required courses are completed, sufficient credits must be taken to meet the minimum credits required for the degree. No more than three credits can be from HESC/BHAN 120.

CREDITS TO TOTAL A MINIMUM OF 120

BACHELOR OF ARTS OR BACHELOR OF SCIENCE - ECONOMICS (ECONOMIC THEORY AND ECONOMETRICS)

The following requirements must be met in place of the requirement for six economics courses, with at least two at the 400-level, and the quantitative proficiency requirements for the regular B.A. or B.S. degree: (minimum of C- in all required concentration courses)

ECON 422/ECON 423
Econometric Methods and Models I and II
6

Three Economics courses at the 300- or 400-level
9

Two Economics courses at the 400-level or higher (but not ECON 426, ECON 801, ECON 802, ECON 811, or ECON 812)
6

Additional Quantitative Proficiency to be chosen from courses satisfying the quantitative proficiency requirement. 3

Six credits in MATH at or above the 200-level (except MATH 201, MATH 202, MATH 205, MATH 250, MATH 251, MATH 252, and MATH 253).

Any one of the following: ACCT 208, BUAD 306, BUAD 346, BUAD 446, MISY 430, MISY 431, MATH 300, STAT courses at or above the 300-level, CISC courses at or above the 300-level.

BACHELOR OF ARTS OR BACHELOR OF SCIENCE - ECONOMICS (ECONOMIC THEORY AND ECONOMETRICS)

DEGREE: BACHELOR OF ARTS OR BACHELOR OF SCIENCE
MAJOR: ECONOMICS
CONCENTRATION: ECONOMIC THEORY AND ECONOMETRICS

The following requirements must be met in place of the requirement for six economics courses, with at least two at the 400-level:
ECON 422/ECON 423
Econometric Methods and Models I and II
6

Four Economics courses at the 300- or 400-level
12

Two additional 400-level courses in economic theory chosen from: 6
ECON 406
ECON 410
ECON 426
ECON 430
ECON 435
ECON 441
ECON 443
ECON 460
ECON 463

Or graduate level courses in economic theory by approval. A mathematics course at the 300-level or above may be substituted for one of the 400-level courses in economic theory.

The following requirements must be met in place of the quantitative proficiency requirements for the B.S. degree in economics.
MATH 221 or MATH 241
3/4

Three 200-level or above courses in mathematics (except MATH 201, MATH 202,MATH 205, MATH 250, MATH 251, MATH 252 and MATH 253). 9
BACHELOR OF ARTS - ECONOMICS EDUCATION

UNIVERSITY REQUIREMENTS

ENGL 110 Critical Reading and Writing 3
(minimum grade C-)

First Year Experience (FYE) 3

University Breadth Requirement 12

Discovery Learning Experience (DLE) 0-4

Multi-cultural Course
Three credits in an approved course or courses stressing multi-cultural, ethnic, and/or gender-related course content. 3

MAJOR REQUIREMENTS

Second Writing Requirement:
(minimum grade C-) 3
A writing course involving significant writing experience including two papers with a combined minimum of 3,000 words to be submitted for extended faculty critique of both composition and content. This course must be taken after completion of 60 credit hours. See approved second writing courses.

Completion of the intermediate-level course (107 or 112) in a given foreign language. Students with four or more years of high school work in a single foreign language may attempt to fulfill the requirement in that language by taking an exemption examination 3-4.

One of the following: (minimum grade C-) 3-4
MATH 114 College Mathematics and Statistics
(for students who do not intend to continue the study of mathematics)
MATH 115 Pre-Calculus (for students who intend to continue the study of mathematics)
MATH 221 Calculus I
MATH 241 Analytic Geometry and Calculus A

BREADTH REQUIREMENTS (See Description)
Creative Arts and Humanities 9
Nine credits representing at least two areas. Can select courses that may simultaneously fulfill additional non-business requirements below.

History and Cultural Change 9
Nine credits representing at least two areas. Can select courses that may simultaneously fulfill additional non-business requirements below.

Social and Behavioral Science 3
Cannot be satisfied by an Economics course.

Mathematics, Natural Sciences and Technology 7
At least one course must have an associated laboratory.

Minimum C- in all required ECON courses.
ECON 151 Introductory Microeconomics: Prices and Markets 3
ECON 152 Introductory Macroeconomics: National Economy 3
ECON 300 Intermediate Microeconomic Theory 3
or
ECON 301 Quantitative Microeconomic Theory 3
ECON 303 Intermediate Macroeconomic Theory 3

Six Economics courses, at least two of which are at or above the 400 level 18
POSC 150 The American Political System 3
GEOG 120 World Regional Geography 3
HIST 104 World History II 3
HIST 206 United States History since 1865 3

Additional credits as follows 15
6 credits in POSC, 6 credits in GEOG, 3 credits in HIST

EDUC 413 Adolescent Development and Educational Psychology 4
EDUC 414 Teaching Exceptional Adolescents 3
EDUC 419 Diversity in Secondary Education 3
HIST 491 Planning a Course of Instruction 3
HIST 493 Seminar: Problems in Teaching History and Social Sciences 3
EDUC 420 Reading in the Content Areas 1
EDUC 400 Student Teaching 9

Grade of C- or better required in all required major, major related, and professional studies courses.

To be eligible to student teach, Economics Education students must have a GPA of 3.0 in their major and an overall GPA of 2.75. They must also pass a teacher competency test as established by the University Council on Teacher Education. Students must consult with the teacher education program coordinator to obtain the student teaching application and other information concerning student teaching policies.
Finance

Students wishing to explore the possibility of developing an interdepartmental major with other departments should arrange conferences with their faculty advisors and the appropriate department chairs to plan their programs. Approval of the program is also required by the assistant dean of the college or colleges in which the student is registered.

Contact the Office of Undergraduate Advising and Academic Services in 102 Purnell for more information.

Finance
Telephone: (302) 831-1015
http://www.lerner.udel.edu/finance
Faculty listing: http://www.lerner.udel.edu/faculty-staff/finance

Professional education in finance serves to develop the capabilities of students so that they may assume positions of leadership and responsibility at all levels of financial management in our society. The undergraduate degree program in Finance reflects the growing demand for greater financial management capability in banking and in the financial services related industries. An Honors Degree option is available. Students majoring in Finance may also pursue a minor in International Business and/or apply to the minors in Advertising, Entrepreneurial Studies, Management Information Systems and Economics as well as minors offered outside of the Lerner College.

To earn the major in Finance, one must: (1) earn a minimum of 121 credits, (2) achieve a minimum cumulative GPA of C (2.0) on all work undertaken at the University of Delaware, (3) fulfill the course requirements of the major, and (4) achieve at least a C- in specified business, finance, accounting, and economics courses. Only one of the five required upper-level courses in Finance may be taken at another AACSB institution, unless advance permission is granted.

Students also take a broad range of courses throughout the University that are outside the Alfred Lerner College of Business and Economics. These include a specified number of courses in the humanities, sciences, social and behavioral sciences, and in disciplines that develop specific skills in mathematics, statistics, and written and oral communication. The math and statistics courses require a grade of C- or better. Additional electives are also required to give each student the opportunity to choose courses most consistent with his or her interests.
BACHELOR OF SCIENCE - FINANCE

UNIVERSITY REQUIREMENTS
ENGL 110  Critical Reading and Writing (minimum grade C-) 3
First Year Experience (FYE) 0-4
Discovery Learning Experience (DLE) 3
Breadth Requirements 12

Multi-cultural Courses 3
Three credits in an approved course or courses stressing multi-cultural, ethnic, and/or gender-related course content

MAJOR REQUIREMENTS
Twelve Humanities credits from: 12
Art History, History, English (except composition or similar courses), Foreign Languages (up to 6 of the allowable 9 credits may be grammar courses), Philosophy, Music (except credit for participation in instrumental and/or choral organizations), Theatre, Comparative Literature, and literature courses in a foreign language.
No more than nine credits may be taken in one department.

Nine Social and Behavioral Science credits from:
Economics (ECON 251, or 300-level or higher, excluding ECON 302) 3

Six credits from: 6
Anthropology, Economics (ECON 251 or 300-level or higher, excluding ECON 302), Geography, Political Science and International Relations, Psychology or Sociology (except Criminal Justice), Black American Studies (except courses that qualify as under Humanities), or Women's Studies (except courses that qualify as under Humanities). No more than six credits may be taken in one department to fulfill Social and Behavioral Science requirements.

COMM 212  Oral Communication in Business (It is advised that COMM 212 be taken in the sophomore year.) 3
MATH 221  Calculus I (minimum grade C-) 3
MATH 230  Finite Mathematics with Applications (minimum grade C-) 3
MATH 201/MATH 202  Introduction to Statistics I and II (minimum grade C-) 6

One of the following courses: 3
ENGL 301  Expository Writing
ENGL 312  Written Communication in Business
ENGL 410  Technical Writing

Seven Natural and Physical Science credits including one lab credit from: 7
Biological Sciences (BISC), Chemistry (CHEM), Entomology (ENWC), Geology (GEOL), Marine Studies (MAST), Physics (PHYS), Plant Science (PLSC), and Science (SCEN), ANTH 102, ANTH 104, ANTH 202, NTDT 200, GEOG 106, GEOG 101, GEOG 152 and GEOG 220.

ECON 151  Introduction to Microeconomics: Prices and Markets (minimum grade C-) 3
ECON 152  Introduction to Macroeconomics: National Economy (minimum grade C-) 3
ECON 302  Banking and Monetary Policy 3
ACCT 207  Accounting I (minimum grade C-) 3
ACCT 208  Accounting II (minimum grade C-) 3
ACCT 352  Law and Social Issues in Business 3
BUAD 301  Introduction to Marketing (minimum grade C-) 3
BUAD 306  Operations Management (minimum grade C-) 3
BUAD 309  Management and Organizational Behavior (minimum grade C-) 3
BUAD 441  Strategic Management (minimum grade C-) 3
MISY 160  Business Computing: Tools and Concepts 3
MISY 261  Business Information Systems 3

Only one of the following will count toward graduation:
MISY 261 or ACCT 302

Students must earn a grade of C- or better in all but one of the following: FINC 312, FINC 313, FINC 314, FINC 412, FINC 413, FINC 414, FINC 415, FINC 416, FINC 417, FINC 418, FINC 419.

FINC 311  Principles of Finance (minimum grade C-) 3
FINC 312  Intermediate Financial Management 3
FINC 314  Investments 3

Three of the following eight courses: 9
FINC 313  Financial Markets
FINC 412  Financial Institutions
FINC 413  Advanced Corporate Finance
FINC 414  Bank Management
FINC 415  International Finance
FINC 416  Advanced Investments
FINC 417  Real Estate Finance
FINC 418  Seminar: Corporate Governance
FINC 419  Financial Modeling and Valuation
Hotel, Restaurant and Institutional Management

Professional Electives
3 credits from ACCT, BUAD, ENTR, FINC or MISY (300-level or higher)
(ACCT 302, 350 and 351 may not apply) 3

ELECTIVES
After required courses are completed, sufficient credits must be taken to meet the minimum credits required for the degree. Electives should be taken from courses outside the Alfred Lerner College of Business and Economics (with some exceptions and exclusions; see Department for specifics). No more than two credits from HESC 120 may apply.

CREDITS TO TOTAL A MINIMUM OF 121

HONORS BACHELOR OF SCIENCE - FINANCE

The recipient must complete:

All requirements for the Bachelor of Science in Finance.
All of the University's generic requirements for the Honors Baccalaureate degree.

The Honors credits in the major must include at least six credits in BUAD and/or FINC courses. They may include required courses from other departments in the Lerner College.

Hotel, Restaurant and Institutional Management
Telephone: (302) 831-6077
http://www.lerner.udel.edu/departments/HRIM
Faculty Listing: http://www.lerner.udel.edu/faculty-staff/hrim

The Department of Hotel, Restaurant and Institutional Management's mission is to be globally recognized as an innovative leader delivering excellence in hospitality business education, scholarship and service. The Department offers undergraduate majors in Hotel, Restaurant and Institutional Management and Hospitality Industries Studies, as well as a minor in Restaurant Management.

The Hotel, Restaurant and Institutional Management (HRIM) major leads to a Bachelor of Science Degree, including an Honors Degree option; and is based in liberal arts, business and specialized courses in technical applications for the hotel and restaurant industries. The curriculum is designed for those who aspire to managerial and entrepreneurial careers in the hospitality industry. Students are provided a foundation in the traditional academic areas to complement the state-of-the-art business and hospitality courses. The curriculum provides both a practical and a theoretical education. An integral part of the curriculum is the hospitality-related work experience. A documented student work and community service requirement of 800 hours is required prior to graduation. These combined work experiences assist in the preparation of students for the increasingly complex and challenging hospitality industry.

The Hospitality Industry Studies major leads to a Bachelor of Science Degree that is based in liberal arts and business, with an emphasis on quantitative and analytical skills to support decision making in hospitality businesses. The curriculum is designed for students with a strong career interest in analytical and support functions such as consulting, commercial real estate transaction services, sales and marketing, revenue management, e-business and hospitality information technology in the global hospitality industry. The major prepares students for careers in the hospitality industry that require superior analytical and problem-solving skills at the conceptual level. In active consultation with faculty advisors, students will choose a selected combination of courses that will build their knowledge base towards a key area of interest.

Students in the HRIM program also have the opportunity to participate in a 4+1+1 MBA program. With careful planning, academically eligible students can complete both their undergraduate degree in Hotel, Restaurant and Institutional Management or Hospitality Industry Studies and the Master of Business Administration degree in five years of academic study plus a 12 month internship.

BACHELOR OF SCIENCE - HOTEL, RESTAURANT AND INSTITUTIONAL MANAGEMENT

UNIVERSITY REQUIREMENTS
ENGL 110 Critical Reading and Writing 3 (minimum grade C-)

First Year Experience (FYE) 0-4
University Breadth Requirement 12
Discovery Learning Experience (DLE) 3
Multi-cultural Courses 3
Three credits in an approved course or courses stressing multi-cultural, ethnic, and/or gender-
## Major Requirements

**COMM 212** Oral Communication in Business 3

**HRIM 230** Executive Presentations 3

**ENGL 312** Written Communications in Business 3

Foreign Language elective 3/4

The following courses have been approved to fulfill humanities electives:


Humanities elective from above 3

Mathematics course chosen from the following: 3

**MATH 114** College Mathematics and Statistics (designed for students who do not intend to continue the study of mathematics)

**MATH 115** Pre-Calculus (designed for students who intend to continue the study of mathematics)

**MATH 117** Pre-Calculus for Scientists and Engineers

**MATH 221** Calculus

**MATH 241** Analytic Geometry and Calculus A

Successful performance on the proficiency test in mathematics administered by the Department of Mathematical Sciences.

**STAT 200** Basic Statistical Practice 3

or

**MATH 201** Introduction to Statistical Methods 3

**NTDT 200** Nutrition Concepts (minimum grade C-) 3

The following courses have been approved to fulfill the science electives:


Science electives selected from above 6

**PSYC 100** General Psychology 3

**ECON 151/ECON 152** Introduction to Microeconomics/ Macroeconomics 6

Sociology Elective (following course recommended): 3

**ACCT 207** Accounting I 3

**BUAD 301** Introduction to Marketing 3

**BUAD 309** Management and Organizational Behavior 3

**FINC 311** Principles of Finance 3

**HRIM 180** Introduction to Hospitality 3

**HRIM 187** Introduction to Hospitality Information Management 3

**HRIM 201** Food Principles 3

**HRIM 211** Food Principles Laboratory 1

**HRIM 218** Beverage Management 3

**HRIM 230** Quality Food Service Management 1

**HRIM 325** Laboratory in Quantity Food Service Management 2

**HRIM 380** Management of Lodging Operations 3

**HRIM 381** Management of Food and Beverage Operations 3

**HRIM 382** Managerial Accounting and Finance in the Hospitality Industry 3

**HRIM 480** Human Resources Management in the Hospitality Industry 3

**HRIM 481** Marketing in the Hospitality Industry 3

**HRIM 482** Law of Innkeeping 3

**HRIM 450** Managing Hospitality Information Systems 3

**HRIM 488** HRIM Practicum I 4

**HRIM 489** HRIM Practicum II 6

All HRIM courses require a minimum grade of C-.

The HRIM program requires 700 or more hours of approved industry work experience and an additional 100 hours of approved community related course content.
service activities prior to graduation.

ELECTIVES
In addition, sufficient elective credits must be taken to meet the minimum credits required for the degree.

May include Military Science, Music, or Physical Education. (Only two credits of activity-type Physical Education and four credits of Music ensemble and four credits of 100- and 200-level courses in Military Science/Air Force may be counted toward the degree.) Students are encouraged to develop fluency in a second language.

CREDITS TO TOTAL A MINIMUM OF 120

BACHELOR OF SCIENCE - HOSPITALITY INDUSTRY STUDIES

UNIVERSITY REQUIREMENTS ENGL 110

Critical Reading and Writing  (minimum grade C-) 3
FYE First Year Experience 0-4
University Breadth Requirement 12
DLE Discovery Learning Experience 3
Multi-cultural Courses Three credits in an approved course or courses stressing multi-cultural, ethnic, and/or gender-related course content. 3

MAJOR REQUIREMENTS Foreign Language
Choose from Arabic, Chinese, French, German, Greek, Hebrew, Italian, Japanese, Portuguese, Russian, Spanish or Latin (any level) 3/4

HRIM 230 or COMM 212 Executive Presentations or Oral Communication in Business 3
ENGL 312 Written Communications in Business 3
MATH 221 Calculus 3
MATH 201 Introduction to Statistical Methods I 3
MATH 202 Introduction to Statistical Methods II 3
PSYC 100 General Psychology 3

Sociology Course 3
Sciences and Mathematics complete six credits from Mathematics, Natural Sciences and Technology University breadth requirements excluding: MATH 201,202,221,241 and STAT 200. 6

BUSINESS COURSES
ACCT 207 Accounting I 3
ACCT 208 Accounting II 3
BUAD 306 Operations Management 3
BUAD 309 Management and Organizational Behavior 3
BUAD 424 Ethics in the Workplace 3
ECON 151 Microeconomics 3
ECON 152 Macroeconomics 3
FINC 311 Principles of Finance 3

HRIM COURSES - all courses require a minimum grade of C-
HRIM 180 Introduction to Hospitality 3
HRIM 187 Introduction to Hospitality Information Management 3
HRIM 214 Issues in Tourism Management 3
HRIM 215 Meeting & Conference Management 3
HRIM 314 Hospitality Entrepreneurship & Venture Creation 3
HRIM 346 Travel Internet Marketing 3
HRIM 380 Management of Lodging Operations 3
HRIM 381 Management of Food and Beverage Operations 3
HRIM 382 Managerial Accounting and Finance in the Hospitality Industry 3
HRIM 480 Human Resources Management in the Hospitality Industry 3
HRIM 481 Marketing in the Hospitality Industry 3
HRIM 482 Law of Innkeeping 3
HRIM 495 Hospitality Feasibility Studies (fulfills DLE) 3

OPTIONAL AREAS OF FOCUS
Students may choose an area of focus from among the following (C- minimum grade required in all focus courses):
TRANSACTION ADVISORY SERVICES FINC 312
Intermediate Financial Management FINC 314 Investments
FINC 417 Real Estate Finance FINC 467 Real Estate Development and Investment

HOSPITALITY SALES AND MARKETING BUAD 470 Sales Management and Selling
BUAD 471 Advertising Management BUAD 473 Buyer Behavior
COMM 313 Communication Principles in Advertising
### HOSPITALITY INFORMATION MANAGEMENT

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>HRIM 140</td>
<td>Information Technology and Services Management</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>HRIM 144</td>
<td>Hospitality Information Management, Networks and Systems</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>HRIM 450</td>
<td>Managing Hospitality Information Systems</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>HRIM 448</td>
<td>Data Mining Applications in Hospitality</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Misy 261</td>
<td>Business Information Systems</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

The Hospitality Industry Studies program requires 700 or more hours of approved industry work experience and an additional 100 hours of approved community service activities prior to graduation.

### HONORS BACHELOR OF SCIENCE - HOTEL, RESTAURANT AND INSTITUTIONAL MANAGEMENT

The recipient must complete:

All requirements for the Bachelor of Science degree in Hotel, Restaurant and Institutional Management.

All the University’s generic requirements for the Honors Degree.

### MINOR IN RESTAURANT MANAGEMENT

RESTAURANT MANAGEMENT MINOR

The minor in Restaurant Management provides students with a foundation for understanding the global food and beverage industry. The required laboratory experience provides students with the opportunity to apply theoretical knowledge in the award-winning full-service restaurant, Vita Nova. The sixty seat restaurant features an open display kitchen, the Copeland Wine Education Center, Darden Bistro, the Marriott demonstration kitchen studio and the ARAMARK food production center.

The Restaurant Management minor is open to students in any major except for majors in Hotel, Restaurant and Institutional Management (HRIM) and Hospitality Industry Studies. Admission will be based upon the availability of seats and the GPA of the student; a minimum cumulative GPA of 2.5 will be required for consideration. Applications may be obtained from the Hotel, Restaurant and Institutional Management Department office located in Raub Hall and will be reviewed on a rolling basis.

### COURSE REQUIREMENTS

**ACCT 207**

Accounting I - (majors outside Lerner College may substitute ACCT 200) 3/4

**HRIM 201**

Food Principles - co-requisite: HRIM 211 3

**HRIM 211**

Food Principles Laboratory - co-requisite: HRIM 201 1

**HRIM 218**

Beverage Management 3

**HRIM 321**

Quantity Food Service Management - co-requisite: HRIM 325 1

**HRIM 325**

Quantity Food Service Laboratory - co-requisite: HRIM 321 2

**HRIM 381**

Management of Food and Beverage Operations - prerequisite: HRIM 321 3

**ENTR 301 or HRIM 314**

Introduction to Entrepreneurship or Hospitality Entrepreneurship and Venture Creation 3

Total Credits 19/20

100 hours of hospitality industry employment is also required. Hours must be approved and documented at the Hotel, Restaurant and Institutional Management Department office located in Raub Hall.
College of Education and Human Development

The undergraduate programs of the College of Education and Human Development prepare students to enhance human development across the life span, to strengthen educational policies and practices, and to encourage effective policies and management in public, private and nonprofit organizations.

The College of Education and Human Development offers undergraduate degree programs through the School of Education and Department of Human Development and Family Studies. In addition, five minors: Disabilities Studies, Educational Studies, Educational Technology, Human Development and Family Studies, and Urban Education.

Advisement and Academic Enrichment Opportunities

The College of Education and Human Development is committed to students’ success and provides the resources and support services that will enable students to fully participate in the opportunities available throughout their undergraduate years. Undergraduates have an unequaled opportunity to gain valuable practical experience that complements their academic studies by participating in internships and practicum experiences in schools as well as projects through the College of Education and Human Development’s public service and research centers. The College of Education and Human Development also promotes opportunities for students to enhance their undergraduate experience through the Dean's Scholars Program; the College of Education and Human Development Summer Scholars Program; service, leadership and mentoring experiences; undergraduate research; and study abroad opportunities. All academic areas offer an Honors degree including research opportunities leading to a senior thesis for the Honors Degree with Distinction or the Degree with Distinction.

The College of Education and Human Development’s Office of Student Support Services coordinates orientation activities for new students, supports academic advisement, administers academic policy, and maintains students’ records. Students with academic questions or concerns, those interested in becoming involved in special opportunities available to College of Education and Human Development students, and those experiencing academic difficulties are all encouraged to contact their assigned faculty or professional advisor. For additional assistance and information, College of Education and Human Development students are welcome to contact the College of Education and Human Development Office of Student Support Services, 120 Willard Hall Building, (302) 831-2301 or email cehd-osss@udel.edu.

Dean’s Scholar Program

The Dean’s Scholar Program exists to serve the needs of students whose clearly defined educational goals cannot be effectively achieved by pursuing the standard curricula for all existing majors, minors, and interdepartmental majors sponsored by the University. Driven by an overarching passion or curiosity that transcends typical disciplinary bounds and curricula, a Dean’s Scholar’s intellectual interests may lead to broad interdisciplinary explorations of an issue or to more intense, in-depth studies in a single field at a level akin to graduate work. In consultation with faculty advisors and the Associate or Assistant Dean of their college, Dean's Scholars design an imaginative and rigorous individual plan of study to meet the total credit hours required for graduation. Contact the Assistant/Associate Dean in the college or go to www.udel.edu/deansscholar for more information and the application.

Teacher Education Programs

Responsibility for the coordination of the teacher education programs rests with the University Council on Teacher Education (UCTE). Teacher education programs in specific areas are administered by the Colleges of Agriculture and Natural Resources; Arts and Sciences; Health Sciences; Education and Human Development; Earth, Ocean, and Environment, and Alfred Lerner College of Business and Economics. For more information on teacher education programs, students who wish to prepare themselves to be certified teachers should consult the teacher education web site at www.udel.edu/teachered or the faculty advisor for the specific area of certification sought, as follows: (all telephone numbers are area code 302)

COLLEGE OF AGRICULTURE AND NATURAL RESOURCES

Agricultural Education
General Information & Student Teaching
Dr. Arba Henry
831-1320
Dr. David Smith
831-2275
dwsmith@udel.edu

Chemistry and Physics Education
Dr. Kathryn Scantlebury
831-4546
kscantle@udel.edu

ALFRED LERNER COLLEGE OF BUSINESS AND ECONOMICS
Social Studies (Economics Education)
Dr. Barry Joyce
831-2860
bjoyce@udel.edu

COLLEGE OF HEALTH SCIENCES
Health and Physical Education
Dr. Janice Bibik
831-3537
pirwet@udel.edu

COLLEGE OF EDUCATION AND HUMAN DEVELOPMENT
Elementary Teacher Education (In addition to Elementary Education, students select a second certification field in Special Education, Middle School English, Middle School Mathematics, Middle School Science, Middle School Social Studies or a concentration in Urban Education)
Dr. Laura Glass
831-1647
lglass@udel.edu

Early Childhood Education (Early Childhood Education and Early Childhood Special Education)
Dr. Lynn Worden
831-6500
worden@udel.edu

Secondary Education and Special Education (Students are eligible for dual certification through a 5-year program combining a bachelor’s degree in one of the Secondary Education programs and a master’s degree in Special Education.)
Dr. Amy Pleet
831-6285
apleet@udel.edu

COLLEGE OF EARTH, OCEAN, AND ENVIRONMENT
Social Studies (Geography Education)
Dr. Barry Joyce
831-2860
bjoyce@udel.edu

Dr. Hannah Kim
831-8226
hkim@udel.edu

Biology Education
In all its teacher education programs, the University of Delaware is guided by a unified conceptual framework. Programs aim to develop teachers who are reflective practitioners serving diverse communities of learners as scholars, problem solvers, and partners. While the specific course requirements in the programs vary widely, they all support the conceptual framework and outcomes. All University of Delaware teacher education programs have a general education component of liberal studies, a major field or discipline component in the teaching field, and a professional education component of formal study in the educational foundation disciplines and clinical studies of curriculum design and instructional strategies. In addition, all teacher education students benefit from early and graduated “hands on” experiential and instructional opportunities in schools. Information on the University of Delaware's Title II Higher Education Act can be obtained at: www.udel.edu/teachered or by calling 302-831-3000.

FIELD EXPERIENCES (INCLUDING STUDENT TEACHING) are required of all students who wish to obtain an undergraduate degree in teacher education. To participate in the field experiences, including student teaching, students must satisfy their program's course prerequisites, meet minimum GPA requirements, pass required competency tests, and satisfy other criteria as designated by their program, e.g., testing for tuberculosis, criminal background check, child abuse clearance, etc. Consult the appropriate teacher education program advisor (see the list of advisors for teacher education programs above) for the exact GPA requirements and other policies concerning qualifications for field experiences. Applications for student teaching must be submitted and approved prior to the student teaching semester. Deadlines, prerequisites, corequisites, and procedures for submitting applications for student teaching are published each year on the Office of Clinical Studies’ website.

CERTIFICATION The professional education unit of the University of Delaware is accredited by the National Council for the Accreditation of Teacher Education (NCATE). The individual teacher education programs have received State Approved Program status and have been recognized by national specialty organizations as having met their standards. Students who complete a University of Delaware Approved Teacher Education Program and who demonstrate competency in the appropriate academic content knowledge by taking the Praxis II test required by the State of Delaware for certification receive an institutional recommendation for teacher certification. Upon receiving the University’s recommendation, students must apply for certification through the individual state’s Department of Education. Most states require that students pass a standardized test to qualify for teacher certification. The Delaware Center for Teacher Education has information available to students on the testing requirements and the certification procedures. For further information, call (302) 831-3000 or visit the website at www.teachered.udel.edu.

DELAWARE CENTER FOR TEACHER EDUCATION
The Delaware Center for Teacher Education (DCTE) strengthens both pre-service and in-service teacher education, improves access for the education community to the University’s teacher education and professional development programs, and supports the state’s efforts to enhance teacher and professional development in line with state content standards and accountability requirements. For further information about DCTE generally, call (302) 831-3000 or visit the web site at www.udel.edu/dcte/.

Of the programs and services within DCTE, the following are of particular interest to undergraduates.

The ASPIRE program encourages students from underrepresented groups to pursue a career in teaching. In addition to recruiting qualified applicants, ASPIRE provides students in all the University's teacher education programs with academic support, if needed, and professional development activities. For more information, call 831-3000 or email mware@udel.edu.

Project SMART recruits student to teach mathematics or science in high needs secondary schools, Project SMART engages math and science teacher education candidates in a variety of activities aimed at developing their content knowledge, pedagogical content knowledge and professional knowledge and skills. Candidates participate in a carefully planned sequence of field, clinical, and research experiences. For more information, call 831-1641 or email kmelvin@udel.edu.

The Education Resource Center (ERC) is a multimedia, special purpose curriculum
materials center that provides both circulating and reserve collections for use by teachers, students, and administrators. The ERC operates a Book Examination Site, receiving review copies of newly released books for youth from over 100 publishers. For further information, call (302) 831-2335 or visit the website at: http://www.erc.udel.edu.

The Office of Clinical Studies assists faculty in implementing a program of field-based professional practice that includes several sequential phases of increasing involvement and responsibility and in placing students in appropriate clinical settings. For further information, call (302) 831-2319 or e-mail hartmanj@udel.edu.

**Discovery- and Service-Based Learning Opportunities and Clinical Experiences**

As a professional, service-oriented college, the College of Education and Human Development stresses opportunities for learning through experiences that require students to apply their academic training and encourage them to develop their newly acquired skills and knowledge. The College of Education and Human Development has a unique combination of facilities that provide a wide range of practical experience settings, and the College of Education and Human Development offers special programs that encourage personal and professional development. Undergraduate students can also learn from valuable practical experience that complements their academic studies by working with faculty, staff and graduate students in the College of Education and Human Development's public service and research centers. The College of Education and Human Development receives funding from the Delaware General Assembly to support undergraduates who are working on projects that benefit the people of Delaware.

The following units offer special opportunities for undergraduate student participation:

- The College School located at 459 Wyoming Road, provides a school-year program for children, grades 1-8, with learning differences. The school provides individualized and innovative instruction for children who have had unsuccessful school experiences, with the goal of returning these students to more traditional classroom settings within an average of two to three years. The College School also serves as a research and clinical site for students and faculty in Education, School Psychology, Clinical Psychology, Nursing, Physical Education, Nutrition, and many other disciplines. For further information: www.udel.edu/collegeschool or call (302) 831-0222.

Professional Development Schools provide professional training in teacher education much in the way teaching hospitals serve medical education. Elementary Teacher Education students in Milford, Delaware participate in an innovative teacher education program where they take classes in a Professional Development School that serves a rural population.

The University of Delaware Laboratory Preschool, located at 459 Wyoming Road, is a NAEYC accredited model preschool program, provides appropriate developmental programs for children with and without disabilities; teaches University students to work with young children through classroom practicum experiences; provides opportunities for students, faculty and professionals to observe exemplary preschool programs and teacher role models; enables students to observe children ages two through six so the students can better understand developmental progression; and provides a research site for students and faculty. For further information, visit www.labpreschool.udel.edu, or contact Sarah Bergan, Administrative Coordinator at (302) 831-2304 or e-mail: bergan@udel.edu.

**THE COLLEGE OF EDUCATION AND HUMAN DEVELOPMENT UNDERGRADUATE INTERNSHIPS AND RESEARCH ASSISTANTSHIPS**

The College of Education and Human Development offers students many opportunities for public and community service research assistantships and internships through its research and public service units. Undergraduates are able to work closely with faculty, staff and graduate students on key issues involving children, families, schools, communities, the environment, consumers and service institutions, and public policies. The following College of Education and Human Development research and public service centers, profiled in detail in the chapter “Research Centers, Institutes, and Special Facilities,” offer public and community research assistantships and internship opportunities:

- Center for Disabilities Studies
- Delaware Center for Teacher Education
- Delaware Education Research and Development Center
Elementary Teacher Education students choose a concentration in one of the following six areas: middle school math, middle school English, middle school science, middle school social studies, special education or urban education. They can gain expertise in a high-needs area through their concentration, which makes them a valuable resource for their future school and very marketable. Students who pursue a middle school or special education concentration are eligible for teacher certification in those areas in addition to certification in elementary education.

Elementary Teacher Education students begin their field experiences and education courses in their freshmen year. They spend approximately 200 hours in the field prior to student teaching and work with diverse student populations. The General Studies, Professional Studies and Concentration courses provide students with the content and pedagogical knowledge needed to be effective classroom teachers. A grade of C- or better is required in all courses in the major. Students must apply for Upper Division Clearance prior to taking 300-level education courses in their junior year, and the requirements for this clearance are available online.

**BACHELOR OF SCIENCE IN EDUCATION - ELEMENTARY TEACHER EDUCATION**

**UNIVERSITY REQUIREMENTS**

- ENGL 110 Critical Reading and Writing 3 (minimum grade C-)
- First Year Experience (FYE) 0-4
- Breadth Requirements 12
- Discovery Learning Experience (DLE) 3
- Multi-cultural Courses 3

The university requirements can be satisfied by the major requirements listed below.

**MAJOR REQUIREMENTS**

Note: All students must complete General Studies and Professional Studies courses and a concentration.

**GENERAL STUDIES (45 credits)**

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<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tr>
<td>GEOL 113</td>
<td>Earth Science</td>
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<td>SCEN 102</td>
<td>Physical Science</td>
<td>4</td>
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<tr>
<td>BISC 104</td>
<td>General Biology</td>
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<td>Credits</td>
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<td>-------------</td>
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<tr>
<td>EDUC 100</td>
<td>Introduction to Elementary and Middle School Education (Satisfies First Year Experience)</td>
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<tr>
<td>EDUC 205</td>
<td>Human Development: Grades K-8</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 210</td>
<td>Beginning Literacy Instruction</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 230</td>
<td>Introduction to Exceptional Children</td>
<td>3</td>
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<tr>
<td>EDUC 240</td>
<td>Legal and Ethical Issues in American Education</td>
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<tr>
<td>EDUC 247</td>
<td>The History of Education in America</td>
<td>3</td>
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<td>EDUC 258</td>
<td>Cultural Diversity, Schooling and the Teacher</td>
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<tr>
<td>EDUC 259</td>
<td>Cultural Diversity in Community Contexts</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 268</td>
<td>Educational Technology: Professional Tools</td>
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</tr>
<tr>
<td>EDUC 310</td>
<td>Reading and Writing in Elementary School</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 335</td>
<td>Elementary Curriculum: Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 341</td>
<td>Elementary Curriculum: Science</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 346</td>
<td>Elementary Curriculum: Social Studies</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 347</td>
<td>Integrating Technology in Education</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 390</td>
<td>Classroom Management for Social and Emotional Learning</td>
<td>2</td>
</tr>
<tr>
<td>EDUC 400</td>
<td>Student Teaching: Elementary Education</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 433</td>
<td>Non-school Factors Affecting Learning in the Classroom</td>
<td>5</td>
</tr>
<tr>
<td>EDUC 436</td>
<td>Literacy Problems: Assessment and Instruction</td>
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</tr>
<tr>
<td>EDUC 437</td>
<td>Diagnosis and Instruction: Literacy (Special Education concentration only)</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 451</td>
<td>Educational Assessment for Classroom Teachers</td>
<td>3</td>
</tr>
</tbody>
</table>

**CONCENTRATIONS**

**Middle School English**

The list of approved ENGL writing and diversity courses are available online.
ENGL 294  English Language: Grammar and Usage  3
EDUC 403/ENGL 403  Literature for Adolescents: Multimedia Texts  3
ENGL 204  American Literature  3
ENGL 205  British Literature I  3
ENGL 206  British Literature II  3
ENGL 401  Writing course  3
ENGL 402  diversity course  3
EDUC 320  Reading and Writing in the Middle Grades  3
EDUC 400  Student Teaching: Middle School English  5
TOTAL CREDITS IN THE MAJOR WITH MIDDLE SCHOOL ENGLISH  121

Middle School Mathematics
MATH 221  Calculus I  
or
MATH 241  Analytic Geometry and Calculus A  3-4
MATH 222  Calculus II  
or
MATH 242  Analytic Geometry and Calculus B  3-4
MATH 210  Discrete Mathematics  3
MATH 230  Finite Math with Applications  3
STAT 200  Basic Statistical Practice  3  
or
MATH 201  Introduction to Statistical Methods I  
MATH 240  Geometry and Measurement for Middle School Teachers  3
MATH 217  Algebra for Middle School Teachers  3
EDUC 336  Middle School Mathematics Curriculum and Methods  3
EDUC 400  Student Teaching: Middle School Mathematics  5
TOTAL CREDITS IN THE MAJOR WITH MIDDLE SCHOOL MATHEMATICS  121-123

Middle School Science
The list of approved biology, physical science, earth science and environmental science courses is available online.

Biology courses  6
Physical science courses  6
Earth science course  3
Environmental science course  3
SCEN 650  Scientific Inquiry for Current and Future Teachers  3
EDUC 443  Teaching Science in the Middle School  3
EDUC 400  Student Teaching: Middle School Science  5
TOTAL CREDITS IN THE MAJOR WITH MIDDLE SCHOOL SCIENCE  121

Middle School Social Studies
HIST 205 or HIST 206 United States History  3
or
HIST 103 or HIST 104 World History  3
(whichever was not taken for General Studies)
POSC 240  Introduction to International Relations  
or
POSC 270  Comparative Politics  3
Economics course*  3
Geography course*  3
History, Geography, Political Science or Economics courses*  6
(*Six of the above 12 credits must be at the 300 level or higher.)
EDUC 348  Investigating Social Studies in Middle School Communities  3
EDUC 400  Student Teaching: Middle School Social Studies  5
Free elective from any department  3
TOTAL CREDITS IN THE MAJOR WITH MIDDLE SCHOOL SOCIAL STUDIES  121

Special Education
EDUC 410  Assistive Technology  1
EDUC 431  Applied Behavior Analysis  3
EDUC 432  Curriculum for School-aged Exceptional Children  3
EDUC 435  Educational Evaluation for Exceptional Children  3
EDUC 400  Student Teaching: Special Education  5
Students also complete the Disabilities Studies Minor, Human Development and Family Studies Minor, or a 15-credit focus area in English, mathematics, science, social studies or urban education from the approved list of courses that is available online.
TOTAL CREDITS IN THE MAJOR WITH SPECIAL EDUCATION  121

Urban Education
EDUC 258  Cultural Diversity, Schooling and the Teacher  3
or
EDUC 259  Cultural Diversity in Community Contexts  3
(whichever was not taken for Professional Studies)
discipline area rather than a single discipline area for the concentration. This program also includes more K-6 school-based requirements that are designed in cooperation with the Milford School District. All requirements for this program may be met at the University of Delaware campus in Georgetown and the Milford Professional Development School located on the grounds of the Milford School District.

ASSOCIATE IN ARTS DEGREE IN EDUCATION

The Associate in Arts (AA) in Education degree is designed for students enrolled in Georgetown who have an interest in elementary education. This degree includes the General Studies courses and EDUC 100, EDUC 205, EDUC 210, EDUC 230, EDUC 240/EDUC 247, EDUC 258/EDUC 259 and EDUC 286 in the Elementary Teacher Education program. Upon successful completion of this degree and passing the Praxis I exam, students wishing to complete their BSED degree may apply to transfer to the ETE program in Newark. Information regarding admission requirements may be found in the Undergraduate Admission section of this catalog. Academic advisement is available in Suite 172 of the Jason Technology Center in Georgetown or by contacting Laurie Palmer at (302) 424-6461.

MINOR IN EDUCATIONAL STUDIES

The Educational Studies minor provides students with a broad understanding of education, both inside and outside schools. The minor requires the 18 credits listed below. A grade of C- or better is required in all courses.

- EDUC 240 Legal and Ethical Issues in American Education 3
- EDUC 247 The History of Education in America 3
- EDUC 205 Human Development: Grades K-8 3
- EDUC 230 Introduction to Exceptional Children
- EDUC 414 Teaching Exceptional Adolescents 3
- EDUC 258 Cultural Diversity, Schooling, and the Teacher
- EDUC 259 Cultural Diversity in Community Contexts
- EDUC 419 Diversity in Secondary Education 3

HONORS BACHELOR OF SCIENCE - ELEMENTARY TEACHER EDUCATION

The recipient must complete:

- All requirements for the Bachelor of Science degree in Elementary Teacher Education.
- All the University's generic requirements for the Honors Baccalaureate Degree.

SOUTHERN DELAWARE BACHELOR OF SCIENCE IN EDUCATION - ELEMENTARY TEACHER EDUCATION

NOTE: The Southern Delaware Elementary Teacher Education program is no longer accepting applicants.

University and major requirements are the same as for the Elementary Teacher Education program except the students must pursue the Special Education Concentration. In addition, students must complete 15 credits in an integrated discipline area.
Human Development and Family Studies

or
EDUC 459 Urban Schools and Urban Landscapes
EDUC 470 Topics in Education 3

Total Credits 18

MINOR IN EDUCATIONAL TECHNOLOGY

Learning how to use technology to improve results has become strategically important across all sectors of education and training. Therefore, this Minor in Educational Technology is open to all students in any University bachelor's degree program by completing the courses listed below. This coursework provides students with a theoretical grounding and practical experience using technology to improve teaching and learning in real-world situations. Although the courses are technologically rich, they extend beyond tools by immersing students in the knowledge base of researched best practices for improving results. In the service-learning capstone course, students form teams to develop a solution to a real-world educational problem in a local school or workplace. By the end of the Minor, students will have created a Web portfolio demonstrating the manner in which they meet the national educational technology standards. In order to be eligible to add the Minor, students must have completed 28 credits at the University of Delaware.

Required Courses 12
EDUC 411 Introduction to Educational Technology 3
EDUC 421 Internet Technologies 3
EDUC 469 eLearning 3
EDUC 492 Educational Technology Capstone 3
Electives (2) 6
EDUC 438 Learning Technologies Across the Curriculum 3
EDUC 450 Technology and Cognition 3
EDUC 485 Multimedia Literacy 3
EDUC 439 Special Topics in Educational Technology 3
TOTAL CREDITS 18

MINOR IN URBAN EDUCATION

The minor in Urban Education provides students with the opportunity to engage deeply in urban education issues within their particular professional interests. Please note that completion of the minor does not lead to teacher certification. A minimum grade of C- is required in all courses.

EDUC 258 Cultural Diversity, Schooling and the Teacher
or
EDUC 259 Cultural Diversity in Community Contexts
or
EDUC 419 Diversity in Secondary Education 3
EDUC 395 Building Communities of Learners in Urban Contexts 3
EDUC 440 Literacy Instruction for English Language Learners 3
EDUC 459 Urban Schools and Urban Landscapes 3

Select two courses from the list below 6
BAMS 110 Introduction to Black American Studies
BAMS 204/SOCI 204 Urban Communities
BAMS 205 Contemporary Afro-American Issues
BAMS 215/SOCI 215 Race in Society
BAMS 415/SOCI 415 Race, Class and Gender
GEOG 325 Urban Geography
GEOG 346 Urban Cultural Geography
HDFS 202 Foundations of Family Studies
HDFS 230 Families and their Communities
POSC 355 Urban Politics and Community Development
POSC 452 Urban Issues and Policy Analysis
SOCI 305 Social Class and Inequality

TOTAL CREDITS 18

Human Development and Family Studies
Telephone: (302) 831-6500
http://www.hdfs.udel.edu
http://www.hdfs.udel.edu/content/faculty

The Department of Human Development and Family Studies offers undergraduate majors in Early Childhood Education, and in Human Services, both with Honors Degree options. The Department also offers a minor in Human Development and Family Studies. Students in the Human Services Major may apply, during the Sophomore or Junior Year, for admission into the Accelerated HDFS Masters Program. The curricula prepare students for challenging careers with individuals and families throughout the lifespan. Graduates become leaders in early education, family support, and human service programs, with many students pursuing advanced study.

The major in Early Childhood Education is
designed for students who plan on working with children in a variety of educational settings, including schools, preschools, early care and education and home-based programs. The Early Childhood Education major prepares undergraduate students to educate young children in inclusive settings. Students who graduate from this approved early childhood program meet the requirements of the State of Delaware to be certified birth through second grade in both early childhood education and early childhood special education. The program emphasizes developmentally appropriate, family-centered practices to meet the needs of all children, including those with disabilities.

Students in the Human Services major are required to choose one of four concentrations. The Clinical Services Concentration is designed for students wishing to work within public and private agencies serving clients, infants through the aged, and their families. Combining course work and clinical experiences, the program of study prepares graduates for positions in direct client services and developing quality programs for individuals and families. Students are also prepared to pursue graduate degrees in careers addressing the needs of individuals and their families, such as in community and school counseling, family therapy, and social work.

The Administration and Family Policy Concentration is designed for students with interests in developing and administering human service programs, as well as making societal changes through advocacy and social policy. Students are prepared to pursue graduate degrees in such areas as public administration, community development and community psychology, family policy and family studies, family law, and social work.

The Community Education Concentration is designed for students with interests in developing and administering community education programs. The Community Education concentration provides students with a wide range of options, including positions working with young adults and children in settings such as after school programs, YMCAs, camps, and early intervention. Graduate school is a recommended option for many students.

The Family and Consumer Sciences Education Concentration is designed for students interested in developing and administering Family and Consumer Sciences Education programs. The Family and Consumer Sciences Education concentration majors find employment in private and public schools teaching secondary education students with an emphasis on early childhood, human services, apparel, and food services education.

Selection and retention policies for the Early Childhood Education, and Human Services majors have been established and must be followed. Students are responsible for travel arrangements and costs for clinical/internship experiences.

Students in the Human Services major may apply, during their Sophomore or Junior year, for admission into the Accelerated HDFS Masters Program. Application to the Accelerated Program can be made for the Masters of Sciences Program in Human Development and Family Studies. Students may pursue a concentration in human services management, early childhood development and education, or youth development.

Procedures: Prior to, or during the Junior year, complete an application for the HDFS Masters Accelerated program, and submit the application to the HDFS Graduate Coordinator. Application and qualifications for admission can be found on the HDFS website. http://www.hdfs.udel.edu

**BACHELOR OF SCIENCE - EARLY CHILDHOOD EDUCATION**

**UNIVERSITY REQUIREMENTS**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 110 Critical Reading and Writing</td>
<td>3</td>
</tr>
<tr>
<td>First Year Experience (FYE)</td>
<td>0-4</td>
</tr>
<tr>
<td>Breadth Requirement</td>
<td>12</td>
</tr>
<tr>
<td>Discovery Learning Experience (DLE)</td>
<td>3</td>
</tr>
<tr>
<td>Multi-cultural Courses</td>
<td>3</td>
</tr>
</tbody>
</table>

Some University requirements may be met by your major requirements. See your advisor for a planning guide.

**MAJOR REQUIREMENTS CREDITS**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Literature course (see HDFS department for approved list; this requirement may fulfill University Creative Arts and Humanities requirement)</td>
<td>3</td>
</tr>
<tr>
<td>Second Writing Course (chosen from courses satisfying the Arts &amp; Sciences Second Writing</td>
<td></td>
</tr>
</tbody>
</table>
HDFS 432 Field Experience: Preschool - Kindergarten 1
HDFS 433 Field Experience: Kindergarten - Grade 2 2
HDFS 435 Programs for Children with Exceptionalities 1
HDFS 445 Family, School, and Community Partnerships 3
HDFS 452 Assessment of Children 3
HDFS 470 Families and Children at Risk 3
HDFS 480 Student Teaching Seminar 2
EDUC 400 Student Teaching 1 (Fulfills University DLE requirement) 2

Prerequisites for EDUC 400 Student Teaching:
a GPA 2.50 and a major field index of 2.75
Information on courses designated in major field is available from Department Office) and a
minimum grade of C- in all HDFS courses, EDUC 230, MUED 390.

Praxis Test Requirements
ECE students must complete the following Praxis test requirements:
Praxis I: Passing scores on the Praxis I test, all three subtests (reading, passing score = 175;
writing, passing score = 173; and mathematics, passing score = 174), prior to enrollment in HDFS 412.
Praxis II: Proof of having taken an appropriate academic CONTENT area test (e.g. Praxis II in
Elementary Content Knowledge or Fundamental Subject Area Test) or a state-designated
academic content knowledge test (e.g. New York State test in the appropriate area, like the
Elementary Multiple Subjects Test). A copy of the Official score report must be submitted to
the Delaware Center for the Teacher Education, 200 Academy Street, during enrollment in
EDUC 400 Student Teaching or no later than November 1 for January graduates and May 1
for June or summer graduates. An institutional recommendation for certification will not be
issued until the candidate has presented the
official score report.

ELECTIVES
After required courses are completed, sufficient elective credits must be taken to meet the
minimum credits required for the degree.

Only four credits of Music ensemble and four credits of 100-200 level courses in Military
Science/ Army ROTC may be counted toward the degree.
CREDITS TO TOTAL A MINIMUM OF 124
BACHELOR OF SCIENCE - HUMAN SERVICES (CLINICAL SERVICES)

HONORS BACHELOR OF SCIENCE - EARLY CHILDHOOD EDUCATION

The recipient must complete:

  All requirements for the Bachelor of Science degree in Early Childhood Education.
  All of the University’s generic requirements for the Honors Baccalaureate Degree.
  These additional requirements:

  a. Student Teaching Seminar must be taken as an Honors course (HDFS 481).
  b. Achieve a 3.4 GPA in major.

BACHELOR OF SCIENCE - HUMAN SERVICES (CLINICAL SERVICES)

UNIVERSITY REQUIREMENTS
ENGL 110  Critical Reading and Writing (minimum grade C-)  3
First Year Experience (FYE)  0-4
Breadth Requirements  12
Discovery Learning Experience (DLE)  3
Multi-cultural Courses  3
Some University requirements may be met by your major requirements.
See your advisor for a planning guide.

MAJOR REQUIREMENTS
CREDITS

English course  3
Communication course  3
Creative Arts and Humanities or Foreign Language courses (including: CHIN, FREN, GREK, GRMN, HEBR, ITAL, JAPN, LATN, PORT, RUSS, SPAN) if Creative Arts and Humanities requirement is fulfilled by English Literature course)  6
History and Cultural Change  3
NTDT 200  Nutrition Concepts  3
Mathematics, Natural Sciences, and Technology (One science elective must be a laboratory science)  12
SOCI 201  Introduction to Sociology  3
PSYC 100  General Psychology  3
ECON 100  Economic Issues and Policies  3
ECON 151  Intro to Microeconomics: Prices and Markets  3
Social and Behavioral Sciences

HDFS 201  Life Span Development  3
HDFS 202  Diversity and Families (fulfills University multicultural requirement)  3
HDFS 230  Families and Their Communities  3
HDFS 235  Survey in Child and Family Services  3
HDFS 328  Introduction to the Research Process  3
HDFS 332  Counseling Theories  3
HDFS 334  Experiential Education (fulfills University DLE Requirement)  3
HDFS 346  Counseling in Human Services  3
HDFS 347  Program Development and Evaluation  3
HDFS 402  Family and Child Policy  3
HDFS 422  Family Relationships  3
HDFS 470  Families and Children at Risk  3

One “Individuals and Families at Risk” course chosen from:

HDFS 270  Families and Developmental Disabilities  3
HDFS 331  Youth At Risk  3
HDFS 403  Adult Disability Issues  3
HDFS 408  Domestic Violence Policy and Prevention  3
HDFS 410  The Hospitalized Child  3
HDFS 472  Substance Abuse and the Family  3

One developmental elective chosen from:

HDFS 220  Child Development I: Prenatal to Age 3  3
HDFS 221  Child Development II: 3-10  3
HDFS 239  Adolescent Development  3
HDFS 333  Adult Development and Aging  3
HDFS 405  Aging and the Family  3
HDFS 427  Parenting Through the Lifespan  3

The developmental elective must be related to the “area of interest” and approved by the advisor.

HDFS 465  Seminar  2
HDFS 449  Internship in Community Services  10

Prerequisite for HDFS 449 Internship:

GPA of 2.50 and major field index of 2.75 with a minimum grade of C- in all HDFS courses and restricted electives.

Restricted electives  12

Determined in consultation with advisor upon completion of HDFS 235. Nine credits of
restricted electives must be completed prior to senior internship.

ELECTIVES
After required courses are completed, sufficient elective credits must be taken to meet the minimum credits required for the degree.

Only four credits of Music ensemble and four credits of 100- and 200-level courses in Military Science/Army ROTC may be counted toward the degree.

CREDITSTOTOTAL A MINIMUM OF 120

BACHELOR OF SCIENCE - HUMAN SERVICES (ADMINISTRATION AND FAMILY POLICY)

UNIVERSITY REQUIREMENTS
ENGL 110 Critical Reading and Writing
(minimum grade C-) 3
First Year Experience (FYE) 0-4
Breadth Requirement 12
Discovery Learning Experience (DLE) 3
Multi-cultural Courses 3

Some University requirements may be met by your major requirements. See your advisor for a planning guide.

MAJOR REQUIREMENTS
CREDITS

English course 3
Communication course 3
Creative Arts and Humanities or
Foreign Language courses (including: CHIN, FREN, GREK, GRMN, HEBR, ITAL, JAPN, LATN, PORT, RUSS, SPAN) if Creative Arts and Humanities requirement is fulfilled by English Literature course) 3
History and Cultural Change 3
MATH 114 or higher, or CISC course 3
Mathematics, Natural Sciences, and Technology
(One science elective must be a laboratory science) 10
SOCI 201 Introduction to Sociology 3
PSYC 100 General Psychology 3
POSC 220 Introduction to Public Policy or
UAPP 225 Crafting Public Policy 3
ECON 100 Economic Issues and Policies or
ECON 151 Intro to Microeconomics: Prices and Markets 3
Leadership course 3
Human Relationships elective (HDFS 330, HDFS 333, HDFS 401, HDFS 409 or HDFS 427) 3
Social and Behavioral Sciences Breadth courses 6
HDFS 201 Life Span Development 3
HDFS 202 Diversity and Families 3
(fulfills University multicultural requirement)
HDFS 230 Families and Their Communities 3
HDFS 235 Survey in Child and Family Services 3
HDFS 328 Introduction to the Research Process 3
HDFS 334 Experiential Education 3
(HDFS 334 requires a 50 hour field placement. Placements need approval of instructor before class begins.)
HDFS 347 Program Development and Evaluation 3
HDFS 402 Family and Child Policy 3
HDFS 422 Family Relationships 3
HDFS 470 Families and Children at Risk

One “Individuals and Families at Risk” course chosen from: 3
HDFS 270 Families and Developmental Disabilities
HDFS 331 Youth-at-Risk
HDFS 403 Adult Disability Issues
HDFS 408 Domestic Violence Policy/Prevention
HDFS 410 The Hospitalized Child
HDFS 472 Substance Abuse and the Family

Two developmental electives chosen from: 6
HDFS 220 Child Development I: Prenatal to Age 3
HDFS 221 Child Development II: 3-10
HDFS 329 Adolescent Development
HDFS 339 Adult Development and Aging
HDFS 349 Aging & Society (crosslisted with SOCI 349)
HDFS 405 Aging and the Family
HDFS 427 Parenting Through the Lifespan
(HDFS427 may be taken as a developmental elective OR a human relationships elective)

One developmental elective must be related to the “area of interest” and approved by the advisor.

Restricted electives 18
May be fulfilled with a minor. Minors may include, but are not limited to, legal studies, public policy, criminal justice, disability studies, leadership, women's studies, public
administration; related electives may be necessary to complete 18 credits. Restricted electives may also have an applied family research emphasis, and may include, but are not limited to, HDFS 466, HDFS 615, and UNIV 401/UNIV 402 Senior Thesis.

A minimum grade of C- is required in all HDFS courses and restricted electives.

**ELECTIVES**

After required courses are completed, sufficient elective credits must be taken to meet the minimum credits required for the degree.

Only four credits of Music ensemble and four credits of 100- and 200-level courses in Military Science/Army ROTC may be counted toward the degree.)

**CREDITS TO TOTAL A MINIMUM OF 120**

**BACHELOR OF SCIENCE - HUMAN SERVICES (COMMUNITY EDUCATION)**

**ENGL 110** Critical Reading and Writing (minimum grade C-) 3

First Year Experience (FYE) 3

Breadth Requirements 12

Discovery Learning Experience (DLE) 3

Multi-cultural Course 3

Some University requirements may be met by your major requirements. See your advisor for a planning guide.

**MAJOR REQUIREMENTS**

**CREDITS**

English Course 3

Communication Course 3

MATH 114 or higher 3

PSYC 100 General Psychology 3

SOCI 201 Intro to Sociology 3

ECON 100 Economic Issues and Policies or ECON 102* Civics and Economics for Teachers or ECON 151 Intro to Microeconomics: Prices and Markets 3

POSC 102* Civics and Economics for Teachers or 3

POSC 150 American Political System or POSC 220 Intro to Public Policy 3

*ECON 102 and POSC 102 are cross-listed courses. Students cannot take both ECON 102 and POSC 102

NTDT 200 Nutrition Concepts 3

Six credits from the Creative Arts & Humanities, or History & Cultural Change breadth lists, or from Foreign Language Instruction 6

Mathematics, Natural Sciences and Technology, plus an additional 4-credit course with lab from Math, Science and Technology 10

**HUMAN SERVICES CORE SEQUENCE (39 CREDITS)**

HDFS 201 Life Span Development 3

HDFS 202 Diversity and Families (fulfills Multicultural requirement) 3

HDFS 230 Families and Their Communities 3

HDFS 235 Survey in Child and Family Services 3

HDFS 328 Intro to the Research Process 3

HDFS 330 Mentoring & Helping Relationships 3

HDFS 334 Experiential Education 3

(HDFS 334 requires a 50 hour field placement. Placements need approval of instructor before class begins.)

HDFS 347 Program Development and Evaluation 3

HDFS 402 Family and Child Policy 3

HDFS 422 Family Relationships 3

HDFS 470 Families and Children at Risk 3

One Human Development elective chosen from: 3

HDFS 220 Child Development: Prenatal to Age 3

HDFS 221 Child Development II: 3 - 10

HDFS 329 Adolescent Development

HDFS 339 Adult Development and Aging

HDFS 349 Aging and Society (crosslisted with SOCI 349)

HDFS 405 Aging and the Family

HDFS 427 Parenting Through the Lifespan

EDUC 205 Human Development: Grades K - 8

One At Risk Elective chosen from: 3

HDFS 270 Families and Developmental Disabilities

HDFS 331 Youth at Risk
Bachelor of Science - Human Services (Family and Consumer Sciences)

Some University requirements may be met by your major requirements. See your advisor for a planning guide.

### Major Requirements

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDUC 230</td>
<td>Introduction to Exceptional Children</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 258</td>
<td>Cultural Diversity, Schooling, and the Teacher</td>
<td></td>
</tr>
<tr>
<td>or</td>
<td>Cultural Diversity in Community Contexts</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 286</td>
<td>Educational Technology: Professional Tools</td>
<td>1</td>
</tr>
<tr>
<td>HDFS 350</td>
<td>Technology and Assistive Technology in Early Childhood Education</td>
<td>3</td>
</tr>
<tr>
<td>HDFS 414</td>
<td>Guidance and Behavior Support: Birth - Grade 2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Urban Education Course (EDUC 395, 440, or 459)</td>
<td>3</td>
</tr>
</tbody>
</table>

Fifteen credits of Community Education: Restricted Electives chosen in consultation with academic advisor, requiring advisor’s approval. 15

### Electives

After required courses are completed, sufficient elective credits must be taken to meet the 120 credits required for the degree.

A minimum grade of C- is required in all HDFS courses and restricted electives.

After required courses are completed, sufficient elective credits must be taken to meet the minimum credits required for the degree.

Only four credits of Music ensemble and four credits of 100- and 200-level courses in Military Science/Army ROTC may be counted toward the degree.

### Credits to Total a Minimum of 120

BACHELOR OF SCIENCE - HUMAN SERVICES (FAMILY AND CONSUMER SCIENCES)

UNIVERSITY REQUIREMENTS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ENGL 110</td>
<td>Critical Reading and Writing (minimum grade of C-)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>First Year Experience (FYE)</td>
<td>0-4</td>
</tr>
<tr>
<td></td>
<td>Breadth Requirement</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Discovery Learning Experience (DLE)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Multi-cultural Course</td>
<td>3</td>
</tr>
</tbody>
</table>

English course 3
Communication Course 3
Creative Arts and Humanities or Foreign Language courses (including: CHIN, FREN, GREK, GRMN, HEBR, ITAL, JAPN, LATIN, PORT, RUSS, SPAN) if Creative Arts and Humanities requirement is fulfilled by English Literature course 3
BISC 105 Human Heredity and Development 3
NTDT 200 Nutrition Concepts 3
Mathematics, Natural Sciences, and Technology (One science elective must be a laboratory science) 7
SOCI 201 Intro to Sociology 3
PSYC 100 General Psychology 3
EDUC 413 Adolescent Development and Educational Psychology 3
EDUC 414 Teaching Exceptional Adolescents 3
EDUC 420 Reading in the Content Areas 1
FASH 114 Fashion, Style and Culture 3
FASH 122 Apparel Product Assembly 3
HRIM 201 Food Principles 2
HRIM 211 Food Principles Laboratory 1
HDFS 201 Life Span Development 3
HDFS 202 Diversity and Families (fulfills University multicultural requirement) 3
HDFS 220 Child Development I: Prenatal to Age 3 3
HDFS 221 Child Development II: 3-10 3
HDFS 222 Inclusive Curriculum: Birth - Grade 2 3
HDFS 224 Practicum in Inclusive Curriculum: Birth - Grade 2 3
HDFS 230 Families and Their Communities 3
HDFS 235 Survey in Child and Family Services 3
HDFS 470 Families and Children at Risk 3
EDUC 413 Adolescent Development and Educational Psychology 3
HDFS 402 Family and Child Policy 3
HDFS 411 Inclusive Curriculum: Birth to Preschool 3
HDFS 414 Guidance and Behavior Support: Birth - Grade 2 3
HDFS 422 Family Relationships 3
HDFS 430 Family Life Education 3

Only four credits of Music ensemble and four credits of 100- and 200-level courses in Military Science/Army ROTC may be counted toward the degree.
HONORS BACHELOR OF SCIENCE: HUMAN SERVICES

The recipient must complete:

All requirements for the Bachelor of Science degree in Human Services.

All of the University's generic requirements for the Honors Baccalaureate Degree.

These additional requirements:

a. Achieve a 3.4 GPA in major.

b. HDFS 422 (Honors section) only serves as the capstone course if taken in senior year.

4+1 BACHELOR OF SCIENCE IN HUMAN SERVICES/MASTER OF SCIENCE IN HUMAN SERVICES LEADERSHIP

The four-year curriculum for the Bachelor of Science in Human Services contains required graduate courses that prepare the student for the Master in Science curriculum. With this 4+1 plan and the proper scheduling of MS classes, students may enter immediately into the MS program full-time with the possibility of completion within one year.

UD Human Services (BS) undergraduate majors who are provisionally granted admission to the 4+1 MS HDFS program/Human Services Concentration and subsequently admitted to the MS HDFS program can waive the requirement to take a)HDFS 470 or HDFS 475 by completing HDFS 601, b) HDFS 422 by completing HDFS 621, and c) HDFS 449 (3 credits) by taking HDFS 669 (3 credits). For any undergraduate course requirement to be waived, the student needs to earn a grade of B (3.0) or better in the corresponding HDFS graduate course.

ELECTIVES

After required courses are completed, sufficient elective credits must be taken to meet the minimum credits required for the degree.

Only four credits of Music ensemble and four credits of 100-200 level courses in Military Science/Army ROTC may be counted toward the degree.

CREDITS TO TOTAL A MINIMUM OF 120
on their majors.

CORE COURSES: Take both courses
HDFS 201 Life Span Development* 3
HDFS 202 Diversity and Families* 3

CONCENTRATIONS: Take one course from each of the 4 sections below

Human Development
HDFS 220 Child Development I: Prenatal - Age 3* 3
HDFS 221 Child Development II: 3-10* 3
HDFS 329 Adolescent Development* 3
HDFS 339 Adult Development and Aging* 3

Family Studies
HDFS 270 Families and Developmental Disabilities*^ 3
HDFS 405 Aging and the Family* 3
HDFS 427 Parenting Through the Lifespan* 3
HDFS 472 Substance Abuse and the Family 3

Relationships
HDFS 333 Development of Human Relationships* 3
HDFS 330 Mentoring and Helping Relationships* 3
HDFS 401 Foundations of Human Sexuality*` 3
HDFS 409 Domestic Violence Services* 3

Development within Diverse Communities
BAMS 352 Black Feminist Theory 3
BAMS 416 Psychological Perspectives on the Black American 3
EDUC 258 Cultural Diversity, Schooling & The Teacher 3
EDUC 259 Cultural Diversity in Community Contexts 3
EDUC 459 Urban Schools In Urban Landscapes 3
HDFS 230 Families and Their Communities* 3
HDFS 475 Topics in Human Development and Family Studies 3
SOCI 305 Social Class and Inequality 3
SOCI 418 Race, Gender, & Poverty 3
WOMS 200/SGST 200 Cultural Introduction to Sexualities and Gender Studies 3
WOMS 212 Motherhood in Culture and Politics 3

Total credits for the minor: 18

C- is the minimum grade needed for a course to count for the minor

*Approved course in Social and Behavioral Sciences area of University Breadth Requirements

^May be cross-listed with PSYC 270, SOCI 270
` May be cross-listed with HESC 401, WOMS 401
For additional information about the HDFS minor see:
http://www.hdfs.udel.edu/content/minor-in-hdfs
College of Engineering

Mission

The mission of the College of Engineering at the University of Delaware is to cultivate both learning and the advancement of knowledge in the engineering sciences, energy and environmental policy, and computer and information sciences. To this end, we provide all of our students with outstanding undergraduate, graduate, and continuing education programs so that they will know how to reason critically and independently yet cooperate productively. Our graduates should understand our culture, communicate clearly in writing and speech, and develop into informed citizens and leaders. The College encourages a strong tradition of applying its distinguished scholarship, research, and educational resources to serve the local, state, and national communities through collaborative efforts with individuals, industry, and government. The College of Engineering at the University of Delaware recognizes the increasing diversity of its students and faculty and, therefore, strives to create an atmosphere in which all people feel welcome to learn and participate in the free exchange of ideas.

Degrees

The College of Engineering offers baccalaureate degrees in biomedical, chemical, civil, environmental, electrical, computer, and mechanical engineering. We also offer baccalaureate degrees in energy and environmental policy, computer science, and information systems.

The College offers minors in biochemical engineering; bioelectrical engineering; biomedical engineering; civil engineering; electrical and computer engineering; energy and environmental policy; environmental engineering; materials science and engineering; nanoscale materials; sustainable energy technology; computer science; and bioinformatics.

The College of Engineering and the College of Arts and Sciences also offer a joint five-year program which leads to a bachelor’s degree in one of the engineering majors as well as a bachelor’s degree from the College of Arts and Sciences (see Arts and Sciences-Engineering Double Degree).

4+1 Degrees

The College of Engineering offers several Bachelors/Masters Degree programs that allow well-qualified students to earn a Bachelors and Masters degree in an Engineering field. Current 4+1 Degree Programs exist in Civil and Environmental Engineering, Mechanical Engineering, and Electrical and Computer Engineering.

Additionally, the College of Engineering and the Lerner College of Business and Economics offer a joint 5-year program that leads to a baccalaureate degree in an engineering major and a Master of Business Administration degree from the Lerner College of Business and Economics. Inquiry should be made to the Assistant Dean for Undergraduate Advisement at (302) 831-8659 by March 1 of the sophomore year of engineering study.

Air Force ROTC

The University's Air Force ROTC program is also administered through the College of Engineering.

Common Fall Semester

Incoming Freshmen students majoring in an engineering field have the choice of being admitted directly into one of our seven Engineering majors or of entering the first fall semester as Engineering Undecided (EGU). Students who choose the EGU option begin their studies in the fall by taking a special set of courses called the Common Fall Semester. This set of courses has been designed to permit EGU freshmen to choose any of the seven Engineering majors in their spring semester. The Introduction to Engineering course taught in the fall semester lays out the nature of each engineering discipline so that students may make an informed choice of major during the latter part of the semester as they begin registration for the spring. Successful completion of the Common Fall Semester permits students to finish any engineering major in the normal four years, provided that they are on track with the calculus sequence for the chosen major.

Resources to Insure Successful Engineers

In addition to academic programs, the College of Engineering also maintains the Resources to Insure Successful Engineers (RISE) Program. RISE provides financial assistance, counseling, and social support to students from groups who
are underrepresented in engineering, as well as others. The program begins with a pre-freshman Summer Enrichment Program and continues to graduation. Individuals should contact the Student Support Manager of the RISE Program at (302) 831-6315.

**Advisement**

Undergraduate student advisement begins during New Student Orientation and continues through graduation. All College of Engineering students are assigned faculty advisors. Students are required to consult with them during the registration periods. Students must also obtain approval from their advisors for courses taken during the Winter or Summer Sessions and when adding or dropping courses. Students are also encouraged to meet with their faculty advisors at other times to learn more about undergraduate academic options; the engineering, energy and environmental policy, and computer and information sciences professions; and graduate school opportunities.

The College Undergraduate Advisement Office provides advisement to students who experience academic difficulties or who require additional guidance. The Assistant Dean for Undergraduate Advisement conducts a preliminary degree checkout for each College of Engineering student early in his or her senior year to help identify any impediments to graduation.

**Engineering Curriculum Organization**

The undergraduate curriculum in each engineering major consists of a core of required courses, a group of technical elective courses, and a group of breadth requirement courses. The core group includes courses in mathematics, chemistry, physics, computer science, and engineering. The technical elective courses allow students to investigate the sciences in more depth and to develop a concentration within their engineering discipline. Most of the breadth requirement courses are taken from the humanities and social sciences to provide a well-rounded education. They are described in more detail in the following section. Additional academic requirements specified by individual engineering departments are given in the appropriate departmental sections.

**Computer and Information Sciences**

The undergraduate curriculum in each computer science major consists of a core of major requirements, breadth requirements, and electives. The core courses consist of computer science, math and science courses, as well as courses in business and information systems for the Information Systems major. The computer science major also consists of a 12-credit concentration. Most of the breadth requirement and elective courses are taken from the humanities and social sciences to provide a well-rounded education.

**Energy and Environmental Policy**

The energy and environmental policy degree is interdisciplinary. As such, the energy and environmental policy major offers an integrated set of courses in the fields of social and policy sciences, natural sciences, engineering, and analytical methods. Majors take core coursework as well as required advanced coursework and elective advanced coursework for their concentration. Breadth requirements reside in the humanities, social sciences, and math, technology and natural science realms.

**University/College Breadth Requirements**

A college education requires some breadth of knowledge across diverse fields and perspectives. Therefore, the University requires all students in each College to take a minimum of 12 credits in courses designated as University Breadth Requirements. If a student changes his/her major to one that resides in a different College, these 12 credits are portable. Each College has the option to increase the number of Breadth Requirement credits for their students and may designate courses supplemental to the University Breadth Requirements.

There are four categories of Breadth Requirement courses:

- Creative Arts and Humanities
- History and Cultural Change
- Social and Behavioral Sciences
- Math, Natural Science and Technology

The following chart specifies how each major in the College of Engineering satisfies Breadth Requirements of the University and the College. Note that each major requires 9 - 21 credits in addition to the University’s 12-credit requirement.

Students should choose courses in consultation with their academic advisors.

For timely progress toward degree completion, students should take a 3-credit course from the
University's approved Multicultural Course List as one of their Breadth Requirements.

**DEGREE REQUIREMENTS**

Bachelor of:
- Biomedical Engineering
- Chemical Engineering
- Civil Engineering
- Computer Engineering
- Electrical Engineering
- Environmental Engineering
- Mechanical Engineering

Bachelor of Science in: Computer Science

Information Systems

21 credits distributed as follows:
- Up to 3 credits from each of the University Breadth Requirement categories may be used to simultaneously satisfy the College of Engineering Breadth requirements for this major.
- Of the 21 credits, 6 credits must be at the Upper Level (usually 300-level or higher) as designated in the College of Engineering Breadth Requirement list.

All courses must be passed with a minimum grade of C-.

Bachelor of Science in Energy and Environmental Policy

31 credits distributed as follows:
- Creative Arts and Humanities: 9 credits
- History and Cultural Change: 6 credits
- Social and Behavioral Sciences: 6 credits
- Math, Natural Science and Technology: 10 credits
- Up to 3 credits from each of the University Breadth Requirement categories may be used to simultaneously satisfy the College of Engineering Breadth Requirements for this major.

All courses must be passed with a minimum grade of C-.

Bachelor of Arts in Computer Science

33 credits distributed as follows:
- Creative Arts and Humanities: 9 credits
- History and Cultural Change: 9 credits
- Social and Behavioral Sciences: 9 credits
- Math, Natural Science and Technology: 6 credits (typically satisfied by CISC 108 and MATH 210)
- Up to 3 credits from each of the University Breadth Requirement categories may be used to simultaneously satisfy the College of Engineering Breadth Requirements for this major.

All courses must be passed with a minimum grade of C-.

4 additional credits of Math, Natural Science and Technology (are satisfied by MATH 241)

The College of Engineering Breadth Requirement guidelines, which include a list of courses that may be used to satisfy the program’s requirements, may be obtained from the Assistant Dean for Undergraduate Advisement, department offices, and the College of Engineering website at:

http://www.engr.udel.edu/advise/breadth_req.html.

**Dean's Scholar Program**

The Dean's Scholar Program exists to serve the needs of students whose clearly defined educational goals cannot be effectively achieved by pursuing the standard curricula for all existing majors, minors, and interdepartmental majors sponsored by the University. Driven by an overarching passion or curiosity that transcends typical disciplinary bounds and curricula, a Dean's Scholar’s intellectual interests may lead to broad interdisciplinary explorations of an issue or to more intense, in-depth studies in a single field at a level akin to graduate work. However, it is important to note that because engineering degrees are professionally accredited, it is difficult for a Dean’s Scholar to complete an engineering degree within four years. In consultation with faculty advisors and the Assistant Dean, Dean's Scholars design an imaginative and rigorous individual plan of study to meet the total credit hours required for graduation. Contact the Assistant Dean or go to: www.udel.edu/deansscholar for more information and the application.

**Academic Standards**

In order to graduate, College of Engineering students must satisfy the general University requirements for a baccalaureate degree as well as all the requirements of their departmental major.

The engineering majors’ departments have established minimum standards for certain courses and for progression to the sophomore or junior level for each of their majors. These standards are given in the appropriate departmental sections.

Additionally, students pursuing any engineering major (not computer science, information systems or energy and environmental policy) must have at least a 2.0 average in all engineering, mathematics, and science courses.
used to fulfill graduation requirements. If a course is repeated, only the last grade will be used to compute the engineering grade-point average; however, all grades are used to compute the University’s cumulative grade-point index. Credit from courses taken pass/fail cannot be used to complete any engineering degree requirement, unless the course is only offered pass/fail in the engineering curriculum.

Changing Major or Transferring into the College of Engineering

The College of Engineering curricula are very demanding. Therefore, applicants should have a good record in mathematics and science. We recommend that students who wish to enter the College of Engineering contact the office of the Assistant Dean for Undergraduate Advisement at (302) 831-8659 for advisement on the application process.

Students at the University of Delaware who wish to change into a major within the College of Engineering must make a formal request to the appropriate department. This request may be made through the Student Information System using a web-based form.

Students from outside the University of Delaware who wish to transfer into a major in the College of Engineering must make a formal application through the University Admissions Office.

Air Force ROTC
Telephone: (302) 831-2863
http://www.udel.edu/afrotc
Faculty Listing: http://www.udel.edu/afrotc/cadre/index.htm

The Air Force Reserve Officer Training Corps (AFROTC) program trains qualified college students to earn commissions as second lieutenants in the United States Air Force while completing their university course requirements. Commissioning follows the award of a university bachelor’s degree. Those who have a bachelor’s degree and are enrolled in graduate courses are also eligible. Questions concerning applicant qualifications should be directed to the unit’s admission officer.

PROGRAMS OFFERED

FOUR-YEAR PROGRAM
The four-year program is composed of a General Military Course (GMC) and a Professional Officer Course (POC). The first two years, the GMC, provide a general introduction to the Air Force and the various career fields. Students enrolled in the GMC who are not receiving an Air Force scholarship incur no obligation to the Air Force and may elect to discontinue the program at any time. The final two years, the POC, concentrate on developing leadership and management skills and on a study of American defense policy. Students must compete for entry into the POC. If accepted, they must attend field training at a designated Air Force base during the summer following their sophomore year of college. When they return to the university in the fall, they are placed under contract with the Air Force to complete the program and serve a minimum of four years on active duty. Pilot and navigator candidates incur an additional obligation because of specialized training following commissioning.

Students in any major with less than four years, but more than two remaining until graduation may join the program. These students will enter the appropriate GMC class based in their projected graduation date.

TWO-YEAR PROGRAM
The two-year program is normally offered to prospective juniors and graduate students. The academic requirements for this program are identical to the final two years of the four-year program. This option may not be available to students in all academic degrees.

GENERAL REQUIREMENTS FOR POC ACCEPTANCE
Students competing for acceptance as POC cadets must pass the Air Force Officer Qualifying Test, be physically qualified, meet certain age requirements, be in good academic standing, and be able to meet all Air Force enlistment standards.

THE CURRICULUM

ACADEMIC COURSES
Freshman year: The Foundations of the USAF I and II AFSC 110 (fall) and AFSC 111 (spring). Each of these one-credit courses consists of approximately one hour of academic class each week. In combination, these two courses survey the history and organization of the Air Force, its benefits and opportunities, and leadership skills.

Sophomore year: The Evolution of USAF Air/Space Power I and II - AFSC 210 (fall) and AFSC 211 (spring). Each of these one-credit courses consists of approximately one hour of academic class each week. These two GMC courses survey
the history of air power from the 18th century to the present.

GMC courses are open to all freshman and sophomore students.

Junior year: Leadership Studies I and II-AFSC 310 (fall) and AFSC 311 (spring). Each of these three-credit courses consists of three hours of academic classes each week. Here the student is introduced to leadership and management concepts. The courses are designed to provide a foundation for basic leadership and management skills, with emphasis on communications.

Senior year: National Security Affairs I and II-AFSC 410 (fall) and AFSC 411 (spring). Each of these three-credit courses consists of three hours of academic classes each week. These courses focus on our national security policy-its evolution, actors, processes, and current issues. Emphasis is also given to military professionalism, military justice, and communication skills.

POC courses are open to all juniors and seniors.

LEADERSHIP LABORATORY
Leadership laboratory is required for students who are members of the Air Force Reserve Officer Training Corps and are eligible to pursue a commission as determined by the Professor of Aerospace Studies. Leadership laboratory is scheduled for two hours per week for GMC and for three hours per week for POC.

PHYSICAL FITNESS
Members of the Air Force Reserve Officer Training Corps are required to maintain certain physical fitness standards. Physical training activities are scheduled twice a week for one hour each. In order to participate, members must have a valid DoDMERB physical or sports physical. Forms to document the sports physical are available at the detachment and on-line.

SCHOLARSHIPS AVAILABLE
Air Force ROTC scholarships are available to qualified students in all majors and are based on the whole-person concept. Scholarships are awarded in varying amounts and may be used towards tuition and some mandatory fees. All Air Force scholarships include a yearly book stipend and a tax-free monthly allowance. Students who accept these scholarships enter the AFROTC program as a contract cadet and incur a four-year active duty service commitment.

The University of Delaware also offers scholarships to students enrolled in the AFROTC program. These scholarships may be used towards tuition or room charges and are offered each semester to qualified students in all majors based on merit.

Contact the unit’s admission officer for current details.

AIR FORCE ROTC NURSING PROGRAM
Air Force ROTC makes it possible for qualified nursing school students to enroll in its programs and, upon completion of all academic requirements, receive a commission as a second lieutenant in the United States Air Force in the nursing career field. Scholarships are available to qualified applicants.

BACHELOR OF BIOMEDICAL ENGINEERING (BBE)
Michele Schwander
Telephone: (302) 831-6234
E-mail: schwande@udel.edu

The Biomedical Engineering Program is an interdisciplinary academic program in the College of Engineering that offers a Bachelor of Biomedical Engineering, including an Honors Degree option.

Biomedical Engineering is defined by the National Institutes of Health (NIH) as follows:
“Biomedical Engineering integrates physical, chemical, mathematical, and computational sciences and engineering principles to study biology, medicine, behavior and health. It advances fundamental concepts, creates knowledge from the molecular to the organ systems levels, and develops innovative biologies, materials, processes, implants, devices, and informatics approaches for the prevention, diagnosis, and treatment of disease, for patient rehabilitation, and for improving health.”

The aim of our program is to provide students with the training necessary to pursue a career in medicine, engineering or biomedical research. Our program is designed to provide students with sufficient biomedical coursework for advanced training at medical school or physical therapy school or other allied health professions. Core biomedical courses are taught early in the program so that students will be well prepared to do well on the MCAT or GRE exam. The program also presents a broad background in chemical, mechanical and electrical engineering so that students will be prepared for graduate school...
in engineering. The breadth of engineering skills will also train students for careers in biomedical engineering industries, such as in medical devices or pharmaceuticals. Finally the program is also structured to provide students with the skills to enter careers in biomedical research with a quantitative engineering emphasis.

Technical electives in the program are designed to give students specialized experience in particular areas of biomedical engineering such as biomaterials or biomechanics or biochemical engineering. This allows students to specialize in particular sub-disciplines or to broaden their skill-base.

BACHELOR OF BIOMEDICAL ENGINEERING

DEGREE: BACHELOR OF BIOMEDICAL ENGINEERING
MAJOR: BIOMEDICAL ENGINEERING

CURRICULUM

CREDITS
Parenthesized figures indicate year (1 = freshman, 2 = sophomore, 3 = junior, 4 = senior) and semester (F = fall, S = spring).

UNIVERSITY REQUIREMENTS

ENGL 110 Critical Reading and Writing (minimum grade C-) 3 (1F)
First Year Experience (FYE) 0-4
Breadth Requirements 12
Discovery Learning Experience (DLE) 3
Multicultural Course(s) 3

MAJOR REQUIREMENTS

College of Engineering Breadth Requirements 21

The College of Engineering requires 21 total Breadth Requirement credits (essentially 9 credits in addition to the University Breadth Requirement.)

If chosen carefully, up to 3 credits from each of the University Breadth Requirement categories may be used to simultaneously satisfy the College of Engineering Breadth Requirements for this major.

Of the 21 credits, 6 credits must be at the Upper Level (usually 300-level or higher) as designated on the College of Engineering Breadth Requirement list.

Of the 21 credits, 3 credits may be used to satisfy the University Multicultural Requirement (recommended for timely progress toward degree completion.)

All Breadth Requirement coursework must be passed with a minimum grade of C-.

Core Courses

BISC 207 Introductory Biology I 4 (1S)
BISC 208 Introductory Biology II 4 (2F)
BMEG 301 Systems Physiology I 3 (3F)
BMEG 302 Systems Physiology II 3 (3S)
BMEG 310 Bioengineering Mechanics 4 (3F)
BMEG 320 Cell and Tissue Transport 3 (3S)
BMEG 330 Medical Instrumentation/Electronics Lab 3 (3S)
BMEG 450 Biomedical Engineering Design (DLE) 4 (4F)
CHEG 404 Probability and Statistics for Engineers 3 (3S)
CHEM 103 General Chemistry I 4 (1F)
CHEM 104 General Chemistry II 4 (1S)
CHEM 321 Organic Chemistry I 4 (2F)
CHEM 322 Organic Chemistry II 4 (2S)
CHEM 527 Introduction to Biochemistry 3 (3F)
CISC 106 General Computer Science for Engineers 3 (1F)
EGGG 101 Introduction to Engineering (FYE) 2 (1F)
ELEG 305 Signals and Systems 3 (2S)
ELEG 479 Introduction to Medical Imaging Systems 3 (4S)
MATH 241 Analytic Geometry and Calculus A 4 (1F)
MATH 242 Analytic Geometry and Calculus B 4 (1S)
MATH 243 Analytic Geometry and Calculus C 4 (2F)
MATH 305 Applied Mathematics for Chemical Engineers 3 (2S)
MEEG 483 Orthopaedic Biomechanics 3 (3S)
MSEG 302 Materials Science for Engineers 3 (3F)
MSEG 460 Biomaterials and Tissue Engineering 3 (4F)
PHIL 444 Medical Ethics 3 (4S)
PHYS 207 Fundamentals of Physics I 4 (2F)
PHYS 208 Fundamentals of Physics II 4 (2S)

NOTES:

Italicized courses are under development. See website for course descriptions.

For students desiring more advanced training in mathematics, the 2-course sequence of MATH 351 and MATH 352 or MATH 351 and MATH 353 may be substituted for MATH 305 and one Technical Elective.

PHIL 444 counts as an Upper Level Breadth Requirement.

TECHNICAL ELECTIVES

Students must take 12 credits (usually 4 courses) of Technical Electives from the following list.
Independent Study, Senior Research, and additional courses for satisfying this requirement can be approved by the advisor.

BMSC 630 Human Movement Control 3
CHEG 420 Biochemical Engineering 3
CHEG 621 Metabolic Engineering 3
CHEM 443 Physical Chemistry 3
ELEG 418 Digital Control Systems 3
ELEG 471 Mathematical Physiology 3
ELEG 478 Introduction to Nano and Biophotonics 3
ELEG 680 Immunology for Engineers 3
MEEG 482 Clinical Biomechanics 3
MEEG 485 Control of Human Movement 3
MEEG 612 Biomechanics of Human Movement 3
MSEG 630 Introduction to Science and Engineering of Polymer Systems 3
MSEG 632 Principles of Polymerization 3
MSEG 635 Principles of Polymer Physics 3
UNIV 401 Senior Thesis 2-4
UNIV 402 Senior Thesis 2-4

CREDITS TO TOTAL A MINIMUM OF 126

HONORS BACHELOR OF BIOMEDICAL ENGINEERING

A recipient of Honors Bachelor of Biomedical Engineering must satisfy the following:

All requirements for the Bachelor of Biomedical Engineering degree.
All generic University requirements for the Honors Degree. Graduate courses approved for this purpose by the department may be counted as Honors courses.

Chemical Engineering

Catherine Stoner
Telephone: (302) 831-1290
E-mail: cstoner@udel.edu
http://www.che.udel.edu
Faculty Listing: http://www.che.udel.edu/directory/faculty.html

The Department of Chemical Engineering offers a program leading to the Bachelor of Chemical Engineering, including an Honors Degree option. Chemical Engineering is a combination of biology, chemistry, mathematics, and physics with the art and creativity of engineering. The department has much more inclusive descriptions of the profession for those interested.

The Educational Objectives of our Department are:

To provide students with the breadth of educational opportunities in the chemical and biological sciences and in engineering that will enable them to pursue productive careers.
To maintain an environment that enables students to identify and pursue their personal and professional goals within an innovative educational program that is rigorous and challenging as well as flexible and supportive.
To educate graduates who will be able to apply their knowledge of chemical engineering, including their problem solving, analytical, design, and communication skills, in the private or public sectors and/or in the pursuit of more advanced degrees.
To cultivate graduates who will actively seek to provide technical, educational, public sector and/or business leadership in a rapidly changing, increasingly technological, global society and who recognize their professional responsibility toward the betterment of our community.

The Department of Chemical Engineering also offers a minor in Biochemical Engineering designed for those students with special interest in the pharmaceutical and biotechnology industries. The curriculum for the Biochemical Engineering minor consists of a sequence of courses in the biological and biochemical sciences and their engineering applications (see description below). A student can fulfill the requirements of both the Bachelor in Chemical Engineering and a minor in Biochemical Engineering in four academic years.

The early introduction to the discipline enables the student who has made an inappropriate choice to transfer out of the chemical engineering program without loss of status. However, it also makes it difficult for students to transfer into the program during the sophomore or junior years.

BACHELOR OF CHEMICAL ENGINEERING - CHEMICAL ENGINEERING

Parenthesized figures indicate year (1 = freshman, 2 = sophomore, 3 = junior, 4 = senior) and semester (F = fall, S = spring).

UNIVERSITY REQUIREMENTS
ENGL 110 Critical Reading and Writing (minimum grade C-) 3 (1F)
First Year Experience (FYE) 0-4
Discovery Learning Experience (DLE) 3
Breadth Requirements 12
### MAJOR REQUIREMENTS

**College of Engineering Breadth Requirements 21**
The College of Engineering requires 21 total Breadth Requirement credits (essentially 9 credits in addition to the University Breadth Requirement.)

If chosen carefully, up to 3 credits from each of the University Breadth Requirement categories may be used to simultaneously satisfy the College of Engineering Breadth Requirements for this major.

Of the 21 credits, 6 credits must be at the Upper Level (usually 300-level or higher) as designated on the College of Engineering Breadth Requirement list.

Of the 21 credits, 3 credits may be used to satisfy the University Multicultural Requirement (recommended for timely progress toward degree completion.)

All Breadth Requirement coursework must be passed with a minimum grade of C-.

### Core Courses

**CHEG 112** Introduction to Chemical Engineering 3 (1S)

**CHEG 231** Chemical Engineering Thermodynamics 3 (2F)

**CHEG 320** Engineering Economics and Risk Assessment 3 (3S)

**CHEG 325** Chemical Engineering Thermodynamics 3 (2S)

**CHEG 332** Chemical Engineering Kinetics 3 (3F)

**CHEG 341** Fluid Mechanics 3 (3F)

**CHEG 342** Heat and Mass Transfer 3 (3S)

**CHEG 345** Chemical Engineering Laboratory I 3 (3S)

**CHEG 401** Chemical Process Dynamics and Control 3 (4F)

**CHEG 432** Chemical Process Analysis (DLE) 3 (4S)

**CHEG 443** Mass Transfer Operations 3 (4F)

**CHEG 445** Chemical Engineering Laboratory II 3 (4F)

**CHEM 111** General Chemistry 3 (1F)

**CHEM 112** General Chemistry 3 (1S)

**CHEM 220** Quantitative Analysis 3 (2F)

**CHEM 221** Quantitative Analysis Laboratory 1 (2F)

**CHEM 331** Organic Chemistry 3 (3F)

**CHEM 332** Organic Chemistry 3 (3S)

or **CHEM 527** Introductory Biochemistry

**CHEM 333** Organic Chemistry Laboratory I (lecture only) 1 (3F)

**CHEM 444** Physical Chemistry 3 (2S)

**CHEM 445** Physical Chemistry Laboratory I 1 (2S)

The student has the option of taking two credits of CHEM 333 Organic Chemistry Laboratory (laboratory and lecture) and not taking CHEM 445 Physical Chemistry Lab I.

**CISC 106** General Computer Science for Engineers 3 (1F)

**EGGG 101** Introduction to Engineering (FYE) 2 (1F)

**MATH 242** Analytic Geometry and Calculus B 4 (1F)

**MATH 243** Analytic Geometry and Calculus C 4 (1S)

**MATH 305** Applied Mathematics for Chemical Engineering 3 (2S)

**MSEG 302** Materials Science for Engineers 3 (2F)

**PHYS 207** Fundamentals of Physics I 4 (1S)

**PHYS 208** Fundamentals of Physics II 4 (2F)

### TECHNICAL ELECTIVES

Students must complete a minimum of 21 credits of General Technical and Chemical Engineering Elective courses. The student must take four General Technical Electives (12 credits) and three Chemical Engineering Electives (9 credits) OR, upon approval by her/his academic advisor, take three General Technical Electives (9 credits) and four Chemical Engineering Electives (12 credits).

**CHEM 111** General Chemistry 3 (1F)

**CHEM 112** General Chemistry 3 (1S)

**CHEM 220** Quantitative Analysis 3 (2F)

**CHEM 221** Quantitative Analysis Laboratory 1 (2F)

**CHEM 331** Organic Chemistry 3 (3F)

**CHEM 332** Organic Chemistry 3 (3S)

or **CHEM 527** Introductory Biochemistry

**CHEM 333** Organic Chemistry Laboratory I (lecture only) 1 (3F)

### General Technical Electives 9-12

The purpose of the technical electives is to advance the scientific or engineering background of the chemical engineers. The technical electives program consists of a minimum of twelve credits taken from the College of Engineering and the College of Arts and Sciences (see below). At least two courses (six credits) must be at the intermediate level (generally 300-600). Students should select their technical electives in the spring of sophomore year to avoid scheduling conflicts. Students should formulate an academic plan for their technical and Chemical Engineering electives with the assistance of their academic advisor.

The technical elective program is under constant review by the faculty. An updated list is available in the department office, and a formal mechanism exists to make substitutions coupled with the Chemical Engineering Technical Electives to obtain a technical concentration.

**Chemical Engineering Electives 9-12**

The curriculum provides three Chemical Engineering Electives in the senior year. In
addition, the student can exchange one of the General Technical Electives provided in the senior year for a Chemical Engineering Elective upon approval of the academic advisor. These courses are intended to provide some flexibility in selecting a Chemical Engineering program at the advanced level. Students should decide with the assistance of their advisor if they should conduct a program of independent research and then choose their course elective(s). Chemical Engineering Electives are defined as follows: any 400-level non-core Chemical Engineering course; UNIV 401/UNIV 402 Senior Thesis (directed by a Chemical Engineering faculty); any 600- or 800-level course in Chemical Engineering. Courses at the 600 and 800-level are graduate courses open, with the consent of the instructor, to students with senior standing. Only 6 credits may be taken as research credit fulfilling the Chemical Engineering Elective requirements.

CREDITS TO TOTAL A MINIMUM OF 126

CONCENTRATIONS
The General Technical Electives and the Chemical Engineering Electives can be coupled to provide a more intense concentration in an area of interest. The grouping below is an example of this approach.

CHEMISTRY
CHEM 457 Inorganic Chemistry
CHEM 527 Introductory Biochemistry
CHEG 606 Introduction to Catalysis
CHEG 616 Chemistry and Physics of Surfaces and Interfaces
CHEG 617 Colloid Science and Engineering

HONORS BACHELOR OF CHEMICAL ENGINEERING

Engineering must satisfy the following:

All requirements for the Bachelor of Chemical Engineering degree.
All generic University requirements for the Honors Degree (see the Honors Experience). Graduate courses approved for this purpose by the department may be counted as Honors courses.

DEPARTMENTAL STANDARDS
The department has rigorous standards for admission into the courses in the department. These standards have evolved over time and are intended to promote success in the sequential development of the material. In general, students must have a minimum grade of C- in all chemical engineering prerequisite courses to qualify for admission to the next course. Please read the course descriptions for the specific prerequisites and corequisites.

GRADUATION REQUIREMENTS

A minimum grade of C- in all other Chemical Engineering courses counted towards graduation.
A biology requirement that can be fulfilled by any of the following three options:
Advance Placement – a score of 4 or 5 on the College Board Biology AP exam or a score of 6 or 7 on the International Baccalaureate Higher Level exam.
Introductory Biology (BISC 207) or an equivalent course as approved by the student’s academic advisor
Biochemistry (CHEM 527, 3 credits) or equivalent.

MINOR IN BIOCHEMICAL ENGINEERING

A minor in Biochemical Engineering may be earned by a student in any University bachelor’s degree program through successful completion of a minimum of 19 credits as described below. This degree provides students with an opportunity to study new advances in biochemistry and the biological sciences integrated with engineering analysis. Before beginning these courses the student must meet the required course prerequisites. A minimum grade of C- is required in all of the courses completed for the minor.

To obtain a Minor in Biochemical Engineering the student must take the following four required courses:
BISC 207 Introductory Biology I
BISC 401 Molecular Biology of the Cell
CHEG 420 Biochemical Engineering
CHEM 527 Introduction to Biochemistry or CHEM 641/CHEM 642 Biochemistry I/II (sequence may substitute for CHEM 527)

AND the students must take any TWO of the following courses:
BISC 403 Genetic and Evolutionary Biology
BISC 471 Introductory Immunology
BISC 484 Computer Based Genetics Laboratory
CHEG 460 Introduction to Systems Biology
CHEG 621 Metabolic Engineering
CHEM 643 Intermediary Metabolism
CHEM 644 Mechanisms of Enzyme Catalysis
CHEM 645 Protein Structure and Function
Civil and Environmental Engineering

CHEM 646 DNA-Protein Interactions
CHEM 648 Membrane Biochemistry
CHEM 649 Molecular Biophysics
CHEM 686 Biophysical Chemistry
MEEG 486 Cell and Tissue Transport
UNIV 401/UNIV 402
Senior Thesis (3 credits, upon approval)

Other courses in Chemical Engineering, Chemistry or Biology can be included in the list with the prior approval of Professor Anne Robinson at (302) 831-0550 or asr@udel.edu. For inquiries about the Biochemical Engineering Minor, please contact Professor Robinson.

MASTERS-BACHELORS PROGRAM

Under unusual circumstances, a highly-qualified student may earn a Bachelor of Chemical Engineering and a Masters of Chemical Engineering in four years. This program assumes that the student enters with advanced sophomore standing and is able to cope with at least one term of a substantial overload. Interested students should contact the department for further information and a sample schedule. It should be noted that, in order to ensure a broad educational experience, the Department does not admit Delaware undergraduates to its PhD program unless they have at least three years of industrial experience or have earned a masters degree at another institution.

Civil and Environmental Engineering
Telephone: (302) 831-2442
http://www.ce.udel.edu
Faculty Listing: http://www.ce.udel.edu/ directories/faculty.html

The Civil and Environmental Engineering Department offers programs which lead to the degrees of Bachelor of Civil Engineering and Bachelor of Environmental Engineering, both with Honors Degree options, as well as minors in Civil Engineering and Environmental Engineering.

Traditionally, civil engineering has been identified with the planning and design of constructed facilities such as dams, bridges, buildings, roads, waterways, and tunnels. Modern civil engineering now addresses larger segments of societal infrastructure such as mass transportation systems, water resource exploration and management, environmental protection, coastal management, and off-shore structures. The Civil Engineering curriculum includes specialization options in structural engineering, geotechnical engineering, environmental engineering, hydraulic and ocean engineering, and transportation and construction engineering as shown by the listed Technical Electives.

The Educational Objectives of the Civil Engineering degree program are as follows:

Graduates will be prepared with a solid foundation in mathematics, sciences, and technical skills needed to analyze and design civil infrastructure systems.

Graduates will possess strong written, oral, and graphical communications skills, and will be able to function on multi-disciplinary teams.

Graduates will be familiar with current and emerging socioeconomic issues and the global context in which civil engineering is practiced.

Graduates will have an understanding of professional ethics and their societal responsibilities as a practicing engineer.

Graduates will have the ability to obtain professional licensure, and will recognize the need for engaging in life-long learning.

Graduates will have the necessary qualifications for employment in civil engineering and related professions and for entry into advanced studies.

Areas concerned with pollution control, water supply, and water resource management are now considered to comprise the distinct discipline of Environmental Engineering.

The Environmental Engineering curriculum is focused on causes, control, and prevention of environmental contamination, environmental facilities design and construction, and pollution transport and control processes.

The Educational Objectives of the Environmental Engineering degree program are as follows:

Graduates will be prepared with a solid foundation in mathematics, sciences, and technical skills needed to analyze and design environmental engineering systems.

Graduates will possess strong written and oral communications skills.

Graduates will be familiar with current and emerging environmental engineering and global issues, and have an understanding of ethical and societal responsibilities.

Graduates will have the ability to obtain professional licensure, and will recognize the need for engaging in life-long learning.

Graduates will have the necessary
qualifications for employment in environmental engineering and related professions, for entry into advanced studies, and for assuming eventual leadership roles in their professions.

DEPARTMENTAL POLICIES
In general, 300- and 400-level CIEG courses are open only to students majoring in civil or environmental engineering. Students who have declared a civil engineering or an environmental engineering minor and students enrolled in other departments of the College of Engineering may be enrolled in 300- and 400-level courses with the approval of their home department advisor. In some instances, other students may be permitted to enroll in selected 300 and 400-level courses, but they must have the permission of both the course instructor and the chair of the Civil and Environmental Engineering Department.

The Department has developed standards that require minimum grades in certain courses. These standards are intended to promote success in the sequential development of the curriculum. The requirements for the civil and environmental engineering majors are as follows:

CIVIL ENGINEERING
A minimum grade of C- in MATH 241 and MATH 242
A minimum grade of C- in CHEM 103.
A minimum grade of C- in PHYS 207.

ENVIRONMENTAL ENGINEERING
A minimum grade of C- in MATH 241, MATH 242, and MATH 243
A minimum grade of C- in CHEM 111 and CHEM 112 or CHEM 103 and CHEM 104
A minimum grade of C- in PHYS 207
A minimum grade of C- in CIEG 233

BACHELOR OF CIVIL ENGINEERING - CIVIL ENGINEERING
Parenthesized figures indicate year and semester in which the course should be taken. (1 = freshman, 2 = sophomore, 3 = junior, 4 = senior) and semester (F = fall, S = spring).

UNIVERSITY REQUIREMENTS
ENGL 110 Critical Reading and Writing (minimum grade C-) 3 (1F)
FirstYear Experience (FYE) 0-4
Breadth Requirements 12

Discovery Learning Experience (DLE) 3
Multi-cultural Course(s) 3

MAJOR REQUIREMENTS
College of Engineering Breadth Requirements 21
The College of Engineering requires 21 total Breadth Requirement credits (essentially 9 credits in addition to the University Breadth Requirement.)

If chosen carefully, up to 3 credits from each of the University Breadth Requirement categories may be used to simultaneously satisfy the College of Engineering Breadth Requirements for this major.

Of the 21 credits, 6 credits must be at the Upper Level (usually 300-level or higher) as designated on the College of Engineering Breadth Requirement list.

Of the 21 credits, 3 credits may be used to satisfy the University Multicultural Requirement (recommended for timely progress toward degree completion.)

All Breadth Requirement coursework must be passed with a minimum grade of C-.

Core Courses
ENGL 410 Technical Writing 3 (4F)
COMM 212 Oral Communications in Business 3 (2F)
CHEM 103 General Chemistry 4 (1F)
CISC 106 General Computer Science for Engineers 3 (1F)
MATH 241 Analytic Geometry and Calculus A 4 (1F)
MATH 242 Analytic Geometry and Calculus B 4 (1F)
MATH 243 Analytic Geometry and Calculus C 4 (2F)
MATH 351 Engineering Mathematics I 3 (2S)
MATH 353 Engineering Mathematics III 3 (3F)
PHYS 207 Fundamentals of Physics I 4 (2F)
CHEM 104 General Chemistry 4 (1S)
GEOL 107 General Geology I 4 (1S)
PHYS 208 Fundamentals of Physics II 4 (1S)
PHYS 245 Introduction to Electricity and Electronics 4 (1S)
BISC 207 Introductory Biology I 4 (1S)
BISC 208 Introductory Biology II 4 (S)
MSEG 302 Materials Science for Engineers 3 (2S)
EGGG 101 Introduction to Engineering 2 (1F)
CIEG 161 Freshman Design 3 (1S)
CIEG 211 Statics 3 (2F)
CIEG 212 Solid Mechanics 3 (2S)
CIEG 213 Civil Engineering Materials Laboratory 1 (2S)
CIEG 301 Structural Analysis 4 (3F)
CIEG 302 Structural Design 4 (3S)
CIEG 305 Fluid Mechanics 3 (3F)
CIEG 306 Fluid Mechanics Laboratory 1 (3F)
CIEG 311 Dynamics 3 (2S)
CIEG 315 Probability and Statistics for Engineers 3 (3S)
CIEG 320 Soil Mechanics 3 (3F)
CIEG 321 Geotechnical Engineering 3 (3S)
CIEG 323 Soil Mechanics Laboratory 1 (3F)
CIEG 331 Environmental Engineering 3 (3S)
CIEG 351 Transportation Engineering 3 (3S)
CIEG 440 Water Resources Engineering 3 (4F)
CIEG 451 Transportation Engineering Laboratory 1 (3S)
CIEG 461 Senior Design Project 4(4F)
CIEG 486 Engineering Project Management 3 (4F)

TECHNICAL ELECTIVES 9
Three courses must be taken; see current department technical elective listing. This technical elective program is under constant review by the faculty. An updated list is available in the department office. Students should check with their advisors before selecting courses and should be aware that a formal mechanism exists to provide additional flexibility in the selection of their technical elective courses.

CREDITS TO TOTAL A MINIMUM OF 126

TECHNICAL ELECTIVES

The required course curriculum gives students a broad introduction to all the major areas of civil engineering offered by the program: Structural and Geotechnical Engineering, Environmental Engineering and Water Resources, Hydraulics and Ocean Engineering, and Transportation and Construction Engineering.

In addition, three technical elective courses in the Civil Engineering curriculum give students the opportunity to complete their education by concentrating in an area of special interest. The technical electives can also be chosen to provide a more general civil engineering education.

The following is a list of departmental technical electives approved for a concentration in one of the above mentioned areas or in general civil engineering. Some of these courses may not be offered a particular year. A current list is available in the department office. Some courses offered in other departments may also be approved as technical electives. Students should check with their advisors before selecting courses.

General Civil Engineering
CIEG 401 Introduction to the Finite Element Method
CIEG 407 Building Design
CIEG 409 Forensic Engineering
CIEG 452 Transportation Facilities Design
CIEG 471 Introduction to Coastal Engineering

Environmental and Water Resource Engineering
CIEG 430 Water Quality Modeling
CIEG 433 Hazardous Waste Management
CIEG 436 Recycling & Waste Management
CIEG 437 Water and Wastewater Quality
CIEG 443 Watershed Engineering, Planning and Design
CIEG 468 Principles of Water Quality Criteria
CIEG 498 Groundwater Flow & Contaminant Transport

BISC 641 Microbial Ecology
BREG 628 Land Application of Wastes
CHEM 213 Elementary Organic Chemistry
CHEM 214 Elementary Biochemistry
CHEM 220 Quantitative Analysis
CHEM 418 Introduction to Physical Chemistry
ELEG 681 Remote Sensing of Environment
GEOL 421 Environmental and Applied Geology

Hydraulic and Ocean Engineering
CIEG 401 Introduction to the Finite Element Method
CIEG 407 Building Design
CIEG 422 Earth Structures Engineering
CIEG 437 Water and Wastewater Quality
CIEG 471 Introduction to Coastal Engineering

Structures and Geotechnical Engineering
CIEG 401 Introduction to the Finite Element Method
CIEG 407 Building Design
CIEG 408 Introduction to Bridge Design
CIEG 409 Forensic Engineering
CIEG 421 Foundation Engineering
CIEG 422 Earth Structures Engineering
CIEG 427 Deep Foundations
CIEG 428 Ground Improvement Methods

Transportation and Construction Engineering
CIEG 452 Transportation Facilities Design
CIEG 453 Roadway Geometric Design
CIEG 454 Urban Transportation Planning
GEOG 328 Transportation Geography
STAT 420 Data Analysis and Nonparametric Statistics
BACHELOR OF ENVIRONMENTAL ENGINEERING

HONORS BACHELOR OF CIVIL ENGINEERING

A recipient of the Honors Bachelor of Civil Engineering must satisfy the following:

- All requirements for the Bachelor of Civil Engineering degree.
- All generic University requirements for the Honors Degree. Graduate courses approved for this purpose by the department may be counted as Honors courses.
- The Honors Thesis must be within the disciplines of Civil and Environmental Engineering. It must be supervised by a faculty member from the Department of Civil and Environmental Engineering and successfully presented orally in front of a committee approved by the department Undergraduate Committee.

MINOR IN CIVIL ENGINEERING

A minor in Civil Engineering may be earned by a student in any University bachelor's degree program through successful completion of a minimum of 21 credits in Civil Engineering and engineering mechanics. Before beginning the Civil Engineering courses, the student must meet the required mathematics and physics prerequisites. A grade of C- or better is required in all of the courses completed for the minor. The required Civil Engineering and engineering mechanics courses are the following:

- CIEG 211 Statics 3
- CIEG 212 Solid Mechanics (Lab optional) 3
- CIEG 311 Dynamics 3
- CIEG 305 Fluid Mechanics (Lab optional) 3

Further, an additional 9 credits (3 courses) in Civil Engineering must be taken of which at least 6 credits must be at the 300-level or higher. Those courses shall be selected with the specific advice of an advisor in the Civil and Environmental Engineering department to meet each student's objectives. For students oriented toward earth sciences these might include CIEG 320, CIEG 323 and CIEG 321; for those interested in the environment, CIEG 233 and CIEG 331; for those interested in urban topics, CIEG 331 and CIEG 351; for those with interests in construction and structures, CIEG 301 and CIEG 302; for those interested in the oceans, CIEG 440 and CIEG 471.

Accomplishment of a minor in Civil Engineering has many advantages for students who are earning degrees in other sciences such as geology or in other professional areas such as business administration, but it must be understood that meeting the requirements for a minor in Civil Engineering without fulfilling the remaining requirements for an accredited engineering degree does not provide the breadth and depth of knowledge required to be a Civil Engineer.

BACHELOR OF ENVIRONMENTAL ENGINEERING:
ALL CONCENTRATIONS

UNIVERSITY, COLLEGE, AND MAJOR REQUIREMENTS FOR ALL ENVIRONMENTAL ENGINEERING BACHELORS DEGREE CONCENTRATIONS

Parenthesized figures indicate year and semester in which the course should be taken. (1 = freshman, 2 = sophomore, 3 = junior, 4 = senior) and semester (F = fall, S = spring).

UNIVERSITY REQUIREMENTS

ENGL 110 Critical Reading and Writing (minimum grade C-) 3
First Year Experience (FYE) 0-4
Breadth Requirements 12
Discovery Learning Experience (DLE) 3
Multi-cultural Courses 3

MAJOR REQUIREMENTS

College of Engineering Breadth Requirements 21
The College of Engineering requires 21 total Breadth Requirement credits (essentially 9 credits in addition to the University Breadth Requirement.)

If chosen carefully, up to 3 credits from each of the University Breadth Requirement categories may be used to simultaneously satisfy the College of Engineering Breadth Requirements for this major.

Of the 21 credits, 6 credits must be at the Upper Level (usually 300-level or higher) as designated on the College of Engineering Breadth Requirement list.

Of the 21 credits, 3 credits may be used to satisfy the University Multicultural Requirement (recommended for timely progress toward degree completion).

All Breadth Requirement coursework must be passed with a minimum grade of C-.

Core Courses

ENGL 410 Technical Writing 3 (2F)
MATH 241 Analytic Geometry and Calculus A 4 (1F)
MATH 242 Analytic Geometry and Calculus B 4 (1S)
MATH 243 Analytic Geometry and
electives can then be chosen to further pursue this direction of study, or to provide a more diversified environmental engineering education. All technical electives must be upper level courses in engineering, the sciences, computer science, or mathematics.

The chemistry courses and the core technical electives are listed below for each concentration.

**CREDITS TO TOTAL A MINIMUM OF 125**

### BACHELOR OF ENVIRONMENTAL ENGINEERING - ENVIRONMENTAL ENGINEERING

**ENVIRONMENTAL FACILITIES DESIGN AND CONSTRUCTION**

Physical and chemical processes for pollutant transport and remediation.

See University and College requirements.

**CHEM 111** General Chemistry* 3  
**CHEM 112** General Chemistry* 3  
**CHEM 220** Quantitative Analysis 3  
**CHEM 221** Quantitative Analysis Laboratory I 1  
**CHEG 325** Chemical Engineering Thermodynamics 3  
**CHEG 332** Chemical Engineering Kinetics 3  
**CHEG 342** Heat and Mass Transfer 3  
**CHEG 443** Physical Chemistry 1 3  
**Additional technical electives, including 3 cr. of Earth Science** 10

*The alternative coursework CHEM 103/CHEM 104 is also acceptable.

**Advisor should be consulted to ensure that the Earth Science requirement is met through an appropriate technical elective.**

### BACHELOR OF ENVIRONMENTAL ENGINEERING - ENVIRONMENTAL ENGINEERING

**CONTAMINANT TRANSPORT AND CONTROL PROCESSES**

### BACHELOR OF ENVIRONMENTAL ENGINEERING - ENVIRONMENTAL ENGINEERING

**ENVIRONMENTAL FACILITIES DESIGN AND CONSTRUCTION**

Engineering and constructing the systems for air, water, and wastewater purification.

See University and College requirements.

**CHEM 103** General Chemistry 4  
**CHEM 104** General Chemistry 4  
**CIEG 212** Solid Mechanics 3  
**CIEG 213** Civil Engineering Materials Lab 1  
**CIEG 301** Structural Analysis 4  
**CIEG 302** Structural Design 4
BISC 641  Microbial Ecology  3  
CHEM 444  Physical Chemistry  
CIEG 321  Geotechnical Engineering  
CIEG 433  Hazardous Waste Management  
CIEG 636  Biological Aspects of Environmental Engineering  
GEOL 421  Environmental and Applied Geology  
GEOL 446  General Geochemistry  
MATH 352  Engineering Mathematics II  
MATH 426  Introduction to Numerical Analysis and Algorithmic Computation  
MSEG 302  Materials Science  
PLSC 608  Environmental Soil Chemistry  
PLSC 619  Soil Microbiology  
Note: This list is not exhaustive. Consult your advisor.

HONORS BACHELOR OF ENVIRONMENTAL ENGINEERING  
A recipient of the Honors Bachelor of Environmental Engineering must satisfy the following:  
All requirements for the Bachelor of Environmental Engineering degree.  
All generic University requirements for the Honors Degree (See Description). Graduate courses approved for this purpose by the department may be counted as Honors courses. The Honors Thesis must be within the disciplines of Civil and Environmental Engineering and successfully presented orally in front of a committee approved by the department Undergraduate Committee.

BACHELOR OF ENVIRONMENTAL ENGINEERING - ENVIRONMENTAL ENGINEERING (ENVIRONMENTAL BIOTECHNOLOGY)  
Biological and microbial aspects of contaminant behavior in natural and engineered systems.  
See University and College requirements.

CHEM 103  General Chemistry  4  
CHEM 104  General Chemistry  4  
CHEM 331  Organic Chemistry  3  
CHEM 333  Organic Chemistry Lab  1  
PLSC 319  Environmental Soil Microbiology  4  
BISC 300  Introduction to Microbiology  4  
CHEM 342  Introduction to Biochemistry  3  
Additional technical electives, including 3 cr. of Engineering topics*  9  
*Advisor should be consulted to ensure that the Engineering Topic requirement is met through appropriate technical electives.

BACHELOR OF ENVIRONMENTAL ENGINEERING - ENVIRONMENTAL ENGINEERING (WATER RESOURCES AND WATER QUALITY)  
Technical issues associated with providing, maintaining, and improving the supply and quality of surface and groundwaters.  
See University and College requirements.

CHEM 103  General Chemistry  4  
CHEM 104  General Chemistry  4  
EGTE 321  Storm Water Management  4  
CIEG 468  Principles of Water Quality Criteria  3  
CIEG 498  Groundwater Flow and Contaminant Transport  3  
CIEG 430  Water Quality Modeling  3  
Additional technical electives  11  

TECHNICAL ELECTIVES FOR CONCENTRATIONS  
Additional Recommended Technical Electives  Students in any of the concentrations should consider the technical electives listed for the other concentrations. In addition, the following courses qualify as technical electives.

One chemistry course is required (4 credits):  
CHEM 104*  General Chemistry  4  
*Can be replaced with CHEM 112  

Two environmental engineering courses (6 credits) are required:  
CIEG 233*  Environmental Engineering Processes  3  
CIEG 305**  Fluid Mechanics  (Lab optional)  3
BACHELOR OF ARTS - COMPUTER SCIENCE

*Can be replaced with CIEG 331 or CHEG 112
**Can be replaced with MEEG 331 or CHEG 341

Further, an additional 9 credits (3 courses) in environmental engineering must be taken from the following:

CIEG 430 Water Quality Modeling 3
CIEG 433 Hazardous Waste Management 3
CIEG 434 Air Pollution Control 3
CIEG 436 Processing, Recycling, Management of Solid Wastes 3
CIEG 438* Water and Wastewater Engineering 3
CIEG 440 Water Resources Engineering 3
CIEG 498 Groundwater Flow and Containment Transport 3

*Will not count if CIEG 331 is taken in place of CIEG 233

Courses shall be selected from the above list with the specific advice of an advisor in the Civil and Environmental Engineering department to meet each student's objectives. Other courses in Civil and Environmental Engineering may be included in the above list with prior approval of a representative from the Department of Civil and Environmental Engineering. For inquiries about the environmental engineering minor contact Professor Pei Chiu at (302) 831-3104 (pei@ce.udel.edu).

Civil and Chemical engineering majors would be able to pursue the minor by selecting their required technical and science electives appropriately. No additional credits beyond what is required by their major would be necessary to obtain an Environmental Engineering minor for these students. Mechanical Engineering students would need to select their required technical electives appropriately and take one additional course - CHEM 104.

4+1 Bachelor of Environmental Engineering/Master of Civil Engineering
Telephone: (302) 831-2442
http://www.ce.udel.edu
Faculty Listing: http://www.ce.udel.edu/directories/faculty.html

Well-qualified Civil and Environmental Engineering majors may apply to the 4+1 program which would culminate in the student earning a Bachelor degree in Civil Engineering (BCE) or Environmental Engineering (BENV) and a Master of Civil Engineering (MCE) degree within 5 years. The program is limited to University of Delaware undergraduates pursuing the BCE or BENV degree, with a minimum Grade Point Average of 3.25 at the time of application. Students must complete at least 90 credits toward the undergraduate degree before they can be enrolled in the program. Only full-time students are eligible.

Computer and Information Sciences
Telephone: (302) 831-2712
E-mail: ugradprgm@cis.udel.edu
http://www.cis.udel.edu
Faculty Listing: http://www.cis.udel.edu/people/faculty

The Department of Computer and Information Sciences offers four-year undergraduate programs leading to one of three degrees. The Bachelor of Arts degree in Computer Science is intended for students who want the breadth of a liberal arts education with a major in computer science. The Bachelor of Science degree in Computer Science provides a strong technical education in computer systems, software development, computational applications, and theory of computation. The Bachelor of Science degree in Information Systems is designed for students who want to apply expertise in computer science to the solution of business problems. In conjunction with the University Honors Program, the Department also offers a program of study leading to an Honors BA or an Honors BS. Honors students are strongly encouraged to become involved in faculty research projects. The BA degree requires a minimum grade of C- in every CISC course used toward the major.

Courses are also provided for students in other areas who desire an understanding of the application of computers to the subject of their major interest. The Department offers minors in bioinformatics and computer science. In many courses, problem solutions require the use of computers located throughout campus. These computers are available to undergraduate students for use with both coursework and research.

BACHELOR OF ARTS - COMPUTER SCIENCE

UNIVERSITY REQUIREMENTS
ENGL 110 Critical Reading and Writing (minimum grade C-) 3
First Year Experience (FYE) 0-4
Breadth Requirement 12
BACHELOR OF SCIENCE - COMPUTER SCIENCE

Discovery Learning Experience (DLE) 3
Multicultural Courses 3

MAJOR REQUIREMENTS
College of Engineering Breadth Requirements 33
The College of Engineering requires 33 total Breadth Requirement credits distributed as follows (essentially 21 credits in addition to the University Breadth Requirement):

Creative Arts and Humanities: 9 credits
History and Cultural Change: 9 credits
Social and Behavioral Sciences: 9 credits
Math, Natural Science and Technology: 6 credits (typically satisfied by CISC 108 and MATH 210)

If chosen carefully, up to 3 credits from each of the University Breadth Requirement categories may be used to simultaneously satisfy the College of Engineering Breadth Requirements for this major.

Of the 33 credits, 3 credits may be used to satisfy the University Multicultural Requirement (recommended for timely progress toward degree completion).

All Breadth Requirement coursework must be passed with a minimum grade of C-.

Four additional credits of Math, Natural Science and Technology (satisfied by MATH 241) are also required.

Core Courses
CISC 108 Introduction to Computer Science I 3
CISC 181 Introduction to Computer Science II 3
CISC 220 Data Structures 3
CISC 260 Machine Organization and Assembly Language 3
CISC 275 Introduction to Software Engineering 3

Eighteen credits of computer science technical electives numbered 301 or above, approved by the student’s advisor 18
MATH 210 Discrete Mathematics I 3
MATH 241 Analytic Geometry and Calculus A 4

Minimum grade C- in the CISC courses.
Minimum grade C- in MATH 210 for students who wish to take CISC 303 or CISC 304.

SKILLS
Second Writing Requirement (minimum grade C-) 3
A second writing course involving significant writing experience including two papers with a combined minimum of 3,000 words to be submitted for extended faculty critique of both composition and content. This course must be taken after completion of 60 credit hours. Appropriate writing courses are designated in each semester’s Registration Booklet.

Foreign Language (minimum grade D-) 0-12
Completion of the intermediate-level course (107 or 112 or 214) in an ancient or modern language. The number of credits needed and initial placement will depend on the number of years of high school study of foreign language. Students with four or more years of high school work in a single foreign language, or who have gained proficiency in a foreign language by other means, may attempt to fulfill the requirement in that language by taking an exemption examination through the Foreign Languages and Literatures Department.

ELECTIVES
After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF 124

BACHELOR OF SCIENCE - COMPUTER SCIENCE
UNIVERSITY REQUIREMENTS
ENGL 110 Critical Reading and Writing (minimum grade C-) 3
First Year Experience (FYE) 0-4
Breadth Requirement 12
Discovery Learning Experience (DLE) 3
Multicultural Courses 3

MAJOR REQUIREMENTS
College of Engineering Breadth Requirements 21
The College of Engineering requires 21 total Breadth Requirement credits (essentially 9 credits in addition to the University Breadth Requirement).

If chosen carefully, up to 3 credits from each of the University Breadth Requirement categories may be used to simultaneously satisfy the
BACHELOR OF SCIENCE - INFORMATION SYSTEMS

College of Engineering Breadth Requirements for this major.

Of the 21 credits, 6 credits must be at the Upper Level (usually 300-level or higher) as designated on the College of Engineering Requirement list.

Of the 21 credits, 3 credits may be used to satisfy the University Multicultural Requirement (recommended for timely progress toward degree completion).

All Breadth Requirement coursework must be passed with a minimum grade of C-.

Core Courses
CISC 108 Introduction to Computer Science I (minimum grade C-) 3
CISC 181 Introduction to Computer Science II (minimum grade C-) 3
CISC 220 Data Structures (minimum grade C-) 3
CISC 260 Machine Organization and Assembly Language (minimum grade C-) 3
CISC 275 Introduction to Software Engineering 3
CISC 303 Automata Theory 3
CISC 320 Introduction to Algorithms 3
CISC 360 Computer Architecture 3
CISC 361 Operating Systems 3
CISC 475 Advanced Software Engineering 3
An additional twelve credits of Computer Science numbered 301 or above, approved by the student's advisor 12

Twelve credits in advanced courses in an advisor-approved CISC concentration 12

Students are encouraged to explore how other subject areas impact and are impacted by computer science. Approval by the student's CISC advisor is required. Concentration courses must be distinct from other CISC requirements and technical electives.

MATH 205 Statistical Methods 3-4
or
MATH 350 Probability Theory
MATH 210 Discrete Mathematics I (minimum grade C-) 3
MATH 241/MATH 242 Analytic Geometry and Calculus A/B 8

Twelve credits in science courses including one of the following sequences of laboratory science courses: 12
PHYS 207 - PHYS 208 Fundamentals of Physics
or
CHEM 103 - CHEM 104 General Chemistry
or
BISC 207 - BISC 208 Introductory Biology
or
GEOL 105/GEOL 115/GEOL 107 Geological Hazards and Laboratory, General Geology
A course chosen from CISC 304, MATH 349, or a substitute from the list at http://www.cis.udel.edu/drupalWeb/mathrecommendations approved beforehand in writing by the advisor 3-4

ENGL 312 Written Communications in Business 3
or
ENGL 410 Technical Writing
CISC 355 Computers, Ethics and Society 3

ELECTIVES
After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF 124

BACHELOR OF SCIENCE - INFORMATION SYSTEMS

UNIVERSITY REQUIREMENTS
ENGL 110 Critical Reading and Writing (minimum grade C-) 3
First Year Experience (FYE) 0-4
Breadth Requirement 12
Discovery Learning Experience (DLE) 3
Multi-cultural Courses 3

MAJOR REQUIREMENTS
College of Engineering Breadth Requirements 21

The College of Engineering requires 21 total Breadth Requirement credits (essentially 9 credits in addition to the University Breadth Requirement).

If chosen carefully, up to 3 credits from each of the University Breadth Requirement categories may be used to simultaneously satisfy the College of Engineering Breadth Requirements for this major.

Of the 21 credits, 6 credits must be at the Upper Level (usually 300-level or higher) as
designated on the College of Engineering Requirement list. Of the 21 credits, 3 credits may be used to satisfy the University Multicultural Requirement (recommended for timely progress toward degree completion).

All Breadth Requirement coursework must be passed with a minimum grade of C-.

Core Courses
MATH 241 Analytic Geometry and Calculus A 4
MATH 210 Discrete Mathematics I 3
MATH 205 Statistical Methods 4

Laboratory Science Course:
Must be one of the following two-semester sequences: 8
PHYS 207/PHYS 208 Fundamentals of Physics
PHYS 201/PHYS 202 Introductory Physics
CHEM 103/CHEM 104 General Chemistry
BISC 207/BISC 208 Introductory Biology
GEOL 105/GEOL 115/GEOL 107 Geological Hazards and Laboratory, General Geology

ENGL 312 Written Communications in Business or
ENGL 410 Technical Writing 3
COMM 212 Oral Communication in Business 3
CISC 355 Computers, Ethics, and Society 3
CISC 108 Introduction to Computer Science I (minimum grade C-) 3
CISC 181 Introduction to Computer Science II (minimum grade C-) 3
CISC 220 Data Structures (minimum grade C-) 3
CISC 250 Business Telecommunication Networks 3
CISC 275 Introduction to Software Engineering 3
CISC 437 Database Systems 3
CISC 475 Advanced Software Engineering 3
MISY 430 Systems Analysis and Implementations 3
ACCT 207 Accounting I 3
ACCT 208 Accounting II 3
BUAD 306 Operations Management 3
BUAD 309 Management and Organizational Behavior 3
BUAD 301 Introduction to Marketing 3 or
FINC 311 Principles of Finance
MISY 431 Technological Problem Solving 3
MISY 432 Problem Solving Project

Management 3
Electives (3 courses) 9
These 3 additional courses are selected from CISC 260, CISC technical electives numbered 300 or above, BUAD 301, FINC 311, MISY courses numbered 300 or above (except MISY 330) and approved by the student's advisor.

ELECTIVES
In addition to the required courses, sufficient credits must be taken to meet the minimum credits required for the degree.

CREDITS TO TOTAL A MINIMUM OF 124

HONORS BACHELOR OF ARTS:
COMPUTER SCIENCE
HONORS BACHELOR OF SCIENCE:
COMPUTER SCIENCE
HONORS BACHELOR OF SCIENCE:
INFORMATION SYSTEMS

For these honors degrees, the recipient must complete:

All requirements for the corresponding regular degree program: Bachelor of Arts in Computer Science, the Bachelor of Science in Computer Science, or the Bachelor of Science in Information Systems.

All of the University’s generic requirements for the Honors Degree. Note: Graduate courses in CISC numbered 600 or above will count as Honors courses in the major.

The student must have a cumulative grade point index of at least 3.4 at the time of registration for UNIV 401.

MINOR IN BIOINFORMATICS

A minor in bioinformatics consists of a total of 21 or more credits in the Life Sciences and Computer and Information Sciences, including BISC 401, ANFS 644, CISC 220, CISC 437, and CHEM 527. A grade of C- or better must be earned in all required courses for the minor.

Besides these required courses, students wishing to minor in Bioinformatics must complete a senior thesis (6 credits), either by registering for UNIV 401 and UNIV 402, or through department sponsored research (e.g., CISC 466, Independent study). One Life Science and one Computer and Information Science faculty member must direct the research. The senior thesis committee must be composed of the two research directors and one additional member chosen in consultation.
MINOR IN COMPUTER SCIENCE

A minor in computer science consists of a total of 18 or more credits including:

CISC 106 (3 cr) or CISC 108 (3 cr)
CISC 181
CISC 220
CISC 275
Six additional credits of CISC at the 200-level or above should be chosen with the advisor’s approval.

Note that the College of Engineering requires a grade of C- or better in all courses counted towards a minor.

Electrical and Computer Engineering
Telephone: (302) 831-2405
E-mail: dnelson@udel.edu
http://www.ece.udel.edu
Faculty Listing: http://www.ece.udel.edu/people/faculty.php

The Department of Electrical and Computer Engineering offers programs that lead to the degrees of Bachelor of Electrical Engineering and Bachelor of Computer Engineering, both with Honors Degree Options. The Electrical Engineering curriculum prepares graduates to enter the broad profession of modern electrical engineering. The Computer Engineering curriculum is more focused on the application of electrical engineering principles to the design of computers, networks of computers, or sometimes systems that include computers.

Both degrees strive to achieve three program Educational Objectives:

Graduates who choose to follow a career path in industry or government will be successful in obtaining employment and will become productive and valued engineers within their companies.

Graduates who choose to obtain an advanced degree in engineering will be successful in gaining admission to a graduate program and obtaining their desired degree.

Graduates will have the professional skills required to advance into leadership positions within their chosen careers.

Coursework in electrical and computer engineering starts with the first term of the freshman year, with successive years building on prerequisite courses and including an unusually high number of courses with laboratories.

There are four basic parts to the Delaware curriculum in engineering: (1) a core group of courses, (2) a group of foundation electives, (3) an elective group of technical courses, and (4) a “breadth” component that includes six courses in the humanities and social sciences and two in written communications.

The core group consists of required courses in mathematics, chemistry, computer science, and electrical and computer engineering.

Technical electives are chosen from a set of approved courses in the fields of engineering, mathematics, natural science, and computer science. These electives provide the student with the opportunity to study a particular area of interest at a greater depth. The technical elective courses chosen by the student must follow the specific guidelines for the student's major and be approved by the departmental academic advisor. Students must take at least four credits in courses designated as “design.”

The breadth component must include courses from the humanities and from the social sciences, including courses at an advanced level. Electrical and Computer Engineering students must include two writing courses (ENGL 110 and one from a list of four upper level English courses).

Any deviation from these requirements must be approved by the ECE Department Chair or his/her designee.

DEPARTMENTAL REQUIREMENTS

To qualify for sophomore standing, students must have satisfactorily completed MATH 241, MATH 242, CISC 181, PHYS 207, and CPEG 202 by the end of the summer session of their freshman year. With few exceptions, students are expected to complete this program in eight regular semesters. With electrical and computer engineering courses being offered only once each year, it is imperative that students follow as closely as possible the course sequences outlined below.

4+1 Bachelor of Electrical Engineering/Master of Science Electrical & Computer Engineering
Telephone: (302) 831-2405
http://www.ece.udel.edu
Faculty Listing: http://www.ece.udel.edu/people/faculty.php
Talented undergraduates are urged to apply to the ECE department's 4+1 BEE/MSECE and 4+1 BCpE/MSECE programs. The programs allow students to finish both a Bachelors degree and a Masters degree in five years. Students must be accepted into the graduate program, must take 6 of their technical elective credits in 600 level ECE courses acceptable to the ECE graduate program, and must complete all other requirements for the BEE or BCpE degree. More information about the programs can be found at the ECE graduate page in the UD catalog.

**BACHELOR OF ELECTRICAL ENGINEERING - ELECTRICAL ENGINEERING**

Parenthesized figures indicate year and semester in which the course should be taken. (1 = freshman, 2 = sophomore, 3 = junior, 4 = senior) and semester (F= fall, S = spring)

**UNIVERSITY REQUIREMENTS**

ENGL 110 Critical Reading and Writing
(minimum grade C-)
First Year Experience (FYE)
Discovery Learning Experience (DLE)
Breadth Requirements
Multi-cultural Course(s)

**MAJOR REQUIREMENTS**

Breadth Requirements
College of Engineering Breadth Requirements
The College of Engineering requires 21 total Breadth Requirement credits (essentially 9 credits in addition to the University Breadth Requirement.)

If chosen carefully, up to 3 credits from each of the University Breadth Requirement categories may be used to simultaneously satisfy the College of Engineering Breadth Requirements for this major.

Of the 21 credits, 6 credits must be at the Upper Level (usually 300-level or higher) as designated on the College of Engineering Breadth Requirement list.

Of the 21 credits, 3 credits may be used to satisfy the University Multicultural Requirement (recommended for timely progress toward degree completion.)

All Breadth Requirement coursework must be passed with a minimum grade of C-.

Core Courses
One of the following four courses must be taken:

ENGL 301 Expository Writing
ENGL 312 Written Communications in Business
ENGL 410 Technical Writing
ENGL 413 Topics in Professional Writing

EGGG 101 Introduction to Engineering (FYE) 2 (1F)
MATH 241 Analytic Geometry and Calculus A 4 (1F)
MATH 242 Analytic Geometry and Calculus B 4 (1S)
MATH 243 Analytic Geometry and Calculus C 4 (2F)
MATH 341 Differential Equations with Linear Algebra I 3 (2S)
MATH 342 Differential Equations with Linear Algebra II 3 (3F)
CHEM 103 General Chemistry 4 (1F)
PHYS 207 Fundamentals of Physics I 4 (1S)
PHYS 208 Fundamentals of Physics II 4 (2F)
CISC 106 General Computer Science for Engineers 3 (1F)
CISC 181 Introduction to Computer Science II 3 (1S)
CISC 220 Data Structures 3 (2F)
CPEG 202 Introduction to Digital Systems 3 (1S)
CPEG 222 Microprocessor Based Systems 4 (2S)
ELEG 205 Analog Circuits I 4 (2F)
ELEG 305 Signals and Systems 3 (2S)
ELEG 309 Electronic Circuit Analysis I 4 (2S)
ELEG 310 Random Signals and Noise 3 (3S)
ELEG 320 Field Theory I 4 (3F)
ELEG 340 Solid State Electronics 3 (3F)
ELEG 491 Ethics and Impacts of Engineering 2 (4S)

Three of the following five foundation elective courses must be taken: 9
ELEG 306 Digital Signal Processing 3
ELEG 312 Electronic Circuit Analysis II 4
ELEG 403 Communication Systems Engineering 3
ELEG 413 Field Theory II 3
ELEG 418 Digital Control Systems 3

Design Requirement (DLE) 6 (4F/S)
In addition to the content of the normal program, every student must take six credits in ELEG courses designated as “design.” Senior Design I, ELEG 498 (3 credits) will be offered in the fall semester and Senior Design II, ELEG 499 (3 credits) will be offered in the spring semester.

Technical Electives 15
In addition to the design requirement, each student, in consultation with their advisor, must
select a program of technical electives satisfying the following: (1) With some exceptions, technical electives consist of 300-level or above engineering, mathematics, natural sciences, and computer science courses. With the permission of the student's advisor, certain 200-level courses, such as PHYS 211, are permitted. (2) At least 15 technical elective credits must be taken. (3) Of the 15 technical elective credits, at least 9 must be in CPEG or ELEG courses. (4) Of the 9 credits in ELEG or CPEG, at least 6 must be in 400-level or above ELEG or CPEG courses.

CREDITS TO TOTAL A MINIMUM OF 125

HONORS BACHELOR OF ELECTRICAL ENGINEERING

A recipient of the Honors Bachelor of Electrical Engineering must satisfy the following:

All requirements for the Bachelor of Electrical Engineering degree.
All generic University requirements for the Honors Degree. Graduate courses approved for this purpose by the department may be counted as Honors courses.

BACHELOR OF COMPUTER ENGINEERING - COMPUTER ENGINEERING

CURRICULUM

CREDITS

Parenthesized figures indicate year and semester in which the course should be taken. (1 = freshman, 2 = sophomore, 3 = junior, 4 = senior) and semester (F= fall, S = spring)

UNIVERSITY REQUIREMENTS

ENGL 110 Critical Reading and Writing (minimum grade C-) 3 (1F)
First Year Experience (FYE) 0-4
Discovery Learning Experience (DLE) 3
Breadth Requirements 12
Multi-cultural Course(s) 3

MAJOR REQUIREMENTS

Breadth Requirements 21
College of Engineering Breadth Requirements
The College of Engineering requires 21 total Breadth Requirement credits (essentially 9 credits in addition to the University Breadth Requirement.)

If chosen carefully, up to 3 credits from each of the University Breadth Requirement categories may be used to simultaneously satisfy the College of Engineering Breadth Requirements for this major.

Of the 21 credits, 6 credits must be at the Upper Level (usually 300-level or higher) as designated on the College of Engineering Breadth Requirement list.

Of the 21 credits, 3 credits may be used to satisfy the University Multicultural Requirement (recommended for timely progress toward degree completion.)

All Breadth Requirement coursework must be passed with a minimum grade of C-.

Core Courses

One of the following four courses must be taken:

ENGL 301 Expository Writing 3 (3F)
ENGL 312 Written Communications in Business
ENGL 410 Technical Writing
ENGL 413 Topics in Technical Writing

EGGG 101 Introduction to Engineering 2 (1F)
MATH 241 Analytical Geometry and Calculus A 4 (1F)
MATH 242 Analytical Geometry and Calculus B 4 (1S)
MATH 243 Analytical Geometry and Calculus C 4 (2F)
MATH 341 Differential Equations & Linear Alg I 3 (2S)
MATH 342 Differential Equations & Linear Alg II 3 (3F)
PHYS 207 Fundamentals of Physics I 4 (1S)
PHYS 208 Fundamentals of Physics II 4 (2F)
CHEM 103 General Chemistry 4 (1F)
CISC 106 Introduction to Computer Science I 3 (1F)
CISC 181 Introduction to Computer Science II 3 (1S)
CISC 220 Data Structures 3 (2F)
CISC 361 Operating Systems 3 (3S)

Students with adequate programming experience may substitute the CISC 181, CISC 220 and CISC 280 sequence for the CISC 106, CISC 181 and CISC 220 sequence.

CPEG 202 Introduction to Digital Systems 3(1S)
CPEG 222 Microprocessor Systems 4 (2S)
CPEG 323 Introduction to Computer System Engineering 3 (3F)
CPEG 324 Computer Systems Design I 3 (3S)
CPEG 419 Computer Communications Networks 3 (4F)
ELEG 205 Analog Circuits I 4 (2F)
ELEG 305 Signals and Systems 3 (2S)
ELEG 309 Electronic Circuit Analysis I 4 (2S)
ELEG 310 Random Signals and Noise 3 (3S)
ELEG 320 Field Theory I 4 (3F)
must complete a minimum of 21 credits as described below with a minimum grade of C- in each course.

Course Requirements
(1) All students must take the following three courses:
   BISC 207(a) Introductory Biology I 4
   MATH 242 Analytic Geometry and Calculus B 4
   PHYS 202(b) Introductory Physics II 4
   or
   PHYS 208(b) Introductory Physics II 4
(2) And one of the following courses:
   BISC 306 General Physiology 3
   ELEG 471 Mathematical Physiology 3
(3) And two of the following courses(c):
   ELEG 475 Image Processing with Biomedical Applications 3
   ELEG 478 Introduction to Nano and Biophotonics 3
   ELEG 479 Introduction to Medical Imaging Systems 3
   ELEG 676 Bioinformatics and Biosystems Analysis I 3
   ELEG 680 Immunology for Engineers 3
   BISC 627 Neuroscience II 3
   KAAP 688 Electromyographic Kinesiology 3

   TOTAL CREDITS 21
(a) BISC 208 cannot be substituted for BISC 207.
(b) It is understood that PHYS 201/PHYS 207 is taken before PHYS 202/PHYS 208.
(c) The listed 400 and 600-level courses are open to any student who has completed requirements (1) and (2) and the necessary prerequisites (or obtained permission of instructor). Other courses can be included upon approval by the minor administration committee.

Further inquiries about the Bioelectrical Engineering Minor can be made to Professor Sylvain Cloutier at (302) 831-4352 or cloutier@udel.edu.

MINOR IN ELECTRICAL AND COMPUTER ENGINEERING

The minor in Electrical & Computer Engineering (ECE) requires EITHER the successful completion of 15 credits in Computer or Electrical Engineering courses OR the successful completion of 12 credits in Computer or Electrical Engineering courses and the successful
Students pursuing the minor can get advice from the ECE office or from the Associate Chair for Undergraduate Studies in the Electrical and Computer Engineering department.

Accomplishment of a minor in Electrical & Computer Engineering has many advantages but it must be understood that meeting the requirements for a minor in Electrical & Computer Engineering without fulfilling the remaining requirements for an accredited engineering degree does not provide the breadth and depth of knowledge required of an electrical or a computer engineer.

For students in other majors, such as Mechanical Engineering, Physics, or Computer Science, a minor in ECE will help expand their knowledge and capabilities and make them more desirable employees in many jobs.

Energy and Environmental Policy
John Byrne, Director of the Undergraduate Program,
Distinguished Professor of Energy and Climate Policy,
CEED Director
Telephone: (302) 831-8405
http://ceep.udel.edu
Faculty Listing: http://ceep.udel.edu/people

The Center for Energy and Environmental Policy (CEEP), part of the College of Engineering, conducts interdisciplinary research and supports graduate and undergraduate study on the interlocking issues of energy, environment, and development. Work in CEEP is guided by theories of political economy and technology, environment, and society. Research programs currently organized in CEEP include sustainable development, environmental justice, global environmental change, energy efficiency and renewable energy applications, water conservation and management, and comparative energy and environmental policy.

The Center for Energy and Environmental Policy (CEEP) offers an undergraduate degree in the interdisciplinary field of Energy and Environmental Policy (ENEP). The ENEP major offers an integrated set of courses in the fields of social and policy sciences, natural sciences, engineering and analytical methods to prepare its graduates with the necessary knowledge and tools to enter professional positions in the fields of energy and environmental analysis, planning and policy development. Students are provided with the cross disciplinary knowledge and analytical skills to address local, national and global energy and environmental issues in complex, real world contexts. The program’s faculty are drawn from the Colleges of Engineering, Agriculture and Natural Resources, Arts and Sciences, and Business and Economics.

The ENEP undergraduate degree is the only program in the state or region providing an undergraduate major that integrates a cross-disciplinary set of courses in policy analysis, economics, the social and natural sciences, and engineering to address the need to build a positive sustainable energy and environmental future. The unique nature of this major is that it combines the rigor and content knowledge of these disciplines to educate and prepare students to be effective decision makers and problem solvers in the energy and environmental sectors.

The undergraduate major in ENEP is designed to educate and build core competencies and skills for prospective practitioners who will work at the intersections of business, technology, government, research and civil society sectors seeking to improve energy and environmental policy.

Beyond the core courses, majors must choose to specialize in one of three concentrations:

Energy, Economics and Public Policy: provides an understanding of the influence of policy and economics on the development of the energy sector, with special emphases on sustainable energy development.

Energy, Environment and Society: prepares majors to understand and analyze GHG emissions projection scenarios such as those developed by the Intergovernmental Panel on Climate Change (IPCC) and to evaluate technology and policy options related to climate challenges. Coursework in social science, econometrics and statistical analysis as well as science and technology prepares students to conduct energy and environmental scenario analyses, policy simulations, and long-term policy analysis and planning.

Energy, Science and Technology: enables students to understand the scientific and technological constraints and opportunities that can effect sustainable energy development. Courses bridge scientific and technological
knowledge with an understanding of energy and environmental policy.

For all concentrations, students will be prepared to continue their education in graduate study in ENEP and related fields at the master’s level. Each concentration also includes the experience of Internship fieldwork and a senior research paper.

Students transferring into the major from outside the University of Delaware will have their transcripts evaluated on a case-by-case basis.

**UNIVERSITY REQUIREMENTS**

**ENGL 110** Critical Reading and Writing (minimum grade C-) 3

**ENEP 117** (FYE) Science, Society and Energy 1

**Breadth Requirements** 12

**Discovery Learning Experience** (fulfilled by taking ENEP 364: Internship 3

**Multicultural Course** 3

**College of Engineering Breadth Requirements 31**

The College of Engineering requires 31 total Breadth Requirement credits distributed as follows (essentially 19 credits in addition to the University Breadth Requirement):

- Creative Arts and Humanities: 9 credits
- History and Cultural Change: 6 credits
- Social and Behavioral Sciences: 6 credits
- Math, Natural Science and Technology: 10 credits

If chosen carefully, up to 3 credits from each of the University Breadth Requirement categories may be used to simultaneously satisfy the College of Engineering Breadth Requirements for this major.

Of the 21 credits, 3 credits may be used to satisfy the University Multicultural Requirement (recommended for timely progress toward degree completion.)

All courses must be passed with a minimum grade of C-.

**MAJOR REQUIREMENTS**

**Second Writing Course** 3

Three (3) credits chosen from courses designated in online Registration Materials as satisfying the Arts and Sciences Second Writing Course Requirement. (This requirement may be fulfilled through a course taken to complete other course requirements.)

**Core Curriculum**

- **ENEP 250** Introduction to Energy Policy 3
- **PHYS 143** Energy, Technology and Society 3
- **ECON 151** Introduction to Micro-Economics: Prices and Markets 3
- **POSC 220** Introduction to Public Policy 3
- or **UAPP 225** Crafting Public Policy
- **GEOG 236** Conservation of Natural Resources: Global Issues 3

In addition to the Core Curriculum, the Breadth Requirements and the Major Requirements, students must choose one of the following concentrations:

**Energy, Economics and Public Policy Concentration:**

- **Required Advanced Courses** Choose 18 credits from the required advanced course list below.

- **ECON 300** Intermediate Microeconomic Theory 3
- **ENEP 402** Electricity Policy and Planning 3
- **FREC 343/ECON 343** Environmental Economics 3
- **POSC 350** Politics and the Environment 3

One of the following:

- **ENEP 468** Research in Global Energy Policies 3
- **ENEP 470** Readings in U.S. Energy Policy 3

One of the following:

- **ECON 422** Econometric Methods & Models I 3
- **MATH 201** Introduction to Statistical Methods I 3
- **POSC 300** Data Analysis for Political Sciences 3
- **STAT 370** Introduction to Statistical Analysis I 3

**Elective Advanced Courses**

Choose 30 credits from the elective advanced course list below.

(other courses can be added with the approval of the advisor.)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUAD 301</td>
<td>Introduction to Marketing</td>
<td>3</td>
</tr>
<tr>
<td>BUAD 472</td>
<td>Marketing, Society and the Environment</td>
<td>3</td>
</tr>
<tr>
<td>(Prerequisite: BUAD 301)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMM 425</td>
<td>Energy/Environmental Policy, Public Opinion,</td>
<td>3</td>
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<tr>
<td>POSC 425</td>
<td>Media and Politics</td>
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<tr>
<td>ECON 152</td>
<td>Introduction to Macroeconomics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 311</td>
<td>Economics of Developing Countries</td>
<td>3</td>
</tr>
<tr>
<td>ECON 360</td>
<td>Government Regulation of Business</td>
<td>3</td>
</tr>
<tr>
<td>ECON 422</td>
<td>Econometric Methods &amp; Models I</td>
<td>3</td>
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<tr>
<td>ECON 426</td>
<td>Mathematical Economic Analysis</td>
<td>3</td>
</tr>
<tr>
<td>ECON 463</td>
<td>Economics of Regulation</td>
<td>3</td>
</tr>
<tr>
<td>ECON 471</td>
<td>Futures and Options Markets</td>
<td>3</td>
</tr>
<tr>
<td>ECON 471/FREC 471</td>
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<tr>
<td>GEOL 421</td>
<td>Environmental and Applied Geology</td>
<td>3</td>
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<tr>
<td>MATH 201</td>
<td>Introduction to Statistical Methods I</td>
<td>3</td>
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<tr>
<td>MATH 202</td>
<td>Introduction to Statistical Methods II</td>
<td>3</td>
</tr>
<tr>
<td>MATH 221</td>
<td>Calculus I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 241</td>
<td>Analytical Geometry and Calculus A</td>
<td>4</td>
</tr>
<tr>
<td>MATH 242</td>
<td>Analytical Geometry and Calculus B</td>
<td>4</td>
</tr>
<tr>
<td>PHIL 340</td>
<td>Cross Cultural Environmental Ethics</td>
<td>3</td>
</tr>
<tr>
<td>POSC 300</td>
<td>Data Analysis for Political Sciences</td>
<td>3</td>
</tr>
<tr>
<td>POSC 301</td>
<td>State and Local Government</td>
<td>3</td>
</tr>
<tr>
<td>POSC 311</td>
<td>Politics of Developing Nations</td>
<td>3</td>
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<tr>
<td>POSC 323</td>
<td>International Political Economy</td>
<td>3</td>
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<tr>
<td>STAT 370</td>
<td>Introduction to Statistical Analysis I</td>
<td>3</td>
</tr>
<tr>
<td>STAT 371</td>
<td>Introduction to Statistical Analysis II</td>
<td>3</td>
</tr>
<tr>
<td>UAPP 325</td>
<td>Public Policy Analysis</td>
<td>3</td>
</tr>
<tr>
<td>UAPP 410</td>
<td>Making Convincing Policy Arguments</td>
<td>3</td>
</tr>
<tr>
<td>UAPP 419</td>
<td>Policy Leadership and Ethics</td>
<td>3</td>
</tr>
<tr>
<td>UAPP 427</td>
<td>Evaluating Public Policy</td>
<td>3</td>
</tr>
<tr>
<td>UAPP 440</td>
<td>Contemporary Policy Issues</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language (up to 8 credits)</td>
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<td></td>
</tr>
<tr>
<td>Energy, Environment and Society Concentration:</td>
<td>Requested Advanced Courses</td>
<td></td>
</tr>
<tr>
<td>ENEP 426</td>
<td>Climate: Science, Policy and Political Economy</td>
<td>3</td>
</tr>
<tr>
<td>POSC 350</td>
<td>Politics and the Environment</td>
<td>3</td>
</tr>
<tr>
<td>POSC 425/COMM425</td>
<td>Energy/Environmental Policy, Public Opinion, Media and Politics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 300</td>
<td>Intermediate Microeconomic Theory</td>
<td>3</td>
</tr>
<tr>
<td>Elective Advanced Courses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Science/Methods - choose 12 credits from list below:</td>
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<td></td>
</tr>
<tr>
<td>MATH 201</td>
<td>Introduction to Statistical Methods I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 202</td>
<td>Introduction to Statistical Methods II</td>
<td>3</td>
</tr>
<tr>
<td>MATH 221</td>
<td>Calculus I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 241</td>
<td>Analytical Geometry and Calculus A</td>
<td>4</td>
</tr>
<tr>
<td>MATH 242</td>
<td>Analytical Geometry and Calculus B</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 421</td>
<td>Environmental and Applied Geology</td>
<td>3</td>
</tr>
<tr>
<td>POSC 300</td>
<td>Data Analysis for Political Sciences</td>
<td>3</td>
</tr>
<tr>
<td>POSC 301</td>
<td>State and Local Government</td>
<td>3</td>
</tr>
<tr>
<td>POSC 311</td>
<td>Politics of Developing Nations</td>
<td>3</td>
</tr>
<tr>
<td>POSC 323</td>
<td>International Political Economy</td>
<td>3</td>
</tr>
<tr>
<td>STAT 370</td>
<td>Introduction to Statistical Analysis I</td>
<td>3</td>
</tr>
<tr>
<td>STAT 371</td>
<td>Introduction to Statistical Analysis II</td>
<td>3</td>
</tr>
<tr>
<td>STAT 408</td>
<td>Statistical Research Methods I</td>
<td>3</td>
</tr>
<tr>
<td>STAT 475</td>
<td>Statistics for Environmental Sciences</td>
<td>3</td>
</tr>
<tr>
<td>Social Science – choose 24 credits from list below:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECON 444/FREC 444</td>
<td>Economics of Environmental Management</td>
<td>3</td>
</tr>
<tr>
<td>ENEP 402</td>
<td>Electricity Policy and Planning</td>
<td>3</td>
</tr>
<tr>
<td>ENEP 410</td>
<td>Political Economy of the Environment</td>
<td>3</td>
</tr>
<tr>
<td>ENEP 468</td>
<td>Research in Global Energy</td>
<td></td>
</tr>
</tbody>
</table>
Policies 3
ENEP 470 Readings in U.S. Energy Policy 3
FREC 343/ECON 343 Environmental Economics 3
FREC 424 Resource Economics 3
FREC 450 Topics in Environmental Law 3
GEOG 428/UAPP 428 Land Use & Environmental Planning 3
GEOL 112 Earth Resources and Public Policy 3
GEOL 304 Earth System Science 4
GEOL 421 Environmental and Applied Geology 3
PHIL 340 Cross Cultural Environmental Ethics 3
PHIL 448 Environmental Ethics 3
POSC 311 Politics of Developing Countries 3
POSC 323 International Political Economy 3
POSC 456 Disaster and Politics 3
SOCI 331 World Population, Profiles and Trends 3
SOCI 470 Environmental Sociology 3
SOCI 471 Disasters, Vulnerability and Development 3
UAPP 325 Public Policy Analysis 3
UAPP 427 Evaluating Public Policy 3
Foreign Language (up to 8 credits) 8

Energy, Science and Technology Concentration:

Required Advanced Courses

CHEM 103 General Chemistry 4
ECON 300 Intermediate Microeconomic Theory 3
ENEP 426 Climate Change: Science, Policy and Political Economy 3
MATH 241 Analytic Geometry and Calculus A 4
PHYS 201 Introductory Physics I 4

Elective Advanced Courses

Choose 30 credits from the elective advanced course list below.

BUAD 301 Introduction to Marketing 3
BUAD 472 Marketing, Society and the Environment (Prerequisite: BUAD 301) 3
CHEM 104 General Chemistry II 4
ECON 311 Economics of Developing Countries 3
ELEG415/ELEG 615 Electric Power and Renewable Energy Systems 3
ELEG 491 Ethics and Impacts of Engineering 2
ENEP 402 Electricity Policy and Planning 3
ENEP 410 Political Economy of Environment 3
ENEP 468 Research in Global Energy Policies 3
ENEP 470 Readings in U.S. Energy Policy 3
FREC 343/ECON 343 Environmental Economics 3
GEOG 250 Computer Methods in Geography (MATH 115 or MATH 117 required) 4
GEOL 421 Environmental and Applied Geology 3
GEOG 372 Geographic Information Systems 3
GEOG 412 Physical Climatology (Prerequisite: MATH 241 and GEOG 250) 4
GEOG 428/UAPP 428 Land Use & Environmental Planning 3
MATH 115 Pre-Calculus 3
MATH 117 Pre-Calculus for Scientists & Engineers 4
MATH 221 Calculus I 3
MATH 241 Analytic Geometry and Calculus A 4
MATH 242 Analytic Geometry and Calculus B (MATH 241 Required) 4
MEEG 435 Wind Power Engineering 3
MEEG 442 Introduction to Fuel Cells 3
PHIL 340 Cross Cultural Environmental Ethics 3
POSC 350 Politics and the Environment 3
POSC 425/COMM 425 Energy/Environmental Policy, Public Opinion, Media and Politics 3
STAT 370 Introduction to Statistical Analysis I 3
STAT 371 Introduction to Statistical Analysis II 3
UAPP 325 Public Policy Analysis 3
UAPP 427 Evaluating Public Policy 3
Foreign Language (up to 8 credits) 8

All concentrations require the following courses:

Capstone Courses

GEOG 422 Resources, Development and the Environment 3
ENEP 424 Sustainable Energy Policy and Planning 3
ENEP 425 Energy: Resources, Technologies and Policies 3
CHEG 625 Green Engineering 3

Internship and Senior Research paper

ENEP 364 Internship Fieldwork (DLE) 3

Students intern in an organization in the field of
energy and environmental policy.

ENEP 472 Senior Research Paper 6
This is a tutorial course taken with approval from an Energy and Environmental Policy Program faculty member.

Electives
After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

TOTAL CREDITS NEEDED TO GRADUATE 125

MINOR IN ENERGY & ENVIRONMENTAL POLICY

This minor is offered through the Center for Energy and Environmental Policy. To enroll in this minor program, the student must have permission of the Director, who will assign the student a minor advisor. To qualify for the minor in Energy and Environmental Policy, students must complete 15 credits in accordance with the requirements specified below. A minimum grade of C- must be achieved in each course qualifying for the minor. For inquiries regarding the minor, contact the Center for Energy and Environmental Policy at (302) 831-8405 or jbbyrne@udel.edu.

Students must take the following two (2) courses:
ENEP 250: Introduction to Energy Policy 3
ENEP 425: Energy Policy and Administration 3

Students must take any three (3) of the following five (5) courses:
ENEP 402: Electricity Policy and Planning 3
ENEP 410: Political Economy of the Environment 3
ENEP 424: Sustainable Energy Policy and Planning 3
ENEP 426: Climate Change: Science, Policies and Political Economy 3
ENEP 470: Reading: Energy and Environmental Policy (3 cr) 3

Materials Science and Engineering

Telephone: (302) 831-2062
E-mail: matsci@udel.edu
http://www.mseg.udel.edu/
Faculty Listing: www.mseg.udel.edu/directory/faculty.html

Although the Materials Science and Engineering Department offers no degrees at the undergraduate level, undergraduate students study the basic concepts associated with the engineering properties of materials in undergraduate courses taught by the Materials Science and Engineering faculty. The department offers minors in Materials Science and Engineering and in Nanoscale Materials degrees. All Engineering departments offer senior projects concerned with the properties of materials. These technical elective courses are strongly recommended for students intending later to pursue masters (MMSE) or doctoral (Ph.D) degrees in Materials Science and Engineering.

MINOR IN MATERIALS SCIENCE AND ENGINEERING

The Minor in Materials Science and Engineering requires the completion of 15 credits in Materials related courses with a minimum grade of C- in all courses. MSEG 302 is a required course. The remaining may be drawn from a wide variety of courses in Materials Science, Engineering, Physics, and Chemistry up to the 600-level. All courses used to fulfill the requirements of the minor must be approved by a Materials Science advisor. There is a listing of commonly offered courses which are acceptable courses for the Minor in Materials Science that is maintained by the department Chair. This is not an exhaustive list and other courses may be approved as appropriate after discussion.

For more information, please contact Professor S. Ismat Shah by email at ismat@udel.edu or by telephone to (302) 831-1618. You can reference our website for detailed information on the Minor in Materials Science and Engineering degree at www.mseg.udel.edu/academicsminor.html.

MINOR IN NANOSCALE MATERIALS

The Minor in Nanoscale Materials requires completion of 15 credits with a minimum grade of C- in all courses. MSEG 302 is a required course. The remaining courses may be drawn from a wide variety of courses in Nanoscience and Engineering with the consent of the MSEG Nanoscale Materials Minor Coordinator. Courses from 300-level to the 600-level qualify. A course may be used only once between the Nanoscale Materials minor and the Materials Science minor. Commonly offered courses that are acceptable courses for the Minor in Nanoscale Materials are listed on our website: www.mseg.udel.edu/downloads/Nanomaterials-Minor.pdf. This list is not exhaustive and other courses may be approved as appropriate after discussion.

For more information, please contact Professor S. Ismat Shah by email at ismat@udel.edu or by telephone to (302) 831-1618. You can reference
In order to prepare the mechanical engineers of the future to take their places in this profession and to be fully consistent with the published University and College Mission Statements, the UD Department of Mechanical Engineering’s mission is to cultivate both learning and the advancement of knowledge in the engineering sciences by providing all of our students with outstanding undergraduate education programs so that they will know how to reason critically and independently yet cooperate productively.

Thus, the objective of the undergraduate Mechanical Engineering Program at the University of Delaware is to produce graduates with a strong foundation in engineering fundamentals enabling them to lead a successful career in industry or government and/or obtain an advanced degree, and contribute to engineering knowledge, the profession, and the community.

The educational program is structured around a basic core program that will enable the Bachelor of Mechanical Engineering graduate to follow many career paths, including research, development, design, production, maintenance, management, patent law, or education. The curriculum also allows a student to select engineering fields of particular interest for study, such as aerospace, materials, biomedical, controls, design, systems, robotics, energy, and fluids.

The degree program is designed to serve not only those students who go into industry or government directly after the B.M.E. degree, but also those who go on to a graduate program in engineering or continue their education in other professions such as medicine, law or business administration. Undergraduates are encouraged to participate in research projects with faculty and graduate students which may involve the use of state-of-the-art instrumentation, electronics and networked computers.

For more detailed information, please reference our website: www.mseg.udel.edu/4plus1.html Frequently asked questions can be answered by using this link: www.mseg.udel.edu/downloads/MSEG4+1FAQs.pdf

Mechanical Engineering
Telephone: (302) 831-2421
E-mail: info@me.udel.edu
http://www.me.udel.edu
Faculty Listing: http://www.me.udel.edu/People/people.html

The Department of Mechanical Engineering offers an ABET-accredited program leading to the Bachelor of Mechanical Engineering, including a University of Delaware Honors Degree Option. Mechanical engineers receive one of the broadest educations of any of the modern engineering disciplines and consequently are well prepared to apply basic engineering principles to a wide variety of society’s needs.
been mastered and comprise a minimum of 12 credits. Although the majority of the technical depth electives are typically drawn from the Mechanical Engineering department, courses from other departments and colleges can be selected with the approval of the departmental advisor.

Students can choose towards the end of sophomore or early junior year to pursue a concentration in Aerospace Engineering to focus their upperclass studies. For those pursuing the degree without a concentration, other suggested focus areas include: materials and composites, fluids and thermal engineering, energy engineering (including fuel cell technologies), robotics and controls, manufacturing, and design. Students with an interest in bioengineering are encouraged to consider the Minor in Biomedical Engineering that is offered by the Mechanical Engineering Department as a focus for their technical electives. However, the technical elective program can also be structured to meet individual interests and students are encouraged to discuss their educational objectives with their advisor early in the junior year and to develop an agreed upon selection of technical electives.

BACHELOR OF MECHANICAL ENGINEERING - MECHANICAL ENGINEERING

Parenthesized figures indicate year and semester in which the course should be taken (1 = freshman, 2 = sophomore, 3 = junior, 4 = senior) and semester (F = fall, S = spring)

UNIVERSITY REQUIREMENTS
ENGL 110 Critical Reading and Writing 3 (1F)
First Year Experience (FYE) 0-4
Discovery Learning Experience (DLE) 3
Breadth Requirements 12
Multi-cultural Course(s) 3

MAJOR REQUIREMENTS

College of Engineering Breadth Requirements 21
The College of Engineering requires 21 total Breadth Requirement credits (essentially 9 credits in addition to the University Breadth Requirement.)

If chosen carefully, up to 3 credits from each of the University Breadth Requirement categories may be used to simultaneously satisfy the College of Engineering Breadth Requirements for this major.

CHEM 103 General Chemistry 4 (1F)
CISC 106 General Computer Science for Engineers 3 (1F)
EGGG 101 Introduction to Engineering (FYE) 2 (1F)
MATH 241 Analytic Geometry and Calculus A 4 (1F)
MATH 242 Analytic Geometry and Calculus B 4 (1S)
MATH 243 Analytic Geometry and Calculus C 4 (2F)
MATH 351 Engineering Mathematics I 3 (2F)
MATH 352 Engineering Mathematics II 3 (2S)
MATH 353 Engineering Mathematics III 3 (2S)
MEEG 112 Statics (minimum grade of C- required to progress) 3 (1S)
MEEG 202 Computer-Aided Engineering Design 3 (2S)
MEEG 211 Dynamics 3 (2F)
MEEG 215 Mechanics of Solids 4 (2F)
MEEG 301 Machine Design - Kinematics and Kinetics 3 (3F)
MEEG 304 Machine Design - Elements 3 (3F)
MEEG 311 Vibration and Control 4 (3F)
MEEG 321 Materials Engineering 3 (3F)
MEEG 331 Fluid Mechanics I 4 (3F)
MEEG 332 Fluid Mechanics II 3 (3S)
MEEG 341 Thermodynamics 3 (3F)
MEEG 342 Heat Transfer 3 (3S)
MEEG 346 Thermal Lab 1 (3S)
MEEG 401 Senior Design (DLE) 6 (4F)
MSEG 302 Materials Science for Engineers 3 (2S)
PHYS 207 Fundamentals of Physics I 4 (1S)
PHYS 245 Introduction to Electricity and Electronics 4 (2S)

TECHNICAL ELECTIVES 15

Courses in engineering, science or mathematics selected by the student with the approval of his/her advisor.

CREDITS TO TOTAL A MINIMUM OF 123
Sustainable Energy Technology

BACHELOR OF MECHANICAL ENGINEERING - MECHANICAL ENGINEERING (AEROSPACE ENGINEERING)

Students may add this Concentration to their Bachelor of Mechanical Engineering Major starting as early as the end of their sophomore year. To qualify for a Concentration in Aerospace Engineering, Mechanical Engineering students must complete all requirements for the Bachelor of Mechanical Engineering degree. In addition, the student is required to complete at least 12 credits in accordance with the following requirements. (Note that all of these courses may also be used to satisfy technical elective requirements for the BME degree.)

**MAJOR REQUIREMENTS**

**Required Course**
All students must take the following course:
- MEEG 432 Aerodynamics 3

Advanced courses in Aerospace Engineering
Three of the following three-credit courses must also be taken:*  
- MEEG 414 Analysis of Aircraft Structure 3  
- MEEG 419 Mechanical Behavior of Materials and Structures 3  
- MEEG 423 Vibrations 3  
- MEEG 435 Wind Power Engineering 3  
- MEEG 616 Composite Materials Structures 3  
- MEEG 624 Control of Dynamic Systems 3  
- MEEG 636 Fluid Mechanics Measurements 3  
- MEEG 655 Principles of Composite Manufacturing 3  
- CIEG 401 Introduction to the Finite Element Method 3

*Independent study, Senior Research and additional courses for satisfying this requirement can be approved by the Department.

**HONORS BACHELOR OF MECHANICAL ENGINEERING**

A recipient of Honors Bachelor of Mechanical Engineering must satisfy the following:

- All requirements for the Bachelor of Mechanical Engineering degree.
- All generic University requirements for the Honors Degree. Graduate courses approved for this purpose by the department may be counted as Honors courses.

**MINOR IN BIOMEDICAL ENGINEERING**

This minor is offered through the Department of Mechanical Engineering. To enroll in this minor program, the student must have permission of the Chair of Mechanical Engineering, who will assign the student a minor advisor. To qualify for a Minor in Biomedical Engineering, students must complete at least 21 credits in accordance with the requirements specified below. Additional courses for satisfying these requirements may be approved by the Department. A minimum grade of C- must be achieved in each course qualifying for the minor. For inquiries regarding the Biomedical Engineering Minor, contact the Mechanical Engineering department at (302) 831-2421 or info@me.udel.edu.

**Course Requirements**

1. All students must take the following three courses:
   - BISC 207 Introductory Biology I 4  
   - or BISC 208 Introductory Biology II (by advanced placement or transfer credit only) 4  
   - MATH 243 Analytic Geometry and Calculus C 4  
   - PHYS 201 Introductory Physics I 4  
   - or PHYS 207 Fundamentals of Physics I 4

2. And one of the following courses:
   - BISC 306 General Physiology 3  
   - BISC 401 Molecular Biology of the Cell 3  
   - KAAP 220 Anatomy and Physiology 3

3. And two of the following courses (note: these courses may have prerequisites beyond those required for the minor)*:
   - MEEG 482 Clinical Biomechanics 3  
   - MEEG 483 Orthopaedic Biomechanics 3  
   - MEEG 484 Biomaterial and Tissue Engineering 3  
   - MEEG 485 Control of Human Movement 3  
   - MEEG 486 Cell and Tissue Transport 3  
   - MEEG 612 Biomechanics of Human Movement 3  
   - ELEG 471 Mathematical Physiology 3

*Independent study, Senior Research and additional courses for satisfying this requirement can be approved by the minor advisor.

**Sustainable Energy Technology**

Telephone: (302) 831-0590  
E-mail: goossen@ece.udel.edu

The College of Engineering offers an interdepartmental minor in Sustainable Energy Technology. This minor provides students with the basic knowledge and skills necessary to compare and select optimal technologies.
for energy production based on engineering, economic, and local and global criteria.

The minor is available to all majors, although the courses that have been selected require, in many cases, an elementary knowledge of thermodynamics or economic sciences. All courses in the minor are aimed at undergraduates. It has been traditional in the engineering departments, as well as many others, for undergraduates to take senior-year technical electives that are 600-level; therefore, 600-level courses are among the options that students may choose.

MINOR IN SUSTAINABLE ENERGY TECHNOLOGY

A minor in Sustainable Energy Technology may be earned by a student in any University bachelor's degree program through successful completion of a minimum of 15 credits as described below. Before beginning these courses, the student must meet the required course prerequisites. A minimum grade of C- is required in all courses completed for the minor.

To receive a Minor in Sustainable Energy Technology the student must take three (9 credits or more) out of the following set of courses:

- CHEG 612 Applied Process Heat Transfer
- CHEG 614 Special Topics in Energy
- CHEG 616 Chemistry and Physics of Surfaces and Interfaces
- CHEG 625 Green Engineering
- CIEG 351 Transportation Engineering
- BREG 456 Fundamentals of Heating, Ventilation and Air Conditioning
- ELEG 415/ELEG 615 Electric Power and Renewable Energy Systems
- ELEG 429/ELEG 629 Low Power Electronics and Lighting
- ELEG 437/ELEG 637 Energy Systems
- ELEG 620 Solar Electric Systems
- ELEG 628 Solar Electric Technology & Applications
- MEEG 425 Automotive Powertrain Theory
- MEEG 442 Introduction to Fuel Cells
- MEEG 435 Wind Power Engineering
- Undergraduate Research in Energy (3 credits)

Students must also take the following required course (3 credits):
- UAPP 625 Energy Policy and Administration

AND take one course from the following list (3 or more credits):

- CIEG 650 Urban Transportation Systems
- GEOG 235 Conservation of Natural Resources
- GEOG 236 Conservation: Global Issues
- GEOG 617 Seminar in Climate Change
- GEOG 622 Resources, Development and the Environment
- MAST 628 Offshore Wind Power: Science, Engineering, and Policy
- MAST 662 Conservation and Renewable Energy Policy
- MAST 675 Economics of Natural Resources
- MAST 676 Environmental Economics (prereq: ECON 300)
- POSC 350 Politics and the Environment (permission required by POSC department)

Other courses may be included upon approval of the minor administration committee.

For inquiries about the Sustainable Energy Technology Minor, contact Professor Keith Goossen at (302) 831-0590 (goossen@ece.udel.edu).

**Arts and Sciences - Engineering Double Degree**

**Telephone:** (302) 831-8659  
**E-mail:** fcsherm@udel.edu

The Arts and Sciences-Engineering program is a five-year curriculum which leads to a Bachelor of Arts from the College of Arts and Sciences and a Bachelor of Biomedical, Chemical, Civil, Computer, Electrical, Environmental, or Mechanical Engineering from the College of Engineering. Students who elect to complete this program must fulfill all the requirements of their four-year engineering major as well as a minimum of 30 additional credit hours in Arts and Sciences courses. Students must complete the college-level requirements of the College of Arts and Sciences and earn 15 credits of electives in an Arts and Sciences area of concentration. All elective courses are chosen in consultation with advisors in both Colleges so as to take every advantage of situations where a course can fulfill requirements of both the Engineering and Arts and Sciences degrees.

Students who wish to pursue the five-year Arts and Sciences-Engineering program must initially be admitted to a major within the College of Engineering. Engineering students who are interested in this special curriculum should meet with the Assistant Dean during their first year because it may not be possible to complete this curriculum in five years if the change is made.
after the freshman year. Once admitted to the five-year curriculum, a student may switch back to a normal four-year Engineering program or change to an Arts and Sciences major for which they are academically qualified.

AREA OF CONCENTRATION. The 15 credit hours which compose the Arts and Sciences area of concentration are chosen by the student in order to acquire some depth of knowledge in a particular field. In most cases, these 15 credits will not be sufficient to complete a major in an Arts and Sciences department. An Arts-Engineering student whose Arts and Sciences area of concentration falls short of the requirements for a specific major will graduate with a Bachelor of Arts from the College of Arts and Sciences. With careful planning, however, it is sometimes possible to obtain a second major in Arts and Sciences by taking more than the minimum of 30 credit hours or by specializing in a scientific or mathematical field which has a number of course requirements in common with the engineering major.

BACHELOR OF ARTS - BACHELOR OF [BIOMEDICAL, CHEMICAL, CIVIL, COMPUTER, ELECTRICAL, ENVIRONMENTAL, OR MECHANICAL] ENGINEERING

CURRICULUM CREDITS
UNIVERSITY REQUIREMENTS
ENGL 1 10 Critical Reading and Writing (minimum grade C-) 3
First Year Experience (FYE) 0-4
University Breadth Requirement 12
Discovery Learning Experience (DLE) 3
Multi-cultural Courses 3

ARTS AND SCIENCES COLLEGE REQUIREMENTS
Writing: (minimum grade C-) 3
A three-credit writing course involving significant writing experience including two papers with a combined minimum of 3,000 words to be submitted for extended faculty critique of both composition and content. These credits may also fulfill some of the breadth requirements. (See list of courses approved for Second Writing Requirement.)

Foreign Language 0-12
Completion of the intermediate level course (107 or 112) in a given language. Students with four or more years of high school work in a single foreign language may attempt to fulfill the requirement in that language by taking an exemption examination.

Breadth:

COLLEGE OF ARTS AND SCIENCES BREADTH REQUIREMENTS: (minimum grade C-)
The College Breadth Requirements are in addition to the University Breadth Requirement. Up to 3 credits from each of the University Breadth Requirement categories may be used to simultaneously satisfy these College of Arts and Sciences Breadth Requirements.

Group A: Creative Arts and Humanities: 9 credits
These courses provide students with an understanding and appreciation of the visual and performing arts, of aesthetic forms, designs, or craftsmanship, or of literary, philosophical, and intellectual traditions. Courses may focus on a single aesthetic form or intellectual tradition, or cross-cultural comparisons. Nine credits of courses representing at least two departments or appropriate instructional units.

Group B: History and Cultural Change: 9 credits
These courses provide students with an understanding of the sources and forces of historical changes in ideas, beliefs, institutions, and cultures. Courses may address social, cultural, intellectual, economic, technological, artistic, scientific, and political development, changes in a discipline, or globalization and its effects. Nine credits of courses representing at least two departments or appropriate instructional units.

Group C: Social and Behavioral Sciences: 9 credits
These courses provide students with an understanding of the behavior of individuals and social groups in the context of their human and natural environments. Courses emphasize the empirical findings, applications, and methods of the social and behavioral sciences. Nine credits of courses representing at least two departments or appropriate instructional units.

If all but one course in a group has been taken in one department or program, a course cross-listed with that program will not satisfy the distribution requirement.
College of Health Sciences

Dean’s Scholar Program

The Dean’s Scholar Program exists to serve the needs of students whose clearly defined educational goals cannot be effectively achieved by pursuing the standard curricula for all existing majors, minors, and interdepartmental majors sponsored by the University. Driven by an overarching passion or curiosity that transcends typical disciplinary bounds and curricula, a Dean’s Scholar’s intellectual interests may lead to broad interdisciplinary explorations of an issue or to more intense, in-depth studies in a single field at a level akin to graduate work. In consultation with faculty advisors and the Associate or Assistant Dean of their college, Dean’s Scholars design an imaginative and rigorous individual plan of study to meet the total credit hours required for graduation. Contact the Assistant/Associate Dean in the college or go to www.udel.edu/deansscholar/ for more information and the application.

Behavioral Health and Nutrition

Telephone: (302) 831-2252
http://www.udel.edu/bhan
Faculty Listing: http://www.udel.edu/chs/facultystaff/index.html#bhan

The Department of Behavioral Health and Nutrition offers undergraduate majors in Applied Nutrition, Dietetics, Health Behavior Science, Nutritional Sciences, and Health and Physical Education as well as minors in Public Health, Coaching Science, Nutrition, and Leisure Service Management. The programs integrate background coursework in the behavioral and nutritional sciences with internship and real-world practicum experiences. The undergraduate programs prepare students for a variety of careers in the areas of health care, education, recreation, public health, fitness, nutrition, and health promotion for business, industry, and public, private, and government agencies.

Each student’s academic advisor, a faculty member with expertise in the student’s field of interest will assist in selecting courses and experiences that focus on the student’s interests and professional goals. Careful selection of general education requirements and elective courses allows students to pursue a minor or an area of interest outside the college, a double major, or interdepartmental major. Students are encouraged to meet with their faculty advisor at least once each semester. Failure to meet regularly with a faculty advisor can result in a delay in graduation if program requirements...
The Nutritional Sciences major is for students who want to focus strongly on the science aspects of human nutrition. As a premedical program, it prepares students for careers in dentistry, veterinary and human medicine, laboratory research in nutrition, or positions with companies or agencies requiring the extensive use of a strong science and human nutrition background.

Lifetime Activities Program

A varied activity program is available to all students on a pass/fail credit basis in BHAN 120 courses. The objectives of the lifetime activities program are: (1) to provide knowledge and skills essential for leisure-time enjoyment, (2) to develop healthy exercise habits as well as a sound knowledge base in the scientific principles of physical activity, and (3) to provide an enjoyable atmosphere for learning skills that encourage lifetime participation. Regular attendance is required in order to receive credit in BHAN120 courses with a passing grade. BHAN120 courses provide students with a wide variety of healthy lifestyle and skills to enhance their quality of life. These one (1) credit courses relate to stress management, food and diet, healthy relationships and much more.

Honors Degrees in the Department of Behavioral Health and Nutrition

Students can earn an Honors Bachelor of Science Degree by completing the following requirements:

All requirements for the Bachelor of Science Degree in the respective major.
All of the University’s generic requirements for the Honors Baccalaureate Degree.

General Studies Requirements

UNIVERSITY REQUIREMENTS

ENGL 110 Critical Reading and Writing (minimum grade C-) 3
First Year Experience (FYE) 0-4
Breadth Requirements (minimum grade of C- in each course) 12
Discovery Learning Experience (DLE) 3
Multi-cultural Courses 3
This course can be used in the Breadth Requirements, Major Requirements, or Electives.

DEPARTMENT BREADTH REQUIREMENTS

HUMANITIES AND COMMUNICATION SKILLS*
Students choose selected courses from
the following departments: Art, Art History, Communication, Comparative Literature, English, Foreign Language (including: CHIN, FREN, GREK, GRMN, HEBR, ITAL, JAPN, LATN, PORT, RUSS, SPAN), Foreign Languages and Literatures, Jewish Studies, Linguistics, Museum Studies, Music, Philosophy, Theatre, and Women's Studies (WOMS 203, WOMS 205, WOMS 210, WOMS 216, WOMS 222, WOMS 318, WOMS 320, WOMS 326, WOMS 328, WOMS 330, WOMS 353, WOMS 380, WOMS 382, WOMS 389, WOMS 480).

SOCIAL SCIENCES
Students choose selected courses from the following departments: Anthropology, Black American Studies, Business Administration, Criminal Justice, Economics (including FREC 150), History, Individual and Family Studies (HDFS 201, HDFS 221, HDFS 230, HDFS 329, HDFS 401, HDFS 403, HDFS 405), Political Science, Psychology (except PSYC209 and PSYC314), Sociology, and Women's Studies (WOMS 201, WOMS 202, WOMS 206, WOMS 207, WOMS 211, WOMS 212, WOMS 213, WOMS 233, WOMS 240, WOMS 291, WOMS 298, WOMS 299, WOMS 300, WOMS 305, WOMS 323, WOMS 333, WOMS 350, WOMS 363, WOMS 407, WOMS 413, WOMS 415, WOMS 430, WOMS 436, WOMS 484, WOMS 498).

BIOLOGICAL AND NATURAL SCIENCES AND MATHEMATICS

*NTDT courses do not count as a breadth requirement for majors in Applied Nutrition, Dietetics, and Nutritional Sciences.

Health And Physical Education: Admission Requirements And Application Procedure

HEALTH AND PHYSICAL EDUCATION: ADMISSION REQUIREMENTS AND APPLICATION PROCEDURE

Students enrolled in the Health and Physical Education major wishing to begin upper-level work must make formal application and satisfy the requirements for Clearance for Upper Division Study. Application is made to the Program Coordinator at the completion of the sophomore year or, in the case of transfer students, when the student has completed 60-89 credits for junior status. The purpose of the clearance is to assure that each student is satisfying requirements in the major and is prepared to undertake junior-level work. Students not meeting criteria are provided with support services including study skills assistance and academic planning.

Requirements for Progression through the Program
Students will achieve and maintain a health-enhancing level of fitness throughout the program and will be tested annually. Without discrimination against those with disabilities, students with special needs are allowed and encouraged to utilize a variety of accommodations and/or modifications to demonstrate fitness. The fitness testing is not part of any grade for a class nor does it change the program of study. Students must complete the fitness testing one time a year.

Requirements for Clearance for Upper Division Study
- Letter of application
- Minimum GPA in the major of 2.75 and minimum cululative GPA of 2.5
- A grade of C- or better in all required courses
- Pass all three subtests of Praxis I: Reading passing score of 175, Writing passing score of 173 and Mathematics passing score of 174.
- Resume
- Philosophy of Health and Physical Education Statement

Requirements for Admission to the Methods Block prior to student teaching
- Minimum cumulative GPA of 2.50
- Minimum GPA of 2.75 in the major courses
- Complete all required BHAN and KAAP courses with a minimum grade of C- or better (with the exception of KAAP425, KAAP433, and BHAN465).
- Completion of all required EDUC courses (with the exception of EDUC 400 and EDUC420)

Requirements for Admission to Student Teaching in Health and Physical Education
- Minimum cumulative GPA of 2.50
- Minimum GPA of 2.75 in the major courses
- A grade of C- or better in all required courses
within the major.
Completion of all required EDUC courses (with the exception of EDUC 400)

Co-requisite for EDUC 400 - Student Teaching
The candidate must provide proof of having taken an appropriate academic content area test for Health Education and Physical Education. The Delaware Health Education test (0550) is required for the health education content test and the Praxis II Content Knowledge: Physical Education Test (0091) is required for the physical education content test. A copy of the official score report must be submitted to the Delaware Center for Teacher Education, 200 Academy Street, during enrollment in EDUC 400 Student Teaching no later than May 1 for June graduates. An institutional recommendation for certification will not be issued until the candidate has presented the official score report.

BACHELOR OF SCIENCE - HEALTH AND PHYSICAL EDUCATION

UNIVERSITY REQUIREMENTS
ENGL 110 Critical Reading and Writing 3
(minimum grade C-)
First Year Experience (FYE) 0-4
University Breadth Requirements (minimum grade of C- in each course) 12
Creative Arts and Humanities 3
History and Cultural Change 3
Social and Behavioral Science 3
Mathematics, Natural Science, and Technology 3
Discovery Learning Experience (DLE) 3
Multi-cultural Courses 3

MAJOR REQUIREMENTS
Humanities and Communication Skills* 6
Social Science (PSYC100 or HDFS201) 3
Natural and Biological Sciences and Mathematics 10
Including:
Mathematics
Biology with Laboratory
NTDT 200

Additional Breadth Requirements 3
3 additional credits can be chosen from any area.
EDUC 400 Student Teaching 10
EDUC 413 Adolescent Development and Educational Psychology 4
EDUC 414 Teaching Exceptional Adolescents 3
EDUC 419 Diversity in Secondary Education 3
(fulfills University multicultural requirement)
EDUC 420 Reading in the Content Areas 1

Students must have a minimum cumulative GPA of 2.500, a GPA in the major of at least 2.750, and must apply to student teach at least one semester in advance.

BHAN121 Water Safety Instruction 2
BHAN 140 Fundamental Skills Analysis 3
BHAN 141 Adventure Challenge and Outdoor Recreation 1
BHAN145 Introduction to Physical Education 3
BHAN 155 Personal Health Management 3
KAAP 210 Emergency Management of Injuries and Illnesses 3
KAAP 220 Anatomy and Physiology 3
BHAN 230 Group Facilitation Skills in Health and Physical Education 3
BHAN231 Teaching Community and Mental Health 3
BHAN 241 Teaching Individual Sports 3
BHAN245 Teaching Team Sports 3
BHAN251 Skills, Techniques and Knowledge of Rhythms and Dance 1
KAAP 301 Motor Development 3
BHAN315 Instructional Strategies for Drug Education 3
BHAN 319 Health-Related Fitness 3
BHAN324 Measurement and Evaluation 3
BHAN 325 Instructional Strategies for Human Sexuality 3
BHAN333 Health Theory and Program Planning 3
BHAN342/343 Introduction to/Adapted Physical Education 3
BHAN345 Tactical Approach to Teaching Sports 3
BHAN414 Methods and Materials in Health Education 3
BHAN416 Methods and Materials in Physical Education 3
KAAP425 Biomechanics of Human Movement 4
KAAP433 Applied Physiology of Activity 4
BHAN465 Teaching Seminar in Health/Physical Education 2

CREDITS TO TOTAL A MINIMUM OF 120

Electives
After required courses are completed, sufficient electives must be taken to meet the minimum credits required for the degree.
BACHELOR OF SCIENCE - HEALTH BEHAVIOR SCIENCE

UNIVERSITY REQUIREMENTS
ENGL 110  Critical Reading and Writing 3
(minimum grade C-)

First Year Experience (FYE) 0-4

University Breadth Requirements 12

Discovery Learning Experience (DLE) 3

Multi-cultural Courses 3

DEPARTMENT BREADTH REQUIREMENTS
Humanities and Communication Skills 9
Note: Must include courses from two different departments.

Social Sciences
Psychology 3
Sociology 3

Natural and Biological Sciences and Mathematics 12
Including:
Mathematics
Biology

MAJOR REQUIREMENTS (minimum grade C- in each)
BHAN155  Personal Health Management: Approach for a Lifetime 3
BHAN160  Health Behavior Science Seminar 1
KAAP 220  Anatomy and Physiology Management 3
BHAN 311  Issues in Health Behavior Management 3
BHAN 326  Research Methods & Statistics for Behavior Science 3
BHAN 332  Health Behavior Theory and Assessment 3
BHAN 335  Health and Aging 3
BHAN 342  Introduction to Adapted Physical Activity 3
BHAN 422  Organization and Administration 3
BHAN 435  Physical Activity Behavior 3
BHAN 464  Internship 9
BHAN 490  Development of Health Promotion Programs 3
NTDT 200  Nutritional Concepts 3
NTDT 310  Nutrition and Activity 3

Approved Minor (15 credits, minimum, required)
Suggested Minors:
A: Strength and Conditioning
B: Nutrition

C: Psychology
D: Business Administration
E: Entrepreneurial Studies
F: Coaching Science
G: Leisure Services Management
H: Disability Studies
I: Public Health

ELECTIVES
After required courses are completed, sufficient credits must be taken to meet the minimum credits required for the degree.

CREDITS TO TOTAL A MINIMUM OF 120

BACHELOR OF SCIENCE - APPLIED NUTRITION

UNIVERSITY REQUIREMENTS
ENGL 110  Critical Reading and Writing 3
(minimum grade C-)
First Year Experience (FYE) 0-4

University Breadth Requirements (minimum grade of C- required. May be used simultaneously to fulfill departmental and major requirements.)
Creative Arts and Humanities 3
History and Cultural Change 3
Social and Behavioral Sciences 3
Math, Natural Science and Technology 3
Multi-cultural Courses 3
Discovery Learning Experience (DLE) 3

DEPARTMENTAL BREADTH REQUIREMENTS
Humanities and Communications Skills 6
Social Sciences 6
Can be satisfied by PSYC100 and Sociology elective
Natural/Biological Sciences and Mathematics 12
Can be satisfied by BISC104/207, MATH114, ANFS305 and BISC106/276.

MAJOR REQUIREMENTS (minimum grade C- required in BISC 106 or BISC 276, CHEM 214, and CHEM 216)

Humanelectives 6
CHEM 101/102
General Chemistry
or
CHEM 103/104
General Chemistry
CHEM 213/215
Elementary Organic Chemistry
CHEM 214/216
Elementary Biochemistry with Lab
BISC 104  Principles of Biology
BACHELOR OF SCIENCE - DIETETICS

UNIVERSITY REQUIREMENTS
ENGL 110  Critical Reading and Writing  3  
(minimum grade C-)

First Year Experience (FYE)  0-4

University Breadth Requirements  12  
(minimum grade of C- required. May be used 
simultaneously to satisfy the departmental and 
major requirements.)

Creative Arts and Humanities  3
History and Cultural Change  3
Social and Behavioral  3
Sciences
Math, Natural Sciences and  3
Technology

Discovery Learning Experience (DLE)  3

Multi-cultural Courses  3

DEPARTMENT BREADTH REQUIREMENTS
Humanities and Communication Skills  6
Social Sciences
Can be satisfied by PSYC100 and SOCI201
Natural/Biological Sciences and  12
Mathematics
Can be satisfied by BISC207, MATH114,
ANFS305 &BISC276

MAJOR REQUIREMENTS
(minimum grade of C- required in BISC 276,
CHEM 214, and CHEM 216)
CHEM 101/CHEM 102
General Chemistry
or
CHEM 103/CHEM 104
General Chemistry  8
CHEM 213/CHEM215
Elementary Organic Chemistry 4
CHEM 214/CHEM 216
Elementary Biochemistry
with Lab  4
BISC 207  Introductory Biology I  4
BISC 276  Human Physiology  4
BISC 300  Introduction to Microbiology  4
ECON 100  Economic Issues and Policies
or
ECON 151  Introduction to Microeconomics:
Prices and Markets  3
PSYC 100  General Psychology  3
SOCI 201  Introduction to Sociology  3

BUAD 309  Management and Organizational  3
Behavior
ANFS 305  Food Science  3
(minimum grade C-)
Statistics course selected from: STAT 200,
PSYC 209, FREC 408  3

BACHELOR OF SCIENCE - DIETETICS

or
BISC 207  Introductory Biology I  4
BISC 106  Elementary Human Physiology
or
BISC 276  Human Physiology  3/4
Students desiring to fulfill a Biology minor should take BISC 207, 208 and 276.
ECON 100  Economic Issues and Policies
or
ECON 151  Introduction to Microeconomics:
Prices and Markets  3
PSYC 100  General Psychology  3
Sociology course  3
BUAD 309  Management and Organizational Behavior  3
ANFS 305  Food Science  
(minimum grade of C-)  3
MATH 114  Elementary Mathematics and Statistics  3

or
Successful performance on the Proficiency Test in Mathematics administered by Department of Mathematical Sciences.

A minimum grade of C- must be achieved for credits to count toward the fulfillment of 28 credits in NTDT; a minimum grade of C- in 200-level courses must be achieved to proceed to upper-level courses; only 300-level courses and a maximum of four credits of Special Problems/Independent Study (NTDT x66) may count toward the fulfillment of this requirement.

NTDT 103  Introduction to Nutrition Professions  1
NTDT 200  Nutrition Concepts  3
NTDT 201  Food Concepts  3
NTDT 400  Macronutrients  3
NTDT 401  Micronutrients  3
NTDT courses (300-level or higher)  12

One of the following NTDT Restricted Electives  
(minimum grade of C-)  3
NTDT 305  Nutrition in the LifeSpan
NTDT 350  Nutrition and Older Adults
NTDT 420  Maternal and Infant Nutrition

ELECTIVES
After required courses are completed, sufficient elective credits must be taken to meet the minimum credits required for the degree.

May include Military Science, Music, or BHAN120 lifetime activity courses. (Only two credits of BHAN120, four credits of Music, and four credits of 100- and 200-level courses in Military Science/ Air Force may be counted toward the degree.)

CREDITS TO TOTAL A MINIMUM OF  120
BACHELOR OF SCIENCE - NUTRITIONAL SCIENCES

MATH 114  Elementary Mathematics and Statistics  3

or  Successful performance on the Proficiency Test in Mathematics administered by Department of Mathematical Sciences.

A minimum grade of C- must be achieved for credits to count toward the fulfillment of 47 credits in NTDT; a minimum grade of C- in 200-level courses must be achieved to proceed to upper-level courses; only 300-level courses and a maximum of four credits of Special Problems/Independent Study (NTDT x66) may count toward the fulfillment of this requirement.

NTDT 103  Introduction to Nutrition Professions  1
NTDT 200  Nutrition Concepts  3
NTDT 201  Food Concepts  3
NTDT 250  Introduction to the Nutrition Care Process  3
NTDT 321  Quantity Food Production and Service  3
NTDT 322  Management of Food and Nutrition Services  3
NTDT 326  Onsite Food Products  3
NTDT 330  Nutritional Counseling  3
NTDT 400  Macronutrients  3
NTDT 401  Micronutrients  3
NTDT 403  Diets Seminar  1
NTDT 421  Nutrition Assessment Methods  3
NTDT 445  Teaching Methods: Nutrition and Foods  3
NTDT 450  Medical Nutrition Therapy I  3
NTDT 451  Medical Nutrition Therapy II  3
NTDT 460  Community Nutrition  3

One of the following NTDT Restricted Electives (minimum grade of C-)  3
NTDT 305  Nutrition in the LifeSpan
NTDT 350  Nutrition and Older Adults
NTDT 420  Maternal and Infant Nutrition

ELECTIVES
After required courses are completed, sufficient elective credits must be taken to meet the minimum credits required for the degree.

May include Military Science, Music, or BHAN120 lifetime activity courses. (Only two credits of BHAN120, four credits of Music, and four credits of 100- and 200-level courses in Military Science/Air Force may be counted toward the degree.)

CREDITS TO TOTAL A MINIMUM OF  120

BACHELOR OF SCIENCE - NUTRITIONAL SCIENCES

UNIVERSITY REQUIREMENTS
ENGL 110  Critical Reading and Writing  3
(minimum grade C-)

First Year Experience (FYE)  0-4
Breadth Requirement  12
Discovery Learning Experience (DLE)  3
Multi-cultural Courses  3

MAJOR REQUIREMENTS
(minimum grade of C- required in BISC 276, CHEM 214, and CHEM 216)
Humanities electives  6
CHEM 103/104  8
General Chemistry
CHEM 214/216  4
Elementary Biochemistry with Lab
CHEM 220/221  4
Quantitative Analysis I with Lab
CHEM 321/322  8
Organic Chemistry
BISC 207/BISC 208  8
Introductory Biology I and II
BISC 276  4
Human Physiology
BISC 300  4
Introduction to Microbiology
PHYS 201  4
Introductory Physics I
ECON 100  3
Economic Issues and Policies
ECON 151  3
Introduction to Microeconomics: Prices and Markets
FOSC 305  3
Food Science
(minimum grade C-)
FREC 408  3
Research Methods
MATH 221 or MATH 222  3
Calculus I or II
or
MATH 241 or MATH 242  3
Analytic Geometry and Calculus A or B

A minimum grade of C- must be achieved for credits to count toward the fulfillment of 30 credits in NTDT; a minimum grade of C- in 200-level courses must be achieved to proceed to upper-level courses; only 300-level courses and a maximum of four credits of Special Problems/Independent Study (NTDT x66) may count toward the fulfillment of this requirement.

NTDT 103  Introduction to Nutrition Professions  1
NTDT 200  Nutrition Concepts  3
NTDT 201  Food Concepts  3
MINOR IN LEISURE SERVICE MANAGEMENT

This minor is designed to provide students the knowledge and skills needed for management positions in public, private, commercial, and nonprofit leisure service agencies. Admission to the minor requires a minimum GPA of 2.0 based on at least 12 units of coursework. A grade of C- or better in all required courses is necessary for successful completion of the minor.

**MINOR IN NUTRITION**

A minor in nutrition requires NTDT 200, NTDT 400, NTDT 401 plus 6 credits in Nutrition and Dietetics at the 300-level or higher. A 2.0 GPA is required for admission; a minimum grade of C- is required in all courses in the minor. Note that CHEM 214 and CHEM 216 are necessary prerequisites for NTDT 400 and NTDT 401.

**MINOR IN PUBLIC HEALTH**

Public Health is the science and art of preventing disease, prolonging life, and promoting health through the organized efforts and informed choices of society, organizations, public and private sectors, communities and individuals.

The minor in Public Health provides an interdisciplinary opportunity to develop practical skills in program development and increase knowledge in the areas of social systems and policy as well as leadership. The minor is available to students of all disciplines and offers a greater appreciation for the application of public health concepts to your field of study.

The minor requires 18 credit hours which are distributed as follows: Three required core courses (9 credits), and three elective courses (9 credits). At least three of the nine elective
BACHELOR OF SCIENCE - HEALTH STUDIES

credits must be chosen from outside your major. In addition to the 18 required credits, one three-credit statistics course must be taken as a co-requisite to achieve the minor. All courses included in the minor must be completed with a C- or better.

Core Courses

HLPR211  Introduction to Public Health  3
HLPR222  Introduction to Epidemiology  3
HLPR233  Introduction to Global Health  3

Elective Courses:
Select one from each of the following

Program Development: Courses emphasize the study of planning, implementing, and evaluating public health programs in diverse settings

Social Systems and Policy: Courses emphasize the study of organizations, policies, laws, and regulations that represent the society and the community systems’ response to the needs of its citizens

Leadership: Courses emphasizes the study of innovation, motivation, and communication of decision-making

Health Studies
Telephone: (302) 831-8371

This major provides a broad-based degree for students interested in a health-related career in any number of settings within the health services arena. Foundation courses from the sciences, humanities, and social sciences are combined with courses from departments in the College of Health Sciences. Students in the Health Studies major can select an existing University minor in order to meet individual personal and career objectives and interests.

BACHELOR OF SCIENCE - HEALTH STUDIES

UNIVERSITY REQUIREMENTS
ENGL 110  Critical Reading and Writing  3 (minimum grade C-)

First Year Experience (FYE) 0-4
Breadth Requirements  12
Can be satisfied by requirements listed below. Minimum grade of C- required.
Discovery Learning Experience (DLE)  3
Multi-cultural Courses  3

BREADTH REQUIREMENTS

Creative Arts and Humanities  3
History and Cultural Change  3
Social and Behavioral Change  12
PSYC 100, ECON 100 or ECON 151, SOCI 201, HDFS 201, BUAD 309, or other Social Science electives
Science and Math (must include a science course with lab)  10

MAJOR REQUIREMENTS
(minimum grade of C- in each course)
Second Writing Course  3
An approved course taken after completion of 45 credit hours listed as “Section satisfies A & S writing requirement”
Communication or Foreign Language Course  3
STAT 200  3
PHIL 241  Ethical Issues in Healthcare  3
or
HLTH 241  Ethical Aspects of Healthcare  3
BISC 276  Human Physiology  4
LEAD 404*  Leadership in Organizations  3
or
BHAN 422  Organization and Administration of Leisure Services  3
NURS 101  Anatomy  2
or
KAAP 220  Anatomy and Physiology  3
BHAN 155  Personal Health Management  3
NTDT 200  Nutrition Concepts  3
KAAP 210  Safety, First Aid and Emergency Care  3
NTDT 305  Nutrition in the Lifespan  3
BHAN 326  Research Methods and Statistics for Behavior Sciences  3
or
KAAP 400  Research Methods  3
MEDT 200  The Language of Medicine  3
NURS 411/NURS 412  Topics  3
BHAN 311  Issues in Health Behavior Management  3

AND, ONE COURSE FROM THIS GROUP

NTDT 301  Cultural Perspectives on Food and Nutrition  3
NTDT 310  Nutrition and Activity  3
NTDT 350  Nutrition and Older Adults  3

Additional BHAN, MEDT, KAAP, NTDT, or NURS
(3 credits must be at the 400 level)  15

HLTH 495  Health Studies Practicum: Capstone Course:  6
Approved Minor
ELECTIVES
After required courses are completed, sufficient elective credit must be taken to meet the minimum credits required for the degree. * LEAD 100 prerequisite required  
CREDITS TO TOTAL A MINIMUM OF 120

BACHELOR OF SCIENCE/MASTER OF SCIENCE - HEALTH STUDIES  
(UNIVERSITY OF DELAWARE)/OCCUPATIONAL THERAPY (THOMAS JEFFERSON UNIVERSITY)

REQUIREMENTS FOR ADMISSION

There are two paths for admission: students who enter the program as freshmen, and current UD students in other majors who enter the program at the end of their freshman year.

ADMISSION PROCESS FOR FRESHMEN APPLICANTS

- Designate the BS/MS Occupational Therapy option as your choice of major.
- Your essay or personal statement should discuss your interest in occupational therapy.
- Candidates will be invited to come to campus for a personal interview in late January or early February.

ADMISSION PROCESS FOR CURRENT UNIVERSITY OF DELAWARE STUDENTS:

- Total earned credits hours (not including AP credits) of 30 or less by the end of the first year at UD (those with more than 30 credits may be evaluated on an individual basis)
  - Cumulative grade point average of 3.3 or higher
  - A grade of “C” or better in all prerequisite courses for the programs at TJU
- Submit a Jefferson College of Health Professions application for admission with an endorsement/letter of recommendation from a designated University of Delaware representative.

ADMISSION DECISIONS

Admissions decisions are made by the University of Delaware-Jefferson Joint Admissions Committee. An average of five candidates will be selected for admission per year.

ARTICULATED CURRICULUM

Students in this program will follow a specific 3-year curricular track at University of Delaware that will include the prerequisite coursework needed to transfer into the Entry-level Master’s in Occupational Therapy (EMOT) program at Jefferson.

Credits earned during the first year at Jefferson will be counted toward the completion of University of Delaware B.S. degree in Health Studies.

Students who have completed the articulated University of Delaware curriculum, have a cumulative grade point average of at least a 3.0, and have earned at least a “C” in all prerequisite coursework, may transfer into the EMOT portion of the program at Thomas Jefferson University.

BACHELOR OF SCIENCE - HEALTH STUDIES  
OCCUPATIONAL THERAPY TRACK

PRE-PROFESSIONAL TRACK IN OCCUPATIONAL THERAPY

This program is a cooperative agreement between University of Delaware and Jefferson College of Health Professions of Thomas Jefferson University (TJU). Students can earn both the Bachelor of Science (B.S.) and the Master of Science (M.S.) degrees in five and a half years. Students will spend the first three years at University of Delaware and then proceed to Jefferson College of Health Professions for the final two and a half years of graduate Occupational Therapy coursework. The B.S. in Health Studies from University of Delaware will be awarded after successful completion of the first year at Jefferson College of Health Professions. The M.S. in Occupational Therapy degree from Thomas Jefferson University will be awarded after successful completion of the final year at Jefferson College of Health Professions.

DEGREE: BACHELOR OF SCIENCE  
MAJOR: HEALTH STUDIES  
OCCUPATIONAL THERAPY TRACK

UNIVERSITY REQUIREMENTS
ENGL 110  Critical Reading and Writing 3 (minimum grade C-)

First Year Experience (FYE) 0-4
Breadth Requirements 12
Discovery Learning Experience (DLE) 3
Multi-cultural Course 3

BREADTH REQUIREMENTS
Creative Arts and Humanities (minimum of a C- required) 3
History and Cultural Change (minimum of a C- required) 3
Social Science and Behavioral Sciences (minimum of a C- required in a minimum of one
DEGREE: BACHELOR OF SCIENCE

liberal arts requirements and elective courses allows students to pursue a minor or an area of interest outside of the college, a double degree, double major, or interdepartmental major. Students are encouraged to meet with their advisors at least once each semester. Failure to meet regularly with a faculty advisor can result in a delay in graduation if program requirements have not been met.

Students are encouraged to enrich their academic programs by participating in study abroad experiences, seminars, and student organizations. To enhance prospects for employment and obtaining internships, students are encouraged to seek experiences outside the classroom. For those planning to pursue a graduate program, research apprenticeships are available. Opportunities exist for students to participate as student members of national, regional, and statewide professional organizations related to each major.

There are several special academic opportunities for exceptionally talented and highly motivated students. Students may participate in the University's Honors Program, undergraduate research, and the Degree with Distinction program. The College's Dean's Scholar Program also provides qualified students with the opportunity to develop individualized programs of study.

MAJOR DEGREE PROGRAMS

The Athletic Training major is accredited by the Commission on Accreditation of Athletic Training Education (CAATE). This major prepares students for taking the BOC exam for certification as an Athletic Trainer (ATC.)

Concentrations within the Exercise Science major allow students to further specialize in Biomechanics and Motor Control, Exercise Physiology, or as a Medical Scholar. The Exercise Physiology and Biomechanics and Motor Control concentrations are designed primarily for students interested in going on to graduate school, Physical Therapy School, Physician Assistant School, Occupational Therapy School of other clinical programs and research. The Medical Scholars concentration prepares students for Medical and Dental School.

Honors Degrees In The Department Of Kinesiology and Applied Physiology

Students can earn an Honors Bachelor of Science Degree by completing the following requirements:

**Kinesiology and Applied Physiology**

Telephone: (302) 831-4909
http://www.udel.edu/kaap
Faculty Listing: www.udel.edu/chs/facultystaff/index.html#kaap

The Department of Kinesiology and Applied Physiology offers undergraduate majors in Athletic Training and Exercise Science, both with Honors Degree options, as well as minors in Exercise Science and Strength and Conditioning. The programs integrate background coursework in the natural and physical sciences with the study of the major field. These undergraduate programs prepare students for clinical careers as athletic trainers, careers in exercise science, and post-graduate study in areas such as medicine, physical therapy, and research in kinesiology.

Each student’s academic advisor, a faculty member with expertise in the student's field of interest, will assist in selecting courses and experiences that focus on the student's interests and professional goals. Careful selection of...
All requirements for the Bachelor of Science Degree in the respective major.
All of the University's generic requirements for the Honors Baccalaureate Degree.

Application Procedures

Entering freshmen and transfer students may be admitted directly into the major in Exercise Science. Freshmen seeking admission to the major in Athletic Training are admitted to an interest group associated with the major. Freshmen participating in an interest group are eligible to apply for admission to the major at the end of the freshman year.

Enrollment in major courses is restricted to majors. Non-majors are allowed to register for 100- and 200-level courses through the drop/add process if space is available. Non-majors are not normally permitted in 300- and 400-level courses.

DEGREE REQUIREMENTS FOR MAJORS

GENERAL STUDIES REQUIREMENTS

UNIVERSITY REQUIREMENTS
ENGL 110 Critical Reading and Writing 3 (minimum grade C-)
First Year Experience (FYE) 0-4
University Breadth Requirements (minimum grade of C- required) 12
Discovery Learning Experience (DLE) 3
Multi-cultural Courses 3
This course can be used in the Breadth Requirements, Major Requirements, or Electives.

ATHLETIC TRAINING: ADMISSION REQUIREMENTS AND APPLICATION PROCEDURE

Incoming freshmen and transfer students interested in the athletic training major are admitted to “Athletic Training Interest” program. At the completion of the freshman year, students seeking admission into the athletic training major must have completed the following:

Freshman Year - Athletic Training Curriculum:
CHEM 103 4
*KAAP155 3
*KAAP 220 3
MEDT200 3
NTDT200 3
16

ENGL 110 3
Breadth or MATH course (recommended; not required) 3
PSYC100 3
*KAAP210 3
*KAAP240 (Spring only) 3
15

*These courses are used to calculate the Prerequisite Courses GPA. Students MUST earn a B- or better grade in these four prerequisite courses to be considered for admission into the Athletic Education Training Program.

All students seeking admission into the Athletic Training Education Program must have attained a minimum GPA of 2.75/4.00

TECHNICAL STANDARDS FOR ADMISSION

The Athletic Training Education Program at the University of Delaware is a rigorous and intense program that places specific requirements and demands on the students enrolled in the program. An objective of this program is to prepare graduates to enter a variety of employment settings and to render care to a wide spectrum of individuals engaged in physical activity. The technical standards set forth by the Athletic Training Education Program establish the essential qualities considered necessary for students admitted to this program to achieve the knowledge, skills and competencies of an entry-level athletic trainer, as well as meet the expectations of the program’s accrediting agency (Commission on Accreditation of Athletic Training Education Programs - “CAATE”). The following abilities and expectations must be met by all students admitted to the Athletic Training Education Program. In the event a student is unable to fulfill these technical standards, with or without reasonable accommodation, the student will not be admitted into the program.

Compliance with the program’s technical standards does not guarantee a student’s eligibility for the Board of Certification (BOC) examination.

Candidates for selection to the Athletic Training Education Program must demonstrate:

The mental capacity to assimilate, analyze, synthesize, integrate concepts and problem solve to formulate assessment and therapeutic judgments and to be able to distinguish deviations from the norm;
Sufficient postural and neuromuscular control, sensory function, and coordination to perform appropriate physical examinations using accepted techniques; and accurately, safely, and efficiently use equipment and materials during
the assessment and treatment of patients;
the ability to communicate effectively and sensitively with patients and colleagues, including individuals from different cultural and social backgrounds; this includes, but is not limited to, the ability to establish rapport with patients and communicate judgments and treatment information effectively. Students must be able to understand and speak the English language at a level consistent with competent professional practice;
The ability to record the physical examination results and a treatment plan clearly and accurately;
The capacity to maintain composure and continue to function well during periods of high stress;
The perseverance, diligence and commitment to complete the athletic training education program as outlined and sequenced;
Flexibility and the ability to adjust to changing situations and uncertainty in clinical situations;
Affective skills and appropriate demeanor and rapport that relate to professional education and quality patient care.

Candidates for selection to the Athletic Training Education Program will be required to verify that they understand and meet these technical standards or that they believe, with certain accommodations, they can meet the standards.

The Director of the Office of Equity and Inclusion will evaluate a student who states he/she could meet the program’s technical standards with accommodation and confirm that the stated condition qualifies as a disability under applicable laws.

If a student states he/she can meet the technical standards with accommodation, then the University will determine whether it agrees that the student can meet the technical standards with reasonable accommodation; this includes determination as to whether the accommodations requested are reasonable, taking into account whether accommodation would jeopardize clinician/patient safety, or the educational process of the student or the institution, including all coursework, clinical experiences and internships deemed essential to graduation.

In accordance with CAATE “Health and Safety” standard F1 that states: “A physical examination by a MD/DO/NP/PA must verify that the student is able to meet the physical and mental requirements - with or without reasonable accommodation - of an athletic trainer. This examination must include:

- a medical history,
- an immunization review, and
- evidence of a physical examination that is maintained by the institution in accordance with established confidentiality statutes.”

All athletic training students will be required to comply with the above standard. As a result, those students formally accepted into the ATEP following the ATI experience, will be required to have a physical examination performed by a UD physician or other appropriate recognized medical professional in accordance with the above provision. Documentation of the physical examination must be filed before beginning your first clinical rotation as part of the KAAP257 - Athletic Training Practicum I class. The results of this examination will then be filed with your permanent medical records at the University of Delaware.

Criteria For Admission
Eight criteria are evaluated as part of the admission process in accepting students into the ATEP:

- Overall GPA
- Prerequisite Courses GPA
- Directed Observation Hours
- Letters of Recommendation
- Interview
- Essay
- Clinical Evaluations
- Clinical Competency Evaluation and Palpation Checklist

In evaluating the criteria, different ranking scales (1-5, 1-10, etc) are used. In each case the top student in each criteria would receive the lowest number awarded.

The eight criteria are evaluated in the following manner:

Overall GPA - The total number of candidates applying for admission to the program is divided by (10). For example, if twenty students apply, 20 is divided by 10 and the result is 2. In cases where a number falls between whole numbers (i.e. 2.6) the number would either be rounded up or down depending on where it fell on the scale. 2.5 would be rounded upward to 3, whereas 2.4 would be rounded downward to 2. We then rank the overall GPA of the students from high to low. The students would then be placed in groups of 2 with the top two students receiving a score of (1). The next two highest GPAs would receive a
Prerequisite Courses GPA - A total of four classes (KAAP155, KAAP210, KAAP220 and KAAP240) are used to calculate the Prerequisite Courses GPA. The candidates’ GPAs are ranked from high to low. The student with the highest GPA receives a score of (1); this number is then multiplied by two (1 X 2 = 2) for a total score of two. We continue scoring the students until everyone receives a score. We weight this criterion more heavily than others because we believe the Prerequisite Courses GPA is a very good predictor for success in our program.

Directed Observation Hours - Students are assigned by the Coordinator of the “Athletic Training Interest” program to a variety of clinical venues to gain valuable directed observation hours. Students who obtain between 50-99 directed observation hours receive a score of four (4). Students who obtain between 100-149 directed observation hours receive a score of three (3). Students who obtain between 150-199 directed observation hours receive a score of two (2). Students who obtain over 200 directed observation hours receive a score of one (1).

Letters of Recommendation - Students seeking admission into the ATEP will be asked to secure three letters of recommendation from individuals who can attest for their personality and clinical abilities. Letters of recommendation are evaluated using a ranking scale of (1-5). Each athletic training faculty member reads the three letters of recommendation and gives them a numerical score of between (1-5). A score of one would be considered excellent, while a score of five would be poor. All letters of recommendation are read independently. The scores from all the evaluators are added together and then divided by the total number of evaluators. The averaged score is then recorded on the admission ranking form.

Interview - Candidates seeking admission into the ATEP are given a formal interview conducted by the athletic training faculty, in May of each year. Each evaluator uses a standardized form, worth 100 points. At the end of the interview process the score for each candidate is totaled and then divided by the number of evaluators to get an overall interview score. The student with the best average interview score receives a score of (1), next highest is given a score of (2) and so on until everyone has a score. This number is then multiplied by two (i.e. 1 x 2 = 2, 2 x 2 = 4, etc...). We weight this criterion more heavily than others because we believe the Interview is a very good predictor for success in our program.

Essay - The Essay criteria is scored using the same method as used for Letters of Recommendation.

Clinical Evaluations - Students are required to complete a series of four clinical rotations during the interest phase of the program. In doing so they are formally evaluated by the Approved Clinical Instructors (“ACI’s”) at each rotation. Clinical performance is critiqued on areas involving both “Skills/Abilities” and “Personal Attributes”. A Likert scale (0-5) is used in this process. The overall evaluation score that combines both “Skills/Abilities” and “Personal Attributes” is averaged across all 4 rotations. Higher evaluation scores are best. The evaluation scores for each student would be rank ordered from highest to lowest. The Clinical Evaluations are scored using the same criteria used with Overall GPA.

Clinical Competency Evaluation and Palpation Checklist - Students are expected to complete the “Clinical Competency Evaluation Checklist” and the “Palpation Checklists” throughout the course of the academic year [September - May]. A percentage of the total number of possible “ACI check-offs” will be calculated to determine how many competencies were completed (e.g. - 112/156 = 71.8%). The percentage scores for each student would be rank ordered from highest to lowest. The Clinical Competency Evaluation and Palpation Checklists are scored using the same criteria used with Overall GPA.

When all the criteria have been scored/ranked, the 8 scores are added together, to make a grand total score. The candidate with the lowest (BEST) grand total score is ranked as the first candidate who will be offered admission to the ATEP.

Acceptance into the ATEP is based upon the stated criteria and the number of available openings in the program. Meeting the minimum admission requirements does not guarantee acceptance into the program. Offers of admission into the ATEP are presented on a competitive basis to those individuals who are most qualified. Students may apply for admission to the ATEP at the end of the spring semester. Acceptance/rejection letters will be mailed to each candidate by July 1st.

Students interested in transferring from another institution or from another major at the University of Delaware must meet University
The student will be exposed to upper extremity, lower extremity, equipment intensive, and general medical experiences of both genders. Athletic training students are evaluated at the end of each clinical assignment.

Once students are admitted to the program, they are required to maintain the following minimum standards:

- Cumulative GPA of 2.0;
- Satisfactory completion of the required Practicum sequence;
- Meet the technical standards for admission.

Students who do not maintain the above minimum standards are placed on probation and are required to correct all deficiencies by the end of the next semester. Students who do not correct deficiencies are dropped from the curriculum.

BOARD OF CERTIFICATION (BOC) EXAM ELIGIBILITY
Candidates who are enrolled in their final semester/quarter prior to graduation are eligible to sit for the BOC exam. Qualified candidates for the BOC certification exam must meet the following requirements:

- Endorsement of the examination application by the CAATE recognized Program Director (PD) of the CAATE accredited education program.
- Proof of current certification in EMERGENCY CARDIAC CARE (ECC). (Note: ECC certification must be current at the time of initial application and any subsequent exam retake registration).

BACHELOR OF SCIENCE - ATHLETIC TRAINING

UNIVERSITY REQUIREMENTS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ENGL 110</td>
<td>Critical Reading and Writing</td>
<td>3</td>
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<td></td>
<td>(minimum grade C-)</td>
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<tr>
<td>FYE</td>
<td>First Year Experience</td>
<td>0-4</td>
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<td></td>
<td>Discovery Learning Experience</td>
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<td>Multicultural Course</td>
<td>3</td>
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<td>Three credits in an approved course</td>
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<td>or courses stressing multicultural,</td>
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<td>ethnic, and/or gender-related course</td>
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<td>University Breadth Requirements</td>
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<td>(minimum grade of C- required)</td>
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</tbody>
</table>

University requirements specify that all students will be required to complete a minimum of 12 credits from the list of University breadth courses and all students will be required to take a minimum of three credits, from the following categories receiving a minimum grade of C-.

The Athletic Training major adds further breadth
**BACHELOR OF SCIENCE - EXERCISE SCIENCE (BIOMECHANICS AND MOTOR CONTROL)**

requirements in two of the categories, as noted below.
Creative Arts and Humanities - HLTH241 3
History and Cultural Change 3
Social and Behavioral Science 6
  PSYC100 - General Psychology 3
  One additional course from this group 3
Mathematics, Natural Sciences & Technology
  Math Course 3
  BISC207 - Introductory Biology 4
  CHEM103 - General Chemistry 4

**MAJOR REQUIREMENTS** (97 Credits. Minimum grade C- in each)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BISC 276</td>
<td>Human Physiology</td>
<td>4</td>
</tr>
<tr>
<td>KAAP 155</td>
<td>Lifestyle Awareness - Athletic Trainers</td>
<td>3</td>
</tr>
<tr>
<td>KAAP 210</td>
<td>Emergency Management of Injuries and Illnesses</td>
<td>3</td>
</tr>
<tr>
<td>KAAP 220</td>
<td>Anatomy and Physiology</td>
<td>3</td>
</tr>
<tr>
<td>KAAP 240</td>
<td>Introduction to Athletic Training</td>
<td>3</td>
</tr>
<tr>
<td>KAAP257</td>
<td>Athletic Training Practicum I</td>
<td>3</td>
</tr>
<tr>
<td>KAAP 258</td>
<td>Advanced Taping and Bracing Methods</td>
<td>1</td>
</tr>
<tr>
<td>KAAP320</td>
<td>Principles of Strength/Conditioning</td>
<td>4</td>
</tr>
<tr>
<td>KAAP350</td>
<td>Basic Concepts in Kinesiology</td>
<td>3</td>
</tr>
<tr>
<td>KAAP 357</td>
<td>Athletic Training Practicum II</td>
<td>3</td>
</tr>
<tr>
<td>KAAP 358</td>
<td>Athletic Training Practicum III</td>
<td>3</td>
</tr>
<tr>
<td>KAAP395</td>
<td>Sports Medicine Pharmacology</td>
<td>3</td>
</tr>
<tr>
<td>KAAP 400</td>
<td>Research Methods</td>
<td>3</td>
</tr>
<tr>
<td>KAAP 405</td>
<td>Rehabilitation of Athletic Injuries I</td>
<td>3</td>
</tr>
<tr>
<td>KAAP 406</td>
<td>Rehabilitation of Athletic Injuries II</td>
<td>3</td>
</tr>
<tr>
<td>KAAP 407</td>
<td>Prevention/Recognition/ Athletic Injuries</td>
<td>3</td>
</tr>
<tr>
<td>KAAP 409</td>
<td>Therapeutic Modalities</td>
<td>4</td>
</tr>
<tr>
<td>KAAP 420</td>
<td>Functional Human Anatomy</td>
<td>5</td>
</tr>
<tr>
<td>KAAP 425</td>
<td>Biomechanics of Human Movement</td>
<td>4</td>
</tr>
<tr>
<td>KAAP430</td>
<td>Physiology of Activity</td>
<td>4</td>
</tr>
<tr>
<td>KAAP448</td>
<td>Organization &amp; Administration/ Athletic Training</td>
<td>3</td>
</tr>
<tr>
<td>KAAP 449</td>
<td>Advanced Topics in Sports Medicine</td>
<td>3</td>
</tr>
<tr>
<td>KAAP 457</td>
<td>Athletic Training Practicum IV</td>
<td>3</td>
</tr>
<tr>
<td>KAAP 458</td>
<td>Athletic Training Practicum V</td>
<td>3</td>
</tr>
<tr>
<td>KAAP 459</td>
<td>Athletic Training Practicum VI</td>
<td>3</td>
</tr>
<tr>
<td>KAAP 480</td>
<td>Upper Extremity and Spine Evaluation</td>
<td>3</td>
</tr>
<tr>
<td>KAAP 481</td>
<td>Lower Extremity and Spine Evaluation</td>
<td>3</td>
</tr>
<tr>
<td>KAAP488</td>
<td>Upper Extremity and Spine Evaluation Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>KAAP489</td>
<td>Lower Extremity and Spine Evaluation</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Evaluation Laboratory</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>HLTH241 - Ethical Aspects of Health Care</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MEDT200 - The Language of Medicine</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>NTDT200 - Nutrition Concepts</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>STAT200 - Basic Statistical Concepts</td>
<td>3</td>
</tr>
</tbody>
</table>

**ELECTIVES**
After required courses are completed, sufficient elective credits must be taken to meet the minimum credits required for the degree.

**CREDITS TO TOTAL A MINIMUM OF 123**

**BACHELOR OF SCIENCE - EXERCISE SCIENCE (BIOMECHANICS AND MOTOR CONTROL)**

**UNIVERSITY REQUIREMENTS**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 110</td>
<td>Critical Reading and Writing</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>(minimum grade C-)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>First Year Experience (FYE) (Satisfied by KAAP105)</td>
<td>0-4</td>
</tr>
<tr>
<td></td>
<td>Discovery Learning Experience (DLE)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>(Satisfied by KAAP400)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Multi-cultural Courses</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Three credits in an approved course or courses stressing multi-cultural, ethnic, and/or gender-related course content.</td>
<td>3</td>
</tr>
</tbody>
</table>

**UNIVERSITY BREADTH REQUIREMENTS**
(C- required in each course)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Creative Arts and Humanities</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>History and Cultural Change</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Social and Behavioral Science</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>PSYC100 - General Psychology</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Math, Natural Science, &amp; Technology</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>NTDT200 - Nutrition Concepts</td>
<td>3</td>
</tr>
</tbody>
</table>

**MAJOR REQUIREMENTS** (64/65) (minimum grade of C-)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 103</td>
<td>General Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 104</td>
<td>General Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>MATH221</td>
<td>Calculus I</td>
<td>3</td>
</tr>
<tr>
<td>or</td>
<td>MATH 241 - Analytic Geometry and Calculus A</td>
<td>4</td>
</tr>
<tr>
<td>MEDT 200</td>
<td>The Language of Medicine</td>
<td>3</td>
</tr>
<tr>
<td>BISC 207</td>
<td>Introductory Biology I</td>
<td>4</td>
</tr>
<tr>
<td>BISC 208</td>
<td>Introductory Biology II</td>
<td>4</td>
</tr>
<tr>
<td>PHYS201</td>
<td>Introductory Physics I</td>
<td>4</td>
</tr>
<tr>
<td>or</td>
<td>PHYS207 - Fundamentals of Physics I</td>
<td>4</td>
</tr>
<tr>
<td>PHYS202</td>
<td>Introductory Physics II</td>
<td>4</td>
</tr>
<tr>
<td>or</td>
<td>PHYS207 - Fundamentals of Physics II</td>
<td>4</td>
</tr>
</tbody>
</table>
### Major Requirements (minimum of C-)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 103</td>
<td>General Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 104</td>
<td>General Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>MATH 221</td>
<td>Calculus I</td>
<td>3</td>
</tr>
<tr>
<td>or</td>
<td>MATH 241</td>
<td></td>
</tr>
<tr>
<td>MATH 241</td>
<td>Analytic Geometry and Calculus A</td>
<td>4</td>
</tr>
<tr>
<td>MEDT200</td>
<td>The Language of Medicine</td>
<td>3</td>
</tr>
<tr>
<td>BISC 207</td>
<td>Introductory Biology I</td>
<td>4</td>
</tr>
<tr>
<td>BISC 208</td>
<td>Introductory Biology II</td>
<td>4</td>
</tr>
<tr>
<td>PHYS201</td>
<td>Introductory Physics I</td>
<td>4</td>
</tr>
<tr>
<td>or</td>
<td>PHYS207</td>
<td></td>
</tr>
<tr>
<td>PHYS207</td>
<td>Fundamental Physics I</td>
<td>4</td>
</tr>
<tr>
<td>or</td>
<td>PHYS202</td>
<td></td>
</tr>
<tr>
<td>PHYS202</td>
<td>Introductory Physics I</td>
<td>4</td>
</tr>
<tr>
<td>or</td>
<td>PHYS208</td>
<td></td>
</tr>
<tr>
<td>PHYS208</td>
<td>Fundamental Physics II</td>
<td>4</td>
</tr>
<tr>
<td>or</td>
<td>PSYC325</td>
<td></td>
</tr>
<tr>
<td>PSYC325</td>
<td>Child Psychology</td>
<td>3</td>
</tr>
<tr>
<td>or</td>
<td>PSYC334</td>
<td></td>
</tr>
<tr>
<td>PSYC334</td>
<td>Abnormal Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

### Concentration Requirements (9)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>KAAP417</td>
<td>Introduction to LabView</td>
<td>3</td>
</tr>
<tr>
<td>KAAP427</td>
<td>Biomechanics II: Measure of Human Motion</td>
<td>3</td>
</tr>
<tr>
<td>KAAP301</td>
<td>Motor Development</td>
<td>3</td>
</tr>
</tbody>
</table>

### Electives

After required courses are completed, sufficient elective credits must be taken to meet the minimum credits required for the degree.

### Credits to Total a Minimum of 120
**BACHELOR OF SCIENCE - EXERCISE SCIENCE - (MEDICAL SCHOLAR)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BISC 401</td>
<td>Molecular Biology of the Cell</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 527</td>
<td>Introductory Biochemistry</td>
<td>3</td>
</tr>
<tr>
<td>BISC 403</td>
<td>Genetic and Evolutionary Biology</td>
<td>3</td>
</tr>
<tr>
<td>BISC408</td>
<td>Mammalian Histology</td>
<td>4</td>
</tr>
<tr>
<td>KAAP420</td>
<td>Functional Anatomy</td>
<td>5</td>
</tr>
<tr>
<td>CHEM 321</td>
<td>Organic Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 322</td>
<td>Organic Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>ARSC 480</td>
<td>Issues in Healthcare for Children and Families</td>
<td>3</td>
</tr>
<tr>
<td>ARSC 482</td>
<td>Issues in Public Health – Economics</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 410</td>
<td>Health Services Practicum and Seminar</td>
<td>3</td>
</tr>
</tbody>
</table>

**ELECTIVES**

After required courses are completed, sufficient credits must be taken to meet the minimum credits required for the degree.

**CREDITS TO TOTAL A MINIMUM OF 120**

**NOTE:** This curriculum meets the Medical Scholars curricular requirements with a specialization in Bioethics. Completion of a Senior Thesis UNIV 401, UNIV 402 also meets the requirements for the Medical Scholars specialization in Translational Research.

**MINOR IN EXERCISE SCIENCE**

This minor is designed for students in majors other than exercise science who are planning careers in the health sciences and clinical fields and who wish to acquire knowledge regarding the mechanical, neurological, and physiological aspects of exercise. Students applying for the minor must have completed at least one semester of full-time study with a minimum GPA of 2.0. A grade of C- or better in required courses is needed for successful completion of the minor.

**Required Courses:**

- KAAP 309 Pre-Clinical Anatomy and Physiology I 4
- KAAP 310 Pre-Clinical Anatomy and Physiology II 4
- KAAP 426 Biomechanics I 4
- KAAP 428 Motor Control and Learning 4
- KAAP 430 Exercise Physiology 4

Total Credits 20

**Prerequisite Courses:**

- PREREQ for KAAP 310: KAAP 309
Medical Technology

PREREQ for KAAP 426: PHYS 201 or PHYS 207, and KAAP 309
PREREQ for KAAP 428: KAAP 309
PREREQ for KAAP430: KAAP 310 or KAAP 220

MINOR IN STRENGTH AND CONDITIONING

This minor is designed to provide students with in depth understanding of the theory and practical considerations associated with physical training to enhance strength and conditioning. Students successfully completing the minor will be prepared to take the Strength and Conditioning Specialist Certification examination offered by the National Strength and Conditioning Association.

Students applying for the minor must have completed at least one semester of full time study with a minimum GPA of 2.25. Enrollment in the minor for at least four semesters is necessary due to sequencing of courses. A grade of C- or better in required courses is needed for successful completion of the minor.

Prerequisite Courses:

The following courses are identified as prerequisites for selected courses in the minor. It is not necessary to take all of the prerequisite courses prior to enrolling in the first course in the minor. See course descriptions for the required courses to identify individual course prerequisites.

KAAP 220 Anatomy and Physiology 3
Or
KAAP 309 Pre-Clinical Anatomy and Physiology I 4
KAAP 350 Basic Concepts in Kinesiology 3
NTDT 200 Nutrition Concepts 3

Required courses:
KAAP 320 Principles of Strength/Conditioning 4
KAAP425 Biomechanics of Human Movement 4
or
KAAP426 Biomechanics I 4
KAAP 430 Exercise Physiology 4
or
KAAP433 Applied Physiology of Activity 4
BHAN 435 Physical Activity Behavior 3
KAAP447 Advanced Topics in Strength and Conditioning 3
KAAP 462 Practicum in Strength and Conditioning 3
NTDT 310 Nutrition and Activity 3

Medical Technology

Phone: (302) 831-2849
http://www.udel.edu/medtech
Faculty Listing: http://www.udel.edu/medtech/faculty_profiles.html

The Department of Medical Technology offers a major in Medical Technology, as well as an Honors Degree and Honors courses. Medical Technology (Biomedical Sciences) is medical laboratory science related to the prevention, diagnosis and therapy of disease. The Medical Technology major is accredited by the National Accrediting Agency for Clinical Laboratory Sciences (5600 N. River Road, Suite 720, Rosemont, IL 60018; telephone 773-714-8880.

The four-year B.S. degree curriculum offers an undergraduate professional education designed to prepare students for career entry positions in hospital clinical laboratories and industry as well as graduate study for medical laboratory science, physician assistant and related areas.

During the first two years at the University, students interested in medical technology should take courses in the basic sciences and liberal arts, including prerequisite courses in biology and chemistry. The professional and clinical courses in the third and fourth years include a final period of supervised clinical education in the Christiana Care Health Services and other affiliated institutions. One required Winter Session is included in the B.S. curriculum.

During the clinical rotation period (fall of junior year and winter and spring terms of the senior year), students should plan for the possibility of 1) added expense for transportation and uniforms and 2) added expense for living off-campus at the clinical site for at least a four-week rotation during the senior year when the commuting distance is excessive. Students are required to meet all immunization, titer, routine physical examination, drug screening, safety, criminal background check, child abuse registry investigation and adult abuse registry investigation requirements, and proof of health insurance prior to clinical coursework. Additional requirements for clinical education may be required by the healthcare facility to which the student is assigned.

For exceptionally talented and highly motivated students, several special academic opportunities are available. Students may pursue the Honors Degree with Distinction, the Honors Degree, the Degree with Distinction, or undergraduate research through independent study.
Freshmen or transfer students may be admitted to the University with a declared interest in medical technology. Students will be evaluated for admission to the Medical Technology major after completion of the prerequisite courses. Priority will be given to full-time University sophomores.

Class size is limited to 36 medical technology majors, and any interested student should talk with the Department Chair as early as possible.

Eligibility for admission to the junior year of the Medical Technology major will be based on the following criteria:

- Minimal GPA of 2.0 in first four semesters of coursework.
- Minimal grade point index of 2.0 computed from specified courses in biological sciences and chemistry, including laboratories: BISC 207, BISC 208, BISC 276, BISC 300, and CHEM 103, CHEM 104, CHEM 213-CHEM 215, and CHEM 214-CHEM 216.

Completion of at least 60 credits, including the courses listed above.

Within the pool of eligible students, admission to the major courses will be determined by academic achievement. All applicants will be evaluated by the Medical Technology Undergraduate Program Committee.

The following course sequence is recommended. These courses may be subject to change, so it is essential that students meet regularly with their faculty advisors. Courses taken pass/fail cannot be used to complete major requirements. Pass/fail courses are for free electives only. A minimal grade of C- is required in each MEDT course in the Medical Technology major. In order to meet degree requirements, medical technology majors must have a minimum cumulative GPA of 2.0 to progress in the medical technology sequence. A student who earns a grade lower than C- in a medical technology course must repeat the course and achieve a grade of at least C- before enrolling in any medical technology course which has the prior course as a prerequisite. Students are not permitted to repeat any medical technology course more than once. Further, students who earn a grade lower than C- in more than one medical technology course will not be permitted to continue in the major.

**BACHELOR OF SCIENCE - MEDICAL TECHNOLOGY**

**UNIVERSITY REQUIREMENTS**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 110</td>
<td>Critical Reading and Writing</td>
</tr>
</tbody>
</table>

**FIRST YEAR EXPERIENCE (FYE)**

<table>
<thead>
<tr>
<th>Component</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>University Breadth Requirements</td>
<td>12</td>
</tr>
</tbody>
</table>

**DISCOVERY LEARNING EXPERIENCE (DLE)**

<table>
<thead>
<tr>
<th>Component</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multi-cultural Course</td>
<td>3</td>
</tr>
</tbody>
</table>

One of the courses taken to satisfy the breadth requirements also may satisfy the multicultural course requirement.

**MAJOR REQUIREMENTS**

<table>
<thead>
<tr>
<th>Component</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Second Writing Course: (minimum grade C-)</td>
<td>3</td>
</tr>
<tr>
<td>A second writing course involving significant writing experience including two papers with a combined minimum of 3,000 words to be submitted for extended faculty critique of both composition and content. This course must be taken after completion of 45 credit hours. (See list of courses approved for second writing requirement.)</td>
<td></td>
</tr>
<tr>
<td>One of the following</td>
<td>3-4</td>
</tr>
<tr>
<td>MATH 114</td>
<td>College Mathematics and Statistics</td>
</tr>
<tr>
<td>MATH 115</td>
<td>Pre-Calculus</td>
</tr>
<tr>
<td>MATH 117</td>
<td>Pre-Calculus for Scientists and Engineers</td>
</tr>
<tr>
<td>(for students who do not intend to continue the study of mathematics)</td>
<td></td>
</tr>
<tr>
<td>MATH 221</td>
<td>Calculus I</td>
</tr>
<tr>
<td>MATH 241</td>
<td>Analytic Geometry and Calculus A</td>
</tr>
</tbody>
</table>

Successful performance on the college proficiency exam (0 credits awarded).

**ADDITIONAL BREADTH REQUIREMENTS**

From the list of University breadth courses, an additional nine credits must be taken to meet the requirements for the major; subject areas may be from the same discipline.

<table>
<thead>
<tr>
<th>Component</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creative Arts and Humanities</td>
<td>3</td>
</tr>
<tr>
<td>History and Cultural Change</td>
<td>3</td>
</tr>
<tr>
<td>Social and Behavioral Sciences</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEDT 100</td>
<td>Introduction to Medical Technology</td>
</tr>
<tr>
<td>MEDT 200</td>
<td>The Language of Medicine</td>
</tr>
<tr>
<td>MEDT 250</td>
<td>Communication, Education, &amp; Ethics in Healthcare</td>
</tr>
<tr>
<td>MEDT 370</td>
<td>Phlebotomy Practicum</td>
</tr>
<tr>
<td>MEDT 375</td>
<td>Statistics, Research, and Clinical Laboratory Principles</td>
</tr>
<tr>
<td>MEDT 380</td>
<td>Clinical Immunology and Medical Virology</td>
</tr>
<tr>
<td>MEDT 390</td>
<td>Introduction to Genetics and</td>
</tr>
</tbody>
</table>
Nursing

Molecular Diagnostics 3
MEDT 391 Introduction to Molecular Diagnostics Laboratory 1
MEDT 400 Urinalysis and Body Fluids 2
MEDT 401 Clinical Physiological Chemistry I 3
MEDT 411 Clinical Physiological Chemistry I Laboratory 2
MEDT 404 Hematology I 2
MEDT 414 Hematology I Laboratory 1
MEDT 406 Medical Microbiology 3
MEDT 416 Medical Microbiology Laboratory 2
MEDT 403 Clinical Physiological Chemistry II 4
MEDT 413 Clinical Physiological Chemistry II Laboratory 2
MEDT 418 Medical Technology Senior Seminar 0
MEDT 405 Hematology II 2
MEDT 415 Hematology II Laboratory 2
MEDT 409 Immunohematology 1
MEDT 419 Immunohematology Laboratory 1
MEDT 420 Immunohematology II 1
MEDT 421 Immunohematology II Laboratory 1
MEDT 430 Diagnostic Bacteriology and Medical Mycology 2
MEDT 431 Diagnostic Bacteriology and Medical Mycology Laboratory 2
MEDT 461 Laboratory Practice and Leadership I 1
MEDT 471 Laboratory Practice and Leadership II 1
MEDT 472 Clinical Urinalysis Practicum 1
MEDT 473 Clinical Chemistry Practicum 3
MEDT 475 Clinical Hematology Practicum 3
MEDT 477 Clinical Microbiology Practicum 3
MEDT 479 Clinical Immunohematology Practicum 3
MEDT 480 Senior Capstone 1

BISC 207/BISC 208 Introductory Biology I and II 8
BISC 276 Human Physiology 4
BISC 300 Introduction to Microbiology 4

CHEM 103/CHEM 104 General Chemistry 8
CHEM 213/CHEM 215 Elementary Organic Chemistry with Lab and
CHEM 214/CHEM 216 Elementary Biochemistry with Lab or
CHEM 321/CHEM 322 Organic Chemistry 8

CREDITS TO TOTAL A MINIMUM OF 124

HONORS BACHELOR OF SCIENCE - MEDICAL TECHNOLOGY

The recipient must complete:

All requirements for the Bachelor of Science degree in Medical Technology.
All the University's generic requirements for the Honors Baccalaureate degree.

MINOR IN MEDICAL DIAGNOSTICS

A minor in Medical Diagnostics may be earned by a student in any University bachelor's degree program through successful completion of a minimum of 15 credits as described below. This degree provides students especially those preparing for admission to professional schools in medicine, dentistry, pharmacy and to graduate programs in related health fields with the basic knowledge to evaluate and interpret clinical laboratory data. Before beginning these courses, the student must meet the required course prerequisites. Additional courses for satisfying the requirements for the minor may be approved by the Department. A minimum of C- is required in all courses completed for the minor.

Required courses
BISC208  Introductory Biology II  4
MEDT200  The Language of Medicine  3

Students may select the additional credits from courses listed below:
MEDT220  Forensic Science  3
MEDT360  Clinical Immunology and Medical Virology  3
MEDT390  Intro to Genetics and Molecular Diagnostics  3
MEDT401  Clinical Physiological Chemistry I  3
MEDT403  Clinical Physiological Chemistry II  4
MEDT404  Hematology I  2
MEDT405  Hematology II  2
MEDT406  Medical Microbiology  3
MEDT430  Diagnostic Bacteriology and Medical Mycology  2

Nursing

Telephone: (302) 831-2193
http://www.udel.edu/nursing
Faculty Listing:http://www.udel.edu/chs/facultystaff/index.html#nursing
e-mail: ud-nursing@udel.edu

The School of Nursing offers a traditional baccalaureate degree program in nursing and an accelerated degree program for those who
already hold a baccalaureate degree in another field. There is also a baccalaureate degree program for registered nurses with associate degrees or diplomas. Returning nurses may complete the majority of their course work at home or in the worksite in a distance-learning format.

The School of Nursing offers programs leading to a Master of Science in Nursing (MSN) degree, Post-Master’s Certificates and Doctor of Philosophy in Nursing. In addition, the School offers concentrations in Family Nurse Practitioner, Adult Nurse Practitioner, Neonatal Nurse Practitioner, Health Services Administration, and Clinical Nurse Specialist.

Policies

In order to meet degree requirements, nursing majors must have a minimum cumulative GPA of 2.0 to progress in the nursing sequence. A student who earns a grade lower than C- in a nursing course must repeat the course and achieve a grade of at least C- before enrolling in a more advanced nursing course.

Students are not permitted to repeat any nursing course more than once. Students who earn a grade lower than C- in more than one nursing course will not be permitted to continue in the program. Students should meet regularly with their advisor to ensure that all requirements are being met.

Students are required to meet all immunization, safety, criminal background checks, drug screenings, and CPR requirements prior to clinical coursework and direct patient care. Additional requirements for clinical education may be required by the healthcare agency to which a student is assigned. Students are expected to provide their own transportation to all required clinical experiences and are encouraged to carpool.

Essential Functions

Individuals with disabilities are welcome in the field of nursing. However, the student must be able to perform certain essential functions throughout the program of learning. These physical, cognitive, psychomotor, affective and social abilities are necessary for the provision of safe and effective nursing care. Progression and graduation are contingent upon one’s ability to demonstrate the essential functions delineated for the nursing programs. Affiliated clinical agencies may identify additional essential functions. The nursing program reserves the right to amend the essential functions as deemed necessary.

Students who are otherwise qualified and have a documented disability that will require accommodation to perform these functions, must contact the Office of Disability Support Services. It is the student’s responsibility to register with the DSS office, provide documentation for the disability and request reasonable accommodation(s) that will enable them to continue as a student nurse. Of course, accommodations will be considered on a case-by-case basis, and the University of Delaware will determine if the suggestions are reasonable or if there are other possible accommodations. While the University of Delaware is committed to providing accommodations, those accommodations may not guarantee success in the clinical or employment setting. In addition, the School of Nursing is unlikely to conclude that a surrogate for a nursing student can be considered a reasonable accommodation to perform any of the essential functions listed in this policy.

The essential functions delineated below are necessary for nursing program progression and graduation and for the provision of safe and effective nursing care. The essential functions include but are not limited to:

- Sufficient visual acuity, such as is needed in the accurate preparation and administration of medications, and for the observation necessary for client assessment and care.
- Sufficient auditory perception to receive verbal communication from clients and members of the health team and to assess health needs of people through the use of devices such as stethoscopes and to hear alarms found in intravenous infusion pumps, cardiac monitors, fire alarms, etc.
- Sufficient tactile ability to perform physical assessment of clients and carry out related therapeutic interventions, e.g. catheter insertion and injections.
- Sufficient gross and fine motor coordination to respond promptly and to implement the skills required in meeting client health care needs safely. These include, but are not limited to, manipulation of equipment and performance of CPR.
- Sufficient physical ability to walk or stand for extended periods of time, push/pull medical equipment, transfer clients to and from units, move quickly during emergency situations, move from room to room, and maneuver in small spaces.
Sufficient speaking ability to communicate with clients and the health care team.
Sufficient psychological stability to consistently and dependably engage in the process of critical thinking in order to formulate and implement safe and ethical nursing decisions in a variety of health care settings.
Sufficient interpersonal skills to interact appropriately with patients, families, and other members of the health care team.

Essential Function Standard (Performed consistently and dependably) Examples of necessary activities (not all-inclusive)


Hearing - Auditory ability sufficient for monitoring and assessing health needs. Hear monitor alarm, emergency signals, auscultatory sounds and cries for help.*

Tactile - Tactile ability sufficient for physical assessment and intervention. Perform palpation, functions of physical examination and/or those related to therapeutic intervention (such as insertion of a catheter).*

Motor skills - Gross and fine motor abilities sufficient for providing safe, effective nursing care in a timely manner. Calibrate and use equipment; position patients appropriately.*

Mobility - Physical abilities sufficient for movement from room to room and in small spaces, as well as for lifting and transferring patients. Move around in patient's room, work spaces and treatment areas; administer cardiopulmonary procedures.*

Communication - Communication abilities sufficient for verbal and written interaction with others. Explain treatment procedures, initiate health teaching, and document and interpret nursing actions and patient responses.*

Critical thinking - Critical-thinking ability sufficient for clinical judgment in a timely manner. Identify cause/effect relationships in clinical situations, develop and implement nursing care plans (includes measurement, calculation, reasoning, analysis and synthesis.)*

Interpersonal - Interpersonal abilities sufficient for interaction with individuals, families and groups from various social, emotional, cultural and intellectual backgrounds. Establish rapport with patients and colleagues. Maintain appropriate affect levels.*

*If the student is otherwise qualified and has a documented disability that will require accommodations to perform these functions, the student must contact the Office of Disability Support Services to discuss reasonable accommodations. It is the student's responsibility to register with the DSS office, provide documentation for the disability and request reasonable accommodations.

Health Conditions

Individuals with certain health conditions (including, but not limited to HIV infection, Hepatitis B infection, immunosuppression, seizure disorder, etc.) may require accommodations in order to safely practice in some health care settings. Those students whose health condition may pose a risk to themselves or others (including in the clinical setting) have an obligation to report this condition to the University. Further, those students requiring accommodations must contact the University’s Office of Disability Support Services Office to discuss reasonable accommodations. It is the student's responsibility to register with the DSS office, provide documentation for the disability and request reasonable accommodations.

State Board Standards

Most State Boards of Nursing state that grounds for denial of a license to practice as a registered nurse include, but are not limited to, conviction of a felony or certain other criminal offenses, chemical dependency, mental incompetence, and other reasons authorized by law or regulations.

Licensure

Graduates are eligible for registered nurse licensure in any state upon satisfactory completion of the National Council Licensure Examination for Registered Nurses (NCLEX-RN). If the examination is passed and licensure granted in one state, application may be made to other states for licensure by endorsement.

HONORS DEGREE IN THE DEPARTMENT OF NURSING

Students can earn an Honors Bachelor of Science Degree in Nursing by completing the following requirements:
All requirements for the Bachelor of Science in
BACHELOR OF SCIENCE IN NURSING - NURSING

University Requirements

ENGL 110  Critical Reading and Writing  3
(minimum grade C-)

First Year Experience (FYE)  0-4

Discovery Learning Experience (DLE)  3

Breadth Requirements (minimum grade of C- required in all courses)  12

Creative Arts and Humanities  3

History and Cultural Change  3

Social and Behavioral Science  3

Mathematics, Natural Sciences, & Technology  3

Multi-cultural Courses  3

This course also can be used in the breadth or major requirements. (NURS235 meets this requirement.)

ADDITIONAL BREADTH REQUIREMENTS

Social and Behavioral Science  An additional 6 credits are required in the Social and Behavioral Science category. (may include Life span Development (HDFS201) and General Psychology (PSYC100)  6

MAJOR REQUIREMENTS

BISC 207  Introductory Biology  4

BISC 276  Human Physiology  (minimum grade C-)  4

BISC 300  Introduction to Microbiology  4

CHEM 105  General Chemistry  4

CHEM 106  Elementary Bioorganic Chemistry  5

NTDT 200  Nutrition Concepts  3

STAT 200  Basic Statistical Practice  3

PSYC 100  General Psychology  3

HDFS 201  Life Span Development  3

NURS 100  New Student Connections  1

NURS 101  Basic Human Anatomy  2

NURS 110  Nursing Connections  1

NURS 200  Clinical Decision Making  2

NURS 222  Pharmacology  3

NURS 235  Health, Vulnerability, and Diversity  3

NURS 241  Scientific Basis of Nursing  3

NURS 242  Scientific Basis of Nursing  3

NURS 253  Health and Physical Assessment  3

NURS 352  Adult Health Nursing  3

NURS 354  Psychosocial Nursing  3

NURS 356  Care of Children and Families  3

NURS 358  Women's Health Nursing  3

NURS 362  Research Concepts in Health Care  3

NURS 372  Adult Health Nursing  3

NURS 382  Communities and Health Policy  2

NURS 390  Clinical Work Experiences  2

NURS 411/NURS 412/ NURS 413/NURS414 Topics in Health Care Delivery*  6- 9

BACHELOR OF SCIENCE IN NURSING - NURSING

(Traditional Program)

Nursing Degree

All the University’s generic requirements for the Honors Baccalaureate Degree

Courses at the 600 level or higher may be taken for honors credits (with permission from the course instructor and academic advisor).

BACHELOR OF SCIENCE IN NURSING

The traditional Bachelor of Science in Nursing program is designed to develop the knowledge, understanding and skills essential for the practice of professional nursing and to provide the basis for graduate education. The program is fully accredited by the National League for Nursing Accrediting Commission and the Commission for Collegiate Nursing Education. The first year of the program includes foundation courses in the natural, social, and behavioral sciences, and liberal arts. Each subsequent year increases the nursing content and coursework and culminates in a senior year of clinical residency in direct care clinical agencies. Clinical resources of the School include healthcare agencies in Delaware, Maryland, Pennsylvania, and New Jersey.

During clinical rotations, students are exposed to many different experiences in a variety of healthcare settings. These include the major hospitals in New Castle County as well as regional community hospitals, a variety of extended care facilities, independent living facilities, and various community-based providers who offer a range of services across the life span. Students also learn in a state-of-the-art simulation laboratory. Students graduate as nurse generalists with experiences in pediatric, maternity, psychiatric, medical-surgical, and community health nursing.

Nursing students are encouraged to participate in the university chapter of the National Student Nurses’ Association and the Minority Student Nurses’ Organization. Students who have earned recognition for superior academic achievement may be invited for membership in Beta Xi Chapter of Sigma Theta Tau, the International Honor Society of Nursing. Qualified students may participate in the University’s Honors, undergraduate research, and the Degree with Distinction programs. Research opportunities are available to all undergraduates.
Students taking courses in an accelerated mode are sometimes out of sequence with on-campus course offerings. In these instances, lecture will be provided via CD-ROM or web, and augmented by group discussion sessions.

Eligibility for this course of study includes the following:

1. An earned baccalaureate degree.
2. GPA of 3.00 or greater
3. Completion of all non-nursing courses prior to winter session of the program.

For more information or to make an appointment to discuss the accelerated program, please contact the School at 302-831-1253. A sample curriculum plan may be viewed at the Accelerated Degree Program website (www.udel.edu/nursing/accelerated.html). Students who may need financial assistance in pursuing a second degree should contact the Financial Aid Office at 302-831-1534. Reference books on private financial aid sources are available in libraries or local academic institutions in your community.

UNIVERSITY REQUIREMENTS
ENGL 110 Critical Reading and Writing (minimum grade C-) 3
First Year Experience (FYE) 0-4
University Breadth Requirements 12
Creative Arts and Humanities (minimum grade C-) 3
History and Cultural Change (minimum grade C-) 3
Social and Behavioral Science (minimum grade C-) 3
Mathematics, Natural Sciences, and Technology (minimum grade C-) 3

These requirements may be fulfilled by courses required for the nursing major. These four courses must be chosen from different departments.

Six additional credits are required in the Social and Behavioral Science category (may include Lifespan Development, HDFS201, and General Psychology, PSYC100). 6

Students taking courses in an accelerated mode are sometimes out of sequence with on-campus course offerings. In these instances, lecture will be provided via CD-ROM or web, and augmented by group discussion sessions.

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UNIVERSITY REQUIREMENTS
ENGL 110 Critical Reading and Writing (minimum grade C-) 3
First Year Experience (FYE) 0-4
University Breadth Requirements 12
Creative Arts and Humanities (minimum grade C-) 3
History and Cultural Change (minimum grade C-) 3
Social and Behavioral Science (minimum grade C-) 3
Mathematics, Natural Sciences, and Technology (minimum grade C-) 3

These requirements may be fulfilled by courses required for the nursing major. These four courses must be chosen from different departments.

Six additional credits are required in the Social and Behavioral Science category (may include Lifespan Development, HDFS201, and General Psychology, PSYC100). 6

Discovery Learning Experience (DLE) 3
Senior nursing clinical courses meet this requirement.
Multi-cultural Courses 3
This course also can be used in the breadth requirements.

Major Requirements
General Biology with Lab** 4
Anatomy and Physiology* 6
BACHELOR OF SCIENCE IN NURSING - BACCALAUREATE FOR THE REGISTERED NURSE (BRN)

Microbiology with Lab** 4
General Chemistry with Lab** 4
Bioorganic Chemistry** 4
Life Span Development 3
Nutrition 3
General Psychology 3
Statistics 3

Free Electives - Sufficient credits to meet the minimum credits for the degree.

*Anatomy and Physiology course must be completed within 5 years of admission.
** Other science prerequisites must be completed within 10 years of admission

Nursing Courses (66 credits)
NURS 220 Concepts of Nursing Practice 3
NURS 222 Pharmacology 3
NURS 230 Foundations of Nursing 2
NURS 250 Health Assessment Across the Lifespan 2
NURS 312 Pathophysiology 4
NURS 352 Adult Health Nursing 3
NURS 354 Psychosocial Nursing 3
NURS 356 Care of Children and Families 3
NURS 358 Women's Health Nursing 3
NURS 362 Research Concepts in Health Care 3
NURS 372 Adult Health Nursing 3
NURS 382 Communities and Health Policy 2
NURS 411/NURS 412/NURS413/NURS414 Topics in Health Care Delivery 3
NURS 411/NURS 412/NURS413/NURS414 Topics in Health Care Delivery* 3
NURS 453 Clinical Applications: Adult Health Nursing I 3
NURS 457 Clinical Applications: Maternal Child Nursing 3
NURS 459 Clinical Application: Psychosocial Nursing 3
NURS 460 Clinical Integration Seminar I 2
NURS 473 Clinical Applications: Adult Health Nursing II 3
NURS 477 Clinical Applications: Care of Populations 3
NURS 479 Clinical Preceptorship 3
NURS 480 Clinical Integration Seminar II 2
*Each student is required to take 6 credits of NURS 411/NURS 412/NURS413/NURS414

ELECTIVES
After required courses are completed, sufficient elective credits must be taken to meet the minimum credits required for the degree.

CREDITS TO TOTAL A MINIMUM OF 120

Many nursing courses are offered once each academic year. Students must complete selected required lower division courses before enrolling in upper division nursing courses. Nursing courses must be taken in sequence unless otherwise specified.

BACHELOR OF SCIENCE IN NURSING - BACCALAUREATE FOR THE REGISTERED NURSE (BRN)

The School of Nursing offers a separate program to allow registered nurses to earn a Bachelor of Science in Nursing. The Baccalaureate for the Registered Nurse major is an innovative program designed to build on basic nursing knowledge, enhancing nursing practice in an increasingly complex society. This major is offered in a distance learning format to maximize educational opportunities for registered nurses. Licensed registered nurses who are graduates of associate degree or diploma programs may apply for admission to this program. For the RN to MSN program, please see graduate nursing programs.

Admission Requirements

A registered nurse who is a graduate of an associate degree or diploma nursing program may apply for admission to the Baccalaureate for the Registered Nurse Major. The applicant should request a distance learning application form or access the application online at http://www.udel.edu/nursingapplication and submit the form with fee to the School of Nursing.

Materials requested are:

- Completed application form with application fee
- Official transcripts verifying college credits previously earned including verification of graduation. A student who is transferring credit from other institutions must have a 2.5 GPA in all previous college work. The University accepts credits only from those institutions that are fully accredited by the appropriate regional accrediting association. This determination is made only at the time of formal application to the University.
- Current registered nurse license for those licensed in the United States
- Documentation of equivalent to a US RN license for international students plus a minimum score of 600 for the paper test and 250 for the computer based test required for the Test of English as a Foreign Language (TOEFL)
Criteria for Enrollment in Baccalaureate for the Registered Nurse (BRN) Courses:

The BRN major is concentrated at the junior and senior levels and requires 120 credits for graduation. Before enrollment in any nursing courses, students must meet the following criteria:

- Official admission to the BRN major
- Completion of all science credits required for the degree. The remaining non-nursing credits can be taken at any time in the program; however students are strongly encouraged to complete non-nursing requirements prior to enrollment in nursing courses.

Submission and approval of:

- Nursing Employment Verification Form
- The process must be completed before enrollment in the student’s first nursing course.
- Updated immunization record to Student Health and the School of Nursing
- Current RN license

Policies

In order to meet degree requirements, nursing majors must have a minimum cumulative GPA of 2.0 to progress in the nursing sequence. A student who earns a grade lower than C- in a nursing course must repeat the course and achieve a grade of at least C- before enrolling in a more advanced nursing course.

Students are not permitted to repeat any nursing course more than once. Students who earn a grade lower than C- in more than one nursing course will not be permitted to continue in the program. Students should have regular contact with their advisor to ensure that all requirements are being met.

Students are required to meet all immunization, safety, criminal background checks, drug screenings, and CPR requirements prior to clinical coursework and direct patient care. Additional requirements for clinical education may be required by the healthcare agency to which a student is assigned. A minimum of 84 hours of clinical time is required to complete NURS 443. Students are expected to provide their own transportation to all required clinical experiences.

Academic Progression

The program is designed to facilitate timely progression for nurses who are continuing their education while employed full or part-time. There is no time limit for completion of prerequisite courses; however upon enrollment in the first nursing course, the program must be completed within a five-year period. It is possible to complete the required nursing courses in a 12-month period.

UNIVERSITY REQUIREMENTS

ENGL 110 Critical Reading and Writing 3
FYE 0-4
Breadth Requirements 12
Discovery Learning Experience (DLE) 3
Multi-cultural Courses 3

MAJOR REQUIREMENTS

24 credits, to include a minimum of one course in each of the following five categories: 24
(1) biology, (2) microbiology, (3) chemistry, (4) anatomy and physiology, and (5) nutrition.

STAT 200 Basic Statistical Practice 3
English course (second English composition course) 3
Psychology course 3
Sociology course 3
Lifespan development course 3
Restricted elective chosen from the following 3
Art, Art History, History, Philosophy, Music, Theatre, Comparative Literature, Black American Studies, Economics, Political Science, Women’s Studies, Foreign Languages and Literatures, Linguistics, and English.

NURS 312 Pathophysiology 4
NURS 335 BRN Orientation 1
NURS 345 Conceptual Foundations for Nursing Practice 3
NURS 350 Wellness/Health Assessment 3
NURS 362 Research Concepts in Health Care 3
NURS 411/NURS 412 Topics in Health Care Delivery 6
NURS 435 Leadership and Management in Health Organizations 3
NURS 442 Community Health Nursing 3
NURS 443 BRN Role Practicum 3
NURS 450 BRN Capstone 1

84 hours of clinical time is required.

ELECTIVES 15

After required courses are completed, sufficient elective credits must be taken to meet the minimum credits required for the degree.

CREDITS TO TOTAL A MINIMUM OF 120
The College of Earth, Ocean, and Environment (CEOE) is dedicated to advancing the understanding of Earth's natural systems and the interactions of humans with the environment through engaged interdisciplinary research, teaching, and outreach. The college’s goal is to produce well-rounded scientists, researchers and policy specialists who have the broad vision and interdisciplinary background necessary to address the sweeping, interrelated issues that are part of the study of ocean, earth and environmental systems.

With a deep commitment to excellence in academics, research and public outreach, CEOE plays a leading role in educating future marine, earth and environmental scientists, educators and policy specialists. Our interdisciplinary emphasis and commitment to the highest scientific ideals prepares students for rewarding careers in teaching, research, and public service. The classrooms and labs at both the Newark and Lewes campuses are active and engaging learning environments where students work closely with the premiere faculty of the college.

Earth, ocean, and environmental scientists view the world on many temporal and spatial levels. From the microscopic realm of bacteria and plankton, to the changes caused by land-surface processes and the everyday domain of the coastal ocean to the panoramic perspective of satellites in space, our scientists and students look at the world through many lenses. We also study the human interactions with the planet and her systems to better understand our interconnectedness with our world. From the cultural and economic landscapes of countries that span the globe, to our own backyards and impacts in our local communities, Human Geographers and Marine Policy specialists strive to better understand how we impact and are impacted by the world in which we live. Here at CEOE, we strive to bring our picture of the Earth, her ocean and environment into ever-sharper focus and to educate well-rounded scientists and policy specialists with the broad vision needed to address today’s global problems. Our graduates are interested in all interaction with the planet — from legal, economic, and political aspects of conflict resolution, to understanding and applying natural science principles for the mutual benefit of humankind and the environment. CEOE alumni hold rewarding careers around the globe, as professors, school teachers, research scientists, ocean engineers, development geologists, resource managers, geoarcheologists, business owners, environmental statisticians, doctors, lawyers, journalists, and diplomats.

Concerns such as climate change, globalization and migration, marine pollution, watershed degradation, energy independence and fisheries decline are at the heart of our work at CEOE. Meeting these challenges often demands expertise in several disciplines, and our curriculum reflects this reality.

Undergraduate students interested in the environment, the Earth, and the ocean are connected to CEOE in a number of ways:
a) As majors in Earth Science Education, Environmental Studies, Environmental Science, Geography Education, Geography, Geology, or Marine Science b) As students getting a minor in Coastal and Marine Geoscience, Geography, Geology, or Marine Studies; and c) Participating in research opportunities with CEOE faculty through individual research projects with the faculty, through our Semester In Residence Program, and through the University of Delaware's Undergraduate Research Program as well as other research opportunities.

For detailed information about the college’s research and facilities, please visit the CEOE website. Specific information specific to the departments and schools can be found at their websites: Department of Geological Sciences, Department of Geography; School of Marine Science and Policy. Information regarding specific faculty members and their research interests can be found at the CEOE Faculty listing.

Degree Program Offerings

The College of Earth, Ocean, and Environment is one of seven colleges at the University of Delaware. CEOE is also the home of the Delaware Sea Grant College Program. We have a deep commitment to excellence in academics, research and public outreach. CEOE is playing a leading role in educating future earth, ocean, and environmental scientists, educators, and policy specialists. The classrooms and labs at both the Newark and Lewes campuses are active and engaging learning environments where students work closely with our premiere faculty.

There are many degree program offerings and research opportunities for students. Undergraduate students in CEOE can major in Earth Science Education, Environmental
An Outstanding Opportunity
Students participating in the Semester-in-Residence (SIR) program live, work, and study at the Lewes campus for the fall semester. The program gives undergraduate students the opportunity to explore marine studies through classes and research.

Offerings include classes in marine biosciences, chemical oceanography, physical oceanography, and statistics. In addition to classes with other SIR students, you will have an individual research project offered under the guidance of a faculty mentor in a focused environment.

Many SIR students have gone on to graduate school armed with strong research experience and personalized, extensive, and specific recommendation letters from the faculty who mentored them during the semester. They have found that these experiences and relationships serve them well as they move ahead in their careers.

Tuition and Housing
Students pay normal University of Delaware tuition based on credit hours taken.

SIR students are housed at the Franklin C. Daiber Residence Complex in Lewes. The Daiber Complex is a University of Delaware facility and is named for Daiber, who was a well-known and respected CEOE professor, researcher, and mentor. There is a housing fee that is separate from tuition.

Application and Enrollment
Enrollment in the SIR program is available on a limited and competitive basis to individuals each fall semester.

SIR is open to any student attending an accredited four-year undergraduate program. In addition to contacting the SIR program administrators, non-University of Delaware students should contact UD's Office of Professional and Continuing Studies at 302-855-1630. Students should also check with their home institution to verify that it will accept UD credits.
Don’t Delay...Apply Today!
The annual application deadline is March 1

Requirements for consideration:
- Junior or senior status
- Minimum GPA of 3.0 (4.0=A)
- Interest in marine studies
- Letter of support from your advisor or another faculty member

To apply send
- Letter of interest
- Resume
- Letter of support
- Official transcript of all college work

To:
Semester-in-Residence Program
School of Marine Science and Policy
College of Earth, Ocean, and Environment
700 Pilottown Road
Lewes, DE 19958-1298

For more information: Phone: 302-831-2841

NSF Marine Sciences Summer Internship

What is it?
Supported by a grant from the National Science Foundation’s Division of Ocean Sciences, this REU (Research Experience for Undergraduates) program awards ten science, engineering, and mathematics undergraduates summer internships to conduct guided research in marine science.

Who can participate?
Students between their junior and senior years will receive preference. Interns will work with faculty and research staff in a graduate student atmosphere on a research topic in chemical, physical, or biological oceanography, marine biology, marine geology, or marine biochemistry. Interns will work semi-independently on a project designed by the intern and assigned faculty advisor in Marine Biology, Oceanography or Physical Ocean Science & Engineering. Interns present written and oral reports at the end of the summer. The program runs for 10 weeks (early June - mid August). Interns will be expected to attend weekly seminars presented by faculty and research staff.

Where does the Program take place?
The marine science internship program is housed at the University of Delaware College of Earth, Ocean, and Environment’s Hugh R. Sharp Campus in the resort community of Lewes, Delaware.

This modern campus is located on the shores of Delaware Bay and the Atlantic Ocean near Cape Henlopen State Park. Research and teaching facilities are available in Lewes, which is linked by computer and interactive TV to the main campus in Newark.

Interns can stay at the Daiber Housing Complex, which is comprised of 28 three-bedroom and 2 two-bedroom, semi-detached ranch houses. All units include a range, refrigerator, washer, and dryer. The complex is less than 2 miles from the Hugh R. Sharp Campus and within walking distance of downtown Lewes.

Student support includes a minimum $5,000 stipend, dormitory fee, and travel assistance for the 10-week session. The Marine Sciences Summer Intern Program is supported by a grant from the National Science Foundation’s Division of Ocean Sciences.

How to Apply
Applicants must be citizens or permanent residents of the United States and its possessions and must be enrolled in a degree program leading to a bachelor’s degree. Students who will have received their degree prior to August 2012 are not eligible. Applicants are encouraged to electronically submit their application and a letter describing their general background and interests in pursuing the research experience. The application form, timeline information and additional instructions are available here. If you do not have Internet access, please contact us by mail or email at the address below for an application. Applications from women and members of minority groups are especially encouraged.

The general deadline for submission is in February each year. Specific deadlines can be found on the CEOE Summer REU website.

For information, contact:
Dr. Ana I. Dittel Email
University of Delaware
School of Marine Science and Policy
700 Pilottown Road
Lewes, DE 19958-1298

Marine Policy Internship

Undergraduate students from various disciplines may serve as interns in the Gerard J. Mangone Center for Marine Policy at CEOE and work on a range of research and policy analysis activities with graduate students, faculty, and national and international agencies. The center: conducts
an active regional, national and international research program; provides policy advice to governmental and nongovernmental agencies; and organizes conferences, publications, international exchanges, and a visitors program. Major emphases include implementation of the World Summit on Sustainable Development agreements related to the oceans and coasts, the theory and practice of integrated coastal management, the management of coastal ecosystem health, and marine biotechnology.

For more information, contact:

Dr. Biliana Cicin-Sain, Director E-Mail
Gerard J. Mangone Center for Marine Policy
College of Earth, Ocean & Environment
301 Robinson Hall
Newark, DE 19716

Physical Ocean Science and Engineering (POSE) Internship

Undergraduate students with a background in physics, mathematics and engineering can undertake advanced study of contemporary research topics in arctic physical oceanography, coastal engineering, underwater acoustics, air-sea interaction, and global climate change.

The POSE internship program is designed to provide undergraduates with hands on experience in physical ocean research. Students work one-on-one with a professor and have access to the latest research facilities including the college's 146-foot research vessel, R/V Hugh R. Sharp, and a number of state-of-the-art laboratory facilities located on both on the Newark and at the Hugh R. Sharp campus in Lewes.

The program typically runs for 2 months during June and July and includes a monthly stipend and housing assistance.

For more information, contact:

Dr. Mohsen Badiey, Director E-Mail
Physical Ocean Science and Engineering Program
School of Marine Science and Policy
107 Robinson Hall
Newark, DE 19716

School of Marine Science and Policy (SMSP)

About the School
The School of Marine Science and Policy (SMSP) is an academic unit of the College of Earth, Ocean, and Environment (CEOE). The broad mission of the School is to advance knowledge and education critical to the understanding, stewardship, and conservation of estuarine, coastal, and ocean environments. The School has an internationally recognized faculty and offers exciting educational and research opportunities for undergraduate and graduate students interested in all areas of marine science and policy.

Facilities are located on the Sharp Campus at the mouth of Delaware Bay in Lewes Delaware and in Robinson Hall and Lammot du Pont Laboratory building on the main campus in Newark. The School's facilities are the home to over a dozen research centers, covering a broad range of topics from Environmental Genomics to Carbon-Free Power Integration.

The Sharp Campus is home port for the 146-foot R/V Hugh R. Sharp, the most advanced coastal research vessel in the United States. The 64-acre Sharp Campus also features 70,000 square feet of modern laboratory, classroom, and office space in Cannon and Smith Laboratories. The School also provides housing for up to 90 graduate and undergraduate students in residence at Sharp Campus.

Our academic program offerings for undergraduates

SMSP is ranked among the top institutions for marine education and research in the United States. We offer graduate level programs (Master’s and Doctoral Programs) in Marine Biosciences, Marine Policy, Oceanography, and Physical Ocean Science and Engineering. Additionally, we offer degree and research opportunities for undergraduate students interested in pursuing academic work in the field of marine science.

Undergraduates can choose to pursue a Bachelor of Science in Marine Science with a concentration in Marine Biology or the Honors Bachelor of Science in Marine Science with a concentration in Marine Biology. These degree programs emphasize a broad scientific understanding of the character, function, and analysis of ocean systems, and the habitats and biota that live there. Marine Biology students benefit from a broad-based program that is rigorous in both math and science. The degree is designed to assist students in understanding the connectedness of science and society; giving students a strong understanding of the scientific concepts of marine biology while challenging them to use analytical skills and tools to
explore issues and to integrate and synthesize information and communicate scientific issues and concepts clearly in oral and written format throughout their coursework.

SMSP also offers a minor in Marine Studies, a concentration within the Environmental Science degree program, as well as a multitude of courses appropriate for students in various disciplines.

for more information:
Telephone: (302) 645-4346
SMSP webpage

Bachelor of Science in Marine Science (concentration in Marine Biology)

Students must complete the university-level, college-level and breadth requirements for College of Earth, Ocean, and Environment Bachelor of Science degrees.

UNIVERSITY REQUIREMENTS:
ENGL 110 Critical Reading and Writing (minimum grade C-) 3
First Year Experience (FYE) 0-4
Breadth Requirements *fulfilled by college breadth requirements below 12
Discovery Learning Experience (DLE) 3
Multicultural Courses 3

COLLEGE REQUIREMENTS:
Second Writing Requirement (minimum grade of C-) 3
A second writing course involving significant writing experience including two papers with a combined minimum of 3,000 words to be submitted for extended faculty critique of both composition and content. This course must be taken after completion of 60 credit hours. Appropriate writing courses are designated on the registrar’s course search page.

Foreign Language (minimum grade of D-) 0-12
Completion of the intermediate-level course (107 or 112 or 214) in a given language. Number of credits needed and initial placement will depend on number of years of high school study of foreign language. Students with four or more years of high school work in a single foreign language may attempt to fulfill the requirement in that language by taking an exemption examination.

COLLEGE BREADTH REQUIREMENTS:
These requirements apply to all College of Earth, Ocean & Environment Bachelor of Science degrees. College breadth courses when combined with University breadth courses must represent at least two departments or appropriate instructional units in each category.

If the grade earned is sufficient, a course may be applied toward more than one requirement (e.g., breadth and major requirements), but the credits are counted only once toward the total credits for graduation. If all but one course in a group has been taken in one department or program, a course cross-listed with that program will not satisfy the distribution requirement.

*note: 3 credits in each category below can be used to fulfill the University Breadth requirement

Group A: Creative Arts and Humanities 6
Understanding and appreciation of the visual and performing arts, of aesthetic forms, designs, or craftsmanship, or of literary, philosophical, and intellectual traditions. Courses may focus on a single aesthetic form or intellectual tradition, or cross-cultural comparisons.

Group B: History and Cultural Change 6
Understanding of the sources and forces of historical changes in ideas, beliefs, institutions, and cultures. Courses may address social, cultural, intellectual, economic, technological, artistic, scientific, and political development, changes in a discipline, or globalization and its effects.

Group C: Social and Behavioral Sciences 6
Understanding of the behavior of individuals and social groups in the context of their human and natural environments. Courses emphasize the empirical findings, applications, and methods of the social and behavioral sciences.

MAJOR REQUIREMENTS:

Marine Science Core Requirements:
MAST100 Marine Science Colloquia I 2
MAST101 Marine Science Colloquia II 1
MAST 201 Marine Science Colloquia III 1
MAST 301 Marine Science Colloquia IV 1
ENGL410 Technical Writing 3
MAST 482 Introduction to Ocean Sciences 3
MAST 492 Marine Environmental Case Studies 3

Two additional courses in Marine Science at the 400-level or higher* 6
*Courses must be from outside area of concentration
Marine Science Discovery Learning

Research/Field Experience**: 3-6

**An approved marine science research or field experience that satisfies the University Discovery Learning Experience (DLE) requirement. This requirement could be fulfilled by an approved internship, study abroad, and/or an undergraduate research experience. In order to be approved, Experience MUST include data collection, data analysis and data reports/field notes.

Supporting Mathematics and Sciences

Requirements:
- BISC 207 Introductory Biology I 4
- CHEM 103 General Chemistry 4
- CHEM 104 General Chemistry 4
- MATH 241 Analytic Geometry and Calculus A 4
- MATH 242 Analytic Geometry and Calculus B 4
- PHYS 201 Introductory Physics I 4

Concentration in Marine Biology Requirements:
- BISC 208 Introductory Biology II 4
- CHEM 321 Organic Chemistry 4
- CHEM 322 Organic Chemistry 4
- MAST/ENWC 341 Comparative Terrestrial and Marine Ecology 3
- MAST 427 Marine Biology 3
- MAST 451 Marine Invertebrate Diversity 3

Three of the following***:
- MAST 421 Coastal Field Biology 3
- MAST 618 Marine Microbial Ecology 3
- MAST 623 Physiology of Marine Organisms 3
- MAST 625 Microbial Physiology and Diversity 3
- MAST 630 Topics: Marine Ecology-Ichthyology 3

***other courses may be substituted after consultation with appropriate program administrator or faculty director.

Electives

After required courses are completed sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF 124

Honors Bachelor of Science in Marine Science (concentration in Marine Biology)

The recipient must complete:

All requirements for the Bachelor of Science in Marine Science (Marine Biology concentration).
Undergraduate students with advanced interests may also enroll in entry-level graduate courses in marine studies with the instructor’s permission. While some classes are taught at the CEOE research complex in Lewes, 90 miles south of the main campus, interactive television (ITV) classrooms link the two campuses and allow students to attend class in Newark without commuting to Lewes.

For other Marine Studies courses being offered, click here and type in “MAST” in the course number box.

Geography
Telephone: (302) 831-2294
http://www.udel.edu/Geography
Faculty Listing: http://www.udel.edu/Geography/faculty.html

The Department of Geography offers BA programs in Geography and Geography Education, as well as a minor in Geography. The Department is the administrative home to the distributed BS in Environmental Science and BA in Environmental Studies degree programs. In addition, the faculty participates in other interdepartmental opportunities.

Geographers investigate processes that explain the location of human and natural phenomena, as well as the interactions between people and their environment. A broad range of interests characterizes geography and reflects its position simultaneously in the natural sciences, social sciences, and humanities.

Students who major in geography may, if they choose, specialize. The department has an excellent program in climatology, for instance, and research may be undertaken through its Center for Climatic Research. Other areas include biogeography, conservation, cultural-historical geography, urban geography, and geomorphology. Skills in geographic information science (GIS), remote sensing, cartography, and spatial data analysis are also studied by geography majors. Students are required to take an introductory sequence of courses and a capstone course to provide a common background for all majors. During the senior year, majors may, at their option, undertake a research paper under the direction of their program advisors.

Interdepartmental Majors

An interdepartmental major, for students having interests in two areas, requires 21 credits each in
Bachelor of Arts: Geography

geography and in one other department in the college, plus 9 more elective credits approved by both departments. Of the minimum of 21 credits in geography, a student must take 9 credits from the foundation level, of which one course must be from the Physical Geography area, one course from the Human Geography area, and one course from the Methods area. Nine more geography credits must be taken at the 300/400-level. The remaining three geography credits may be chosen from any 200-, 300-, or 400-level course.

Bachelor of Arts: Geography

Students must complete the university-level, college-level and breadth requirements for Bachelor of Arts Degrees in the College of Earth, Ocean, & Environment.

UNIVERSITY REQUIREMENTS

ENGL 110 Critical Reading and Writing (minimum grade C-) 3
First Year Experience (FYE) 0-4
Breadth Requirements *fulfilled by college breadth requirements below 12
Discovery Learning Experience (DLE) 3
Multi-cultural Courses 3

College Requirements:
Second Writing Requirement:
(minimum grade C-) 3
A second writing course involving significant writing experience including two papers with a combined minimum of 3,000 words to be submitted for extended faculty critique of both composition and content. This course must be taken after completion of 60 credit hours. Appropriate writing courses are designated on the registrar’s course search page.

Mathematics:(one of the following four options with a minimum grade of D-) 0-4
OPTION ONE:
MATH 113 Contemporary Mathematics (designed for students who do not intend to continue the study of mathematics)
or
MATH 127 Mathematics and Quantitative Reasoning

OPTION TWO:
MATH 114 College Mathematics and Statistics (designed for students who do not intend to continue the study of mathematics)
or
MATH 115 Pre-Calculus (designed for students who intend to continue the or study of mathematics)
or
MATH 117 Pre-Calculus for Scientists and Engineers

OPTION THREE:
Successful completion of any mathematics course at or above the 200-level except MATH 201, MATH 202, MATH 205, MATH 250, MATH 251, MATH 252, MATH 253, MATH 266, MATH 300 or MATH 450.

OPTION FOUR:
Successful performance on a proficiency test in mathematics administered by the Department of Mathematical Sciences. (0 credits awarded)

The math requirement must be completed by the time a student has earned 60 credits. Students who transfer into the College of Earth, Ocean, and Environment with 45 credits or more must complete this requirement within two semesters.

Foreign Language: (with a minimum grade of D-) 0-12
Completion of the intermediate-level course (107 or 112 or 214) in an ancient or modern language. The number of credits needed and initial placement will depend on the number of years of high school study of foreign language. Students with four or more years of high school work in a single foreign language, or who have gained proficiency in a foreign language by other means, may attempt to fulfill the requirement in that language by taking an exemption examination through the Foreign Languages and Literatures Department.

COLLEGE BREADTH REQUIREMENTS

These requirements apply to all College of Earth, Ocean & Environment Bachelor of Arts degrees. College breadth courses when combined with University breadth courses must represent at least two departments or appropriate instructional units in each category.

If the grade earned is sufficient, a course may be applied toward more than one requirement (e.g., breadth and major requirements), but the credits are counted only once toward the total credits for graduation. If all but one course in a group has been taken in one department or program, a course cross-listed with that program will not satisfy the distribution requirement.

*note: 3 credits in each category below can be used to fulfill the University Breadth requirement

Group A: Creative Arts and Humanities 9
Understanding and appreciation of the visual and performing arts, of aesthetic forms, designs,
Bachelor of Arts: Geography Education

or craftsmanship, or of literary, philosophical, and intellectual traditions. Courses may focus on a single aesthetic form or intellectual tradition, or cross-cultural comparisons.

Group B: History and Cultural Change 9
Understanding of the sources and forces of historical changes in ideas, beliefs, institutions, and cultures. Courses may address social, cultural, intellectual, economic, technological, artistic, scientific, and political development, changes in a discipline, or globalization and its effects.

Group C: Social and Behavioral Sciences 9
Understanding of the behavior of individuals and social groups in the context of their human and natural environments. Courses emphasize the empirical findings, applications, and methods of the social and behavioral sciences.

Group D: Mathematics, Natural Sciences and Technology 10
Understanding of fundamental and/or applied concepts and phenomena from mathematics, logic, natural or physical sciences, and technology including quantitative reasoning and methods used to approach and solve problems.

Courses taken to fulfill this category (university and college breadth) must include a minimum of one course with an associated laboratory

MAJOR REQUIREMENTS
Two physical geography courses: 7
GEOG 101/GEOG 111
Physical Geography: Climatic Processes, with lab
or
GEOG 152 Climate and Life

GEOG 106
Physical Geography: Land Surface Processes

Two of the following human geography courses: 6
GEOG 102 Human Geography
GEOG 120 World Regional Geography
GEOG 203 Cultural Geography
GEOG 210 Economic Geography

Two methods courses: 7
GEOG 271 Introduction to Geographic Data Analysis
GEOG 372 Geographic Information Systems

Six credits selected from geography courses at or above the 300-level 6
Six credits selected from geography courses at or above the 200-level 6
GEOG 445 Method and Theory in Geography 3

ELECTIVES
After required courses are completed sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF 124

Bachelor of Arts: Geography Education

Students must complete the university-level, college-level and breadth requirements for Bachelor of Arts Degrees in the College of Earth, Ocean & Environment.

UNIVERSITY REQUIREMENTS
ENGL 110 Critical Reading and Writing (minimum grade C-) 3
First-Year Experience (FYE) 0-4
Breadth Requirements fulfilled by college breadth requirements below 12
Discovery Learning Experience (DLE) 3
Multi-cultural Courses 3
Second Writing Requirement: (minimum grade C-) 3

A second writing course involving significant writing experience including two papers with a combined minimum of 3,000 words to be submitted for extended faculty critique of both composition and content. This course must be taken after completion of 60 credit hours. Appropriate writing courses are designated on the registrar’s course search page.

Mathematics: (one of the following four options with a minimum grade of D-) 0-4

OPTION ONE:
MATH 113 Contemporary Mathematics (designed for students who do not intend to continue the study of mathematics)

or

MATH 127 Mathematics and Quantitative Reasoning

OPTION TWO:
MATH 114 College Mathematics and Statistics (designed for students who do not intend to continue the study of mathematics)

or

MATH 115 Pre-Calculus (designed for students who intend to continue the study of mathematics)
or craftsmanship, or of literary, philosophical, and intellectual traditions. Courses may focus on a single aesthetic form or intellectual tradition, or cross-cultural comparisons.

Group B: History and Cultural Change 9
Understanding of the sources and forces of historical changes in ideas, beliefs, institutions, and cultures. Courses may address social, cultural, intellectual, economic, technological, artistic, scientific, and political development, changes in a discipline, or globalization and its effects.

Group C: Social and Behavioral Sciences 9
Understanding of the behavior of individuals and social groups in the context of their human and natural environments. Courses emphasize the empirical findings, applications, and methods of the social and behavioral sciences.

Group D: Mathematics, Natural Sciences and Technology 10
Understanding of fundamental and/or applied concepts and phenomena from mathematics, logic, natural or physical sciences, and technology including quantitative reasoning and methods used to approach and solve problems.

Courses taken to fulfill this category (university and college breadth) must include a minimum of one course with an associated laboratory

MAJOR REQUIREMENTS
Two physical geography courses: 7
GEOG 101/GEOG 111
Physical Geography: Climatic Processes, with lab
or
GEOG 152 Climate and Life
GEOG 106 Physical Geography: Land Surface Processes

Two of the following human geography courses: 6
GEOG 102 Human Geography
GEOG 120 World Regional Geography
GEOG 203 Cultural Geography
GEOG 210 Economic Geography

Two methods courses: 7
GEOG 271 Introduction to Geographic Data Analysis
GEOG 372 Geographic Information Systems

Six credits selected from geography courses at or above the 300-level 6
Six credits selected from geography courses at or above the 200-level 6

GEOG 445 Method and Theory in Geography 3
ECON 151 Introduction to Microeconomics 3
ECON 152 Introduction to Macroeconomics 3
POSC 150 The American Political System 3
HIST 104 World History II 3
HIST 206 United States History since 1865 3

Additional credits as follows: 12
3 credits in ECON, 6 credits in POSC, 3 credits in HIST

EDUC 413 Adolescent Development and Educational Psychology 4
EDUC 414 Teaching Exceptional Adolescents 3
EDUC 419 Diversity in Secondary Education 3
HIST 491 Planning a Course of Instruction 3
HIST 493 Seminar: Problems in Teaching History and Social Sciences 3
EDUC 420 Reading in the Content Areas 1
EDUC 400 Student Teaching 9

Grade of C- or better required in all required major, major related, and professional studies courses.

To be eligible to student teach, Geography Education students must have a GPA of 3.0 in their major and an overall GPA of 2.75. They must also pass a teacher competency test as established by the University Council on Teacher Education. Students must consult with the teacher education program coordinator to obtain the student teaching application and other information concerning student teaching policies.

CREDITS TO TOTAL A MINIMUM OF 124

Honors Bachelor of Arts: Geography or Geography Education
The recipient must complete:
All requirements for the Bachelor of Arts Degree in Geography or Geography Education
All of the University's generic requirements for the Honors Degree

Minor in Geography
A minimum of 18 credits of course work in geography must be completed for a minor.
Nine (9) credits shall be at the foundation level as follows:
One (1) Physical Geography course: either GEOG 101, GEOG 106, GEOG 152, or GEOG 220
One (1) Human Geography course: either GEOG 102, GEOG 120, GEOG 203, or GEOG 210
One (1) Geographic Methods course: either GEOG 271, or GEOG 372
Nine (9) additional geography credits at or above the 300 level.

Environmental Science and Environmental Studies

The University of Delaware currently offers many environmentally-related degrees in a number of colleges including the College of Agriculture and Natural Resources, the College of Arts and Sciences, the College of Engineering, the College of Education and Public Policy, and the College of Earth, Ocean, and Environment. Housed in the Department of Geography, the interdisciplinary Bachelor of Arts in Environmental Studies and Bachelor of Science in Environmental Sciences are a collaborative effort involving several departments and colleges.

The Bachelor of Arts in Environmental Studies assists students in gaining a deeper understanding of and appreciation for the environment and environmental systems, the impact of humans on the environment and environmental impacts on humans, the importance of environmental understanding when making economic, political and other policy choices.

The goal is to give students in the program a broad-based, interdisciplinary introduction to environmental policies and issues; the common analytical tools needed to explore them in depth through their specific concentration areas; and the ability to integrate and synthesize information from a multidisciplinary perspective in oral and written format through a capstone course.

The BA in Environmental Studies program's foundation courses are in the social sciences, humanities, and natural sciences with a focus in understanding the environmental field. This, along with their specific concentration area, allows students in connecting science and society and balancing the needs of humans and other inhabitants with the needs to conserve the earth's precious resources while developing strategies, policies and approaches to solve environmental issues and reduce environmental impact.

EDUC 413 Adolescent Development and Educational Psychology 4
EDUC 414 Teaching Exceptional Adolescents 3
EDUC 419 Diversity in Secondary Education 3
HIST 491 Planning a Course of Instruction 3
HIST 493 Seminar: Problems in Teaching History and Social Sciences 3
EDUC 420 Reading in the Content Areas 1
EDUC 400 Student Teaching 9

Grade of C- or better required in all required major, major related, and professional studies courses.

To be eligible to student teach, Geography Education students must have a GPA of 3.0 in their major and an overall GPA of 2.75. They must also pass a teacher competency test as established by the University Council on Teacher Education. Students must consult with the teacher education program coordinator to obtain the student teaching application and other information concerning student teaching policies.

CREDITS TO TOTAL A MINIMUM OF 124

Honors Bachelor of Arts: Geography or Geography Education
The recipient must complete:
All requirements for the Bachelor of Arts Degree in Geography or Geography Education
All of the University's generic requirements for the Honors Degree

Minor in Geography
A minimum of 18 credits of course work in geography must be completed for a minor.
Nine (9) credits shall be at the foundation level as follows:
One (1) Physical Geography course: either GEOG 101, GEOG 106, GEOG 152, or GEOG 220
One (1) Human Geography course: either GEOG 102, GEOG 120, GEOG 203, or GEOG 210
One (1) Geographic Methods course: either GEOG 271, or GEOG 372
Nine (9) additional geography credits at or above the 300 level.

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The University of Delaware currently offers many environmentally-related degrees in a number of colleges including the College of Agriculture and Natural Resources, the College of Arts and Sciences, the College of Engineering, the College of Education and Public Policy, and the College of Earth, Ocean, and Environment. Housed in the Department of Geography, the interdisciplinary Bachelor of Arts in Environmental Studies and Bachelor of Science in Environmental Sciences are a collaborative effort involving several departments and colleges.

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The goal is to give students in the program a broad-based, interdisciplinary introduction to environmental policies and issues; the common analytical tools needed to explore them in depth through their specific concentration areas; and the ability to integrate and synthesize information from a multidisciplinary perspective in oral and written format through a capstone course.

The BA in Environmental Studies program's foundation courses are in the social sciences, humanities, and natural sciences with a focus in understanding the environmental field. This, along with their specific concentration area, allows students in connecting science and society and balancing the needs of humans and other inhabitants with the needs to conserve the earth's precious resources while developing strategies, policies and approaches to solve environmental issues and reduce environmental impact.
The Bachelor of Science in Environmental Science emphasizes a broad scientific understanding of the character, function, and analysis of environmental systems. Environmental Science BS students will be able to contribute to society's understanding of and solutions to problems that arise from human occupancy and use of the planet and environment.

The goal is to give students in the program a broad-based, interdisciplinary introduction to the scientific concepts, policies, and issues; the common analytical tools needed to explore environmental issues in depth through their specific concentration areas; and the ability to integrate and synthesize information from a multidisciplinary perspective in oral and written format through the capstone course.

The BS in Environmental Science program is rigorous in both math and science and includes courses in social science and policy that will help the environmental science major understand the societal context of his/her work. This foundation along with their specific concentration area helps students appreciate the interconnectedness between understanding natural science processes and their applications and the social, political, and institutional frameworks in which environmental issues are considered.

Both degrees are “distributed” degree programs and students can either:
1. Enter the program as a major with a concentration already declared, OR
2. Enter the program as a major and select a specific concentration after taking some of the initial courses required for the major. Students MUST ultimately select a concentration, preferably by the end of the fall semester of their junior year.

There are 4 concentrations in Environmental Studies: International Environmental Politics and Policy; Environmental Law, Policy and Politics; Environmental Economics and Resource Policy; and Environment, Society and Sustainability.

There are 10 concentrations in Environmental Science: Atmospheric Science; Ecology and Organismal Biology; Environmental Chemistry; Environmental Soil Science; Geoscience; Hydrology; Marine Science; Pollution Control; Sustainable Energy Technology; and Water Quality and Resources.

Students are assigned an advisor from their area of concentration. In those cases where the student has not yet selected a concentration, students are assigned an academic advisor from one of the concentrations.

Upon completion of degree requirements, students will receive either a Bachelor of Science in Environmental Science with a specific concentration or a Bachelor of Arts in Environmental Studies with a specific concentration. In some cases, the concentration also fulfills the requirements for a minor in a topical area.

Bachelor of Arts in Environmental Studies
Degree: Bachelor of Arts
Major: Environmental Studies

The BA in Environmental Studies (ENVR) assists students in gaining a deeper understanding of and appreciation for the environment and environmental systems, the impact of humans on the environment and environmental impacts on humans, the importance of environmental understanding when making economic, political and other policy choices.

The goal is to give students in the program a broad-based, interdisciplinary introduction to environmental policies and issues; the common analytical tools needed to explore them in depth through their specific concentration areas; and the ability to integrate and synthesize information from a multidisciplinary perspective in oral and written format through the capstone course.

The BA in Environmental Studies program’s foundation courses are in the social sciences, humanities, and natural sciences with a focus in understanding the environmental field. This, along with their specific concentration area, allows students in connecting science and society and balancing the needs of humans and other inhabitants with the needs to conserve the earth's precious resources while developing strategies, policies and approaches to solve environmental issues and reduce environmental impact.

There are 4 concentrations in Environmental Studies: International Environmental Politics and Policy; Environmental Law, Policy and Politics; Environmental Economics and Resource Policy; and Environment, Society and Sustainability.
General and University Requirements:
ENGL 110 Critical Reading and Writing (minimum grade C-) 3
First Year Experience (FYE) 0-4
Breadth Requirements *fulfilled by program breadth requirements below 12
Discovery Learning Experience (DLE) 3
Multi-cultural Courses 3

Program Requirements:
Second Writing Course (ENSC450 fulfills this requirement) 3
A second writing course involving significant writing experience including two papers with a combined minimum of 3,000 words to be submitted for extended faculty critique of both composition and content. This course must be taken after completion of 60 credit hours. Appropriate writing courses are designated on the registrar's course search page.

Foreign Language (minimum grade of D-) 0-12
Completion of the intermediate-level course (107 or 112 or 214) in an ancient or modern language. The number of credits needed and initial placement will depend on the number of years of high school study of foreign language. Students with four or more years of high school work in a single foreign language, or who have gained proficiency in a foreign language by other means, may attempt to fulfill the requirement in that language by taking an examination through the Foreign Languages and Literatures Department.

Mathematics requirement: (one of the following four options with a minimum grade of D-) 0-4
OPTION ONE:
MATH 113 Contemporary Mathematics (designed for students who do not intend to continue the study of mathematics)
MATH 127 Mathematics and Quantitative Reasoning

OPTION TWO:
MATH 114 College Mathematics and Statistics (designed for students who do not intend to continue the study of mathematics)
MATH 115 Pre-Calculus (designed for students who intend to continue the study of mathematics)
MATH 117 Pre-Calculus for Scientists and Engineers

OPTION THREE:
Successful completion of any mathematics course at or above the 200-level except MATH 201, MATH 202, MATH 205, MATH 250, MATH 251, MATH 252, MATH 253, MATH 266, MATH 300 or MATH 450.

OPTION FOUR:
Successful performance on a proficiency test in mathematics administered by the Department of Mathematical Sciences. (0 credits awarded)

The math requirement must be completed by the time a student has earned 60 credits. Students who transfer into the College of Earth, Ocean, and Environment with 45 credits or more must complete this requirement within two semesters.

Program Breadth Requirements:
These requirements apply to the Bachelor of Arts in Environmental Studies degrees (ALL concentration). Program breadth courses when combined with University breadth courses must represent at least two departments or appropriate instructional units in each category.

If the grade earned is sufficient, a course may be applied toward more than one requirement (e.g., breadth and major requirements), but the credits are counted only once toward the total credits for graduation. If all but one course in a group has been taken in one department or program, a course cross-listed with that program will not satisfy the distribution requirement.

*note: 3 credits in each category below can be used to fulfill the University Breadth requirement

Group A: Creative Arts and Humanities 9
Understanding and appreciation of the visual and performing arts, of aesthetic forms, designs, or craftsmanship, or of literary, philosophical, and intellectual traditions. Courses may focus on a single aesthetic form or intellectual tradition, or cross-cultural comparisons.

Group B: History and Cultural Change 9
Understanding of the sources and forces of historical changes in ideas, beliefs, institutions, and cultures. Courses may address social, cultural, intellectual, economic, technological, artistic, scientific, and political development, changes in a discipline, or globalization and its effects.

Group C: Social and Behavioral Sciences 9
Understanding of the behavior of individuals and social groups in the context of their human and
natural environments. Courses emphasize the empirical findings, applications, and methods of the social and behavioral sciences.

Group D: Mathematics, Natural Sciences and Technology 10
Understanding of fundamental and/or applied concepts and phenomena from mathematics, logic, natural or physical sciences, and technology including quantitative reasoning and methods used to approach and solve problems.

Courses taken to fulfill this category (university and program breadth) must include a minimum of one course with an associated laboratory

Program Core Requirements:
ENSC 101 Introduction to the Environment 3
BISC 104 Principles of Biology with Laboratory 4
CHEM 100 Chemistry and Human Environment 3
GEOL 105 Geological Hazards 3
GEOL 115 Geological Hazards Laboratory 1
FREC 100 Sustainable Development 3

ECON 151 Introduction to Microeconomics
OR
FREC 150 Economics of Agriculture & Natural Resources 3

ECON 343/FREC 343 Environmental Economics 3
GEOG 235 Conservation of Natural Resources 3
GEOG 236 Conservation: Global Issues 3
MAST 200 The Oceans 3
POSC 240 Introduction to International Relations 3
POSC 350 Politics and the Environment 3
PHIL 448 Environmental Ethics 3
STAT 200 Basic Statistical Practice 3

Field Experience: An approved 3-6 credit studies field experience in which the student integrates the components of his or her concentration in an experiential learning environment. This requirement could be fulfilled by an internship, study abroad experience and/or a research experience.

Studies Concentrations: 5-6 courses clustered in concentrations that are distributed throughout the colleges and across disciplines (see listings below).

Capstone Course: ENSC 450: Proseminar: The Environment

This 3 credit capstone course serves as a culminating experience and is to be completed during the last semester of the senior year. This course will engage students in an exploration and discussion of the history and state of environmental studies and its connection to local, regional, national and global scale environmental issues. Students will develop and refine critical thinking skills and interdisciplinary problem-solving strategies. It serves to be a culminating experience for students on the “science-side” and the “studies-side” to collaboratively solve problems and discuss issues in the current environmental literature.

Electives: After required courses are completed, sufficient credits must be taken to meet the total minimum credits required for the degree.

CREDITS TO TOTAL A MINIMUM OF 124

International Environmental Law, Policy, and Politics Concentration

Concentration in International Environmental Politics and Policy
The concentration in international environmental law, policy, and politics is designed for students who want to focus on the international dimensions of environmental issues. Students who pursue this concentration can expect to learn about the organization of the international system, its structure, operating principles, and formal and informal components; development of international law, legal processes and institutions including environmental treaties and international environmental disputes; the art and practice of diplomacy; the interaction between nations’ foreign and environmental policies; and the relationship between the international political economy and global and domestic environmental problems.

Topics courses may explore specific environmental issues such as population growth, the relationship between international immigration and environmental degradation, climate change, energy, and oceans policy as well as the similarities and differences in pollution regulations of various nations.

GEOG 422/GEOG 622 Resources, Development, And The Environment
OR
POSC 408 International Organization

Four of the following:
GEOG 329/POSC 329 International Migration
Concentration in Environmental Law, Policy, and Politics

The concentration in environmental law, policy and politics is designed for students primarily interested in American environmental policy and politics. Of course, given the global nature of many environmental issues, the international context of environmental politics in the United States is addressed.

The concentration allows students to explore the growth of the environmental movement in the United States; examine the interaction between philosophical, political, economic and psychological factors associated with individual environmental behaviors; analyze different institutional and policy approaches to solving environmental problems at the local, regional and national levels; and explore in some depth specific policy areas such as water quality, climate change, wildlife management, and population growth.

Student must select 5 courses from the following 2 groups:

Two or three of the following:
- FREC 450 Topics In Environmental Law
- GEOG 240 Environment and Behavior
- GEOG 449 Environment and Society
- HIST 367 American Environmental History
- MAST 692 Environmental Values, Movements And Policy
- POSC 380 Introduction To Law
- POSC 363 International Law And Organization
- SOCI 330 Population, Law And Society
- SOCI 470 Environmental Sociology
- POSC 626 Conservation and Renewable Energy Policy
- POSC 424 Energy Policy and Administration

AND

Two or three of the following:
- ENWC 413 Wildlife Policy and Administration
- FREC 424 Resource Economics
- FREC 420 Agriculture in Economic Development
- FREC 429 Community Economic Development
- FREC 480 Geographic Information Systems
- MAST 420/POSC 424 Energy Policy and Administration
- MAST 620/POSC 424 Energy Policy and Administration
- MAST 626/POSC 626 Conservation And Renewable Energy
Bachelor of Science in Environmental Science

The Bachelor of Science in Environmental Science emphasizes a broad scientific understanding of the character, function, and analysis of environmental systems. Environmental Science BS students will be able to contribute to society's understanding of and solutions to problems that arise from human occupancy and use of the planet and environment.

The goal is to give students in the program a broad-based, interdisciplinary introduction to the scientific concepts, policies, and issues; the common analytical tools needed to explore environmental issues in depth through their specific concentration areas; and the ability to integrate and synthesize information from a multidisciplinary perspective in oral and written format through the capstone course.

The BS in Environmental Science program is rigorous in both math and science and includes courses in social science and policy that will help the environmental science major understand the societal context of his/her work. This foundation along with their specific concentration area helps students appreciate the interconnectedness between understanding natural science processes and their applications and the social, political, and institutional frameworks in which environmental issues are considered.

There are 10 concentrations in Environmental Science: Atmospheric Science; Ecology and Organismal Biology; Environmental Chemistry; Environmental Soil Science; Geoscience; Hydrology; Marine Science; Pollution Control; Sustainable Energy Technology; and Water Quality and Resources.

General and University Requirements:
ENGL 110 Critical Reading and Writing (minimum grade C-) 3
First Year Experience (FYE) 0-4
Breadth Requirements*fulfilled by program breadth requirements below 12
Discovery Learning Experience (DLE) 3
Multi-cultural Course 3
Second Writing Course (ENSC450 fulfills this requirement) 3

A second writing course involving significant writing experience including two papers with a combined minimum of 3,000 words to be submitted for extended faculty critique of both composition and content. This course must be taken after completion of 60 credit hours.
Appropriate writing courses are designated on the registrar's course search page.

Foreign Language (with a minimum grade of D-) 0-12
Completion of the intermediate-level course (107 or 112 or 214) in an ancient or modern language. The number of credits needed and initial placement will depend on the number of years of high school study of foreign language. Students with four or more years of high school work in a single foreign language, or who have gained proficiency in a foreign language by other means, may attempt to fulfill the requirement in that language by taking an examination through the Foreign Languages and Literatures Department.

Program Breadth Requirements
These requirements apply to the Bachelor of Science in Environmental Science degree (all concentrations). These program breadth courses, when combined with University breadth courses must represent at least two departments or appropriate instructional units in each category.

If the grade earned is sufficient, a course may be applied toward more than one requirement (e.g., breadth and major requirements), but the credits are counted only once toward the total credits for graduation. If all but one course in a group has been taken in one department or program, a course cross-listed with that program will not satisfy the distribution requirement.

*note: 3 credits in each category below can be used to fulfill the University Breadth requirement

Group A Creative Arts and Humanities 6
Understanding and appreciation of the visual and performing arts, of aesthetic forms, designs, or craftsmanship, or of literary, philosophical, and intellectual traditions. Courses may focus on a single aesthetic form or intellectual tradition, or cross-cultural comparisons.

Group B History and Cultural Change 6
Understanding of the sources and forces of historical changes in ideas, beliefs, institutions, and cultures. Courses may address social, cultural, intellectual, economic, technological, artistic, scientific, and political development, changes in a discipline, or globalization and its effects.

Group C Social and Behavioral Sciences 6
Understanding of the behavior of individuals and social groups in the context of their human and natural environments. Courses emphasize the empirical findings, applications, and methods of the social and behavioral sciences.

Program Core Requirements:
ENSC 101 Introduction to the Environment 3
BISC 207 Introductory Biology I 4
BISC 208 Introductory Biology II 4
ENWC 201 Wildlife Conservation and Ecology 3
CHEM 103 General Chemistry I 4
CHEM 104 General Chemistry II 4
GEOL 107 General Geology 4
GEOG 220 Meteorology 3
GEOG 412 Physical Climatology 4
MAST 482 Introduction to Ocean Science 3
POSC 350 Politics and the Environment 3
FREC 100 Sustainable Development 3
MATH 241 Analytical Geometry and Calculus A 4
MATH 242 Analytical Geometry and Calculus B 4
GEOG 271 Introduction to Geographic Data Analysis 4
PHYS 201 Introductory Physics 4
OR
PHYS 207 Fundamentals of Physics* 4
*Dependent on concentration, see concentration details for specifics

Field Experience: An approved 3-6 credit science field experience in which the student integrates the components of his or her concentration in an experiential learning environment. Experience MUST include data collection, manipulation of data sets and weekly reports/field notes. This requirement could be fulfilled by an internship, study abroad experience and/or a research experience so long as the above criteria are met. The following courses can be used to fulfill the field experience: BISC312, ENSC425, ENWC408, ENWC415, GEOG451, GEOL306, MAST421/621, MAST464, MAST468

Science Concentrations: 5-6 courses clustered in concentrations that are distributed throughout the colleges and across disciplines (see listings below)

Capstone Course: ENSC 450: Proseminar: The Environment
This 3 credit capstone course serves as a culminating experience and is to be completed during the last semester of the senior year. This course will engage students in an exploration and discussion of the history and state of environmental studies and its connection to local, regional, national and global scale environmental issues. Students will develop and
refine critical thinking skills and interdisciplinary problem-solving strategies. It serves to be a culminating experience for students on the “science-side” and the “studies-side” to collaboratively solve problems and discuss issues in the current environmental literature.

Electives: After required courses are completed, sufficient credits must be taken to meet the total minimum credits required for the degree.

Total Credits for Degree: 124

Atmospheric Science Concentration
Concentration in Atmospheric Science
The Concentration in Atmospheric Science provides an opportunity for Environmental Science majors to study how energy and moisture are transferred among earth’s environmental spheres (e.g., biosphere-atmosphere, hydrosphere-atmosphere) and how humans impact our weather and climate. Emphasis is placed on the physical climatology of interactions among spheres, although courses within ecological climatology are also offered. Individual courses delve into the intricacies of atmospheric science above (e.g., GEOG 420, Atmospheric Dynamics) or within (e.g., Geog 451, Microclimatology) the boundary layer. Many aspects of atmospheric science are quantitative in nature, requiring knowledge of advanced calculus and/or statistics; thus MATH 243 is required, along with one additional course in differential equations, linear algebra, or statistics.

MATH 243 Analitical Geometry and Calculus C

One of the following:
MATH 302 Ordinary Differential Equations
MATH 349 Elementary Linear Algebra
MATH 450 Statistics for Engineering & Physical Sciences

ENC 475 Statistics for Environmental Science
STAT 657 Statistics for Earth Sciences

and

Three of the following:
GEOG 342 Bioclimatology
GEOG 420 Atmospheric Physics
GEOG 423 Atmospheric Dynamics
GEOG 451 Microclimatology
GEOG 453 Synoptic Climatology
GEOG 456 Hydroclimatology

Ecology and Organismal Biology Concentration
Concentration in Ecology and Organismal Biology
This concentration focuses on studying the interaction of organisms with their physical and biological environment. Students interested in studying this interaction with an emphasis on the physical environment would best fit this concentration. This major/concentration is distinct from the Wildlife Conservation major, which focuses on the application of ecological principles for conservation and management of ecosystems and wildlife species. Graduates from the concentration in Ecology and Organismal Biology should be prepared to gain employment as environmental scientists or seek graduate education in Environmental Science.

BISC 302 General Ecology
BISC 495 Evolution
ENWC 205 Elements of Entomology
ENWC 325 Wildlife Management

and two of the following:
BISC 317 Tropical Ecology
BISC 321 Environmental Biology
ENWC 418 Ornithology
ENWC 419 Biological Control
ENWC 425 Mammalogy
ENWC 435 Wildlife Population Dynamics
ENWC 444/BISC 440 Conservation of Tropical Biodiversity
ENWC 456 Conservation Biology
ENWC 620 Behavioral Ecology

One of the following:
MAST 427/627 Marine Biology
MAST 629 Topics in Marine Ecology

Environmental Chemistry Concentration
Concentration in Environmental Chemistry (also fulfills the minor in chemistry)

The concentration in Environmental Chemistry explores the chemical basis for understanding environmental processes on local, regional and global scales. Environmental chemists study the source, reaction, transport, effect and fate of chemical species in and across air, water and soil. Because of the complexity of the environment, many types of chemical phenomena may contribute to a single environmental problem. For this reason, the concentration provides a strong background in fundamental principles across the field of chemistry. With this background, students are poised to make significant contributions to multidisciplinary projects where understanding and manipulating the underlying chemical
phenomena are critical to success. Some examples include the chemistry and biochemistry of greenhouse gas formation and destruction, sequestration of toxic materials in a chemical form that reduces bioavailability, and transport of human-derived pollutants to remote locations.

**CHEM 220/CHEM 221**
Quantitative Analysis with Laboratory

**CHEM 321** Organic Chemistry I

One of the following:

**CHEM 418 or CHEM 445 or CHEM 446**
Physical Chemistry with Lab

**CHEM 457/CHEM 458**
Inorganic Chemistry with Laboratory

**CHEM 527** Introductory Biochemistry

**GeoScience Concentration**

Concentration in GeoScience (also fulfills requirements for a Minor in Geology)
The Earth is a dynamic, integrated system that includes rocks and minerals, water, the atmosphere, and living organisms. Environmental Science Students who concentrate in Geoscience explore how earth materials and geological processes have operated and impacted the planet's surface environments over both human and geologic time scales. We focus on understanding the geologic connection of humans and their environment and efficient uses of land, water, energy, and mineral resources. This environmental concentration gives students knowledge of the geological processes above, on, and below the earth's surface, emphasizing how these processes operate through time to mold our planet's surface and near-surface environment.

One of the following year-long sets:

**GEOL 300** The Earth's Materials I: Minerals

**GEOL 302** The Earth's Materials II: Rocks

**GEOL 303** The Earth's Surface I: Surficial Processes

**GEOL 304** Earth's Surface II: Stratigraphy

**GEOL 305** Earth's Lithosphere I: Structural Geology & Plate Tectonics

**GEOL 306** Earth's Lithosphere II: Field Geology

**GEOL 307** Earth's History I: Paleobiology

**GEOL 308** Earth's History II: Earth System Science

And 6-8 credits of additional Geology courses at the 300-level or above
Hydrology Concentration

Concentration in Hydrology
The Concentration in Hydrology provides an opportunity for Environmental Science majors to study the movement, distribution, quantity, and quality of water on Earth. Students pursuing this concentration will have the opportunity to study aspects of hydrology that range from the atmosphere to the Earth's subsurface, and from biogeochemical processes to policy and water management. Eight courses in water science are offered from four Departments (Geological Sciences, Geography, Civil and Environmental Engineering, and Bioresources Engineering), of which three are required. Many aspects of hydrology are quantitative in nature, requiring knowledge of basic calculus and in some cases more advanced calculus and/or statistics; thus MATH 243 is required, along with one additional course in differential equations, linear algebra, or statistics.

MATH 243 Analytical Geometry and Calculus C

and

One of the following:
MATH 302 Ordinary Differential Equations
MATH 349 Elementary Linear Algebra
MATH 450 Statistics for Engineering and Physical Sciences
ENSC 475 Statistics for Environmental Science
STAT 657 Statistics for Earth Sciences

and

Three of the following:
GEOL 428 Hydrogeology
GEOL411/611 Fluvial Geomorphology
GEOG 320 Water and Society
GEOG 431 Watershed Ecology
GEOG 456 Hydroclimatology
CIEG 443 Watershed Engineering, Planning and Design
BREG 321 Storm-Water Management (pre-requisite)
BREG 622 Watershed Modeling (pre-requisites)

Marine Science Concentration

Concentration in Marine Science (also fulfills requirements for a Minor in Marine Studies)

The concentration in Marine Science allows students to study and better understand the environment of the ocean, the seabed, and the coastal zone. Building on the foundation of MAST 482 Introduction to Ocean Sciences in the ENSC core, students choose a focus in either the physical ocean or in marine ecosystems. Students in either focus must complete 6 credits of required courses (one introductory course and MAST 492 Marine Environmental Case Studies) and 9 credits of focused electives. These courses allow students to gain a depth of understanding of the Marine Environment.

Marine Ecosystems Track:
MAST 427/627
Marine Biology
MAST 492 Seminar: Marine Environmental Case Studies

and

Three of the following:
BISC 302 General Ecology
MAST 314/ENWC 314 Comparative Terrestrial and Marine Ecology
MAST 421/621 Coastal Field Biology
MAST 451/651 Marine Invertebrate Diversity
MAST630 Ichthyology
BISC 637 Population Ecology

Physical Ocean Science Track:
MAST 402/602 Introduction to Physical Ocean Science
MAST 492 Seminar: Marine Environmental Case Studies

and

Three of the following:
GEOG 420 Atmospheric Physics
GEOG 357 Paleoclimatology
GEOL 414/614 Quaternary Geology and Geochronology
GEOL 434/634 Geology of Coasts
MAST 437/637 Geological Oceanography
MAST 628 Offshore Wind Power: Science, Engineering and Policy

Pollution Control Concentration

Concentration in Pollution Control
Because humans generate many waste materials, there is considerable need to design systems to manage and treat such wastes. Such management/treatment systems are essential for maintaining our air, water and soil quality. In addition, system-wide approaches, e.g., life cycle
analyses, are critical to understanding the impact of new industries and alternative systems, e.g., biofuels from agricultural feedstocks, on the environment. Students learn the approaches and models needed to manage and treat wastes that may affect the terrestrial environment.

MATH 243 Analytical Geometry and Calculus C

CIEG 233 Environmental Engineering Processes
OR
CHEG 112 Introduction to Chemical Engineering

Three of the following:
CIEG 438 Water and Wastewater Engineering
CIEG 433 Hazardous Waste Management
CIEG 436 Processing, Recycling, Management of Solid Wastes
BREG 424 Water Supply and Water Treatment Systems

Sustainable Energy Technology Concentration

Concentration in Sustainable Energy Technology (also fulfills requirements for a minor in Sustainable Energy Technology)

Developing new energy sources that have minimal environmental impact is one of the greatest challenges of our society. Wind energy, biofuels, solar energy, and fuel cells are examples of topical areas included in this concentration. Students have the opportunity to study modern technologies for, and recent advances in energy production, energy storage and energy use. Quantitative approaches are emphasized and include assessments of the economic and local and global environmental impact of alternative energy sources.

POSC 424 Energy Policy and Administration

Three (9 credits or more) out of the following set of courses (*not including any required prerequisites. Please note: several of these courses have multiple prereqs):
CHEG 616 Chemistry and Physics of Surfaces and Interfaces*
CHEG 625 Green Engineering
CIEG 351 Transportation Engineering
MEEG 425 Automotive Powertrain Theory*
MEEG 442 Introduction to Fuel Cells*
MEEG 435 Wind Power Engineering*
EGTE 456 Fundamentals of Heating, Ventilation and Air Conditioning*
ELEG 620 Solar Electric Systems

ELEG 415/ELEG 615 Electric Power and Renewable Energy Systems*
ELEG 467/ELEG 667 Low Power Electronics and Lighting
CHEG 612 Applied Process Heat Transfer*
CHEG 614 Special Topics in Energy
CHEG 468 Research (3 cr)

One course from the following list:
GEOG 622 Resources, Development & the Environment
GEOG 236 Conservation: Global Issues
MAST 675 Economics of Natural Resources
MAST 628 Offshore Wind Power: Science, Engineering, and Policy
GEOG 617 Seminar in Climate Change*

Water Quality and Resources Concentration

Concentration in Water Quality and Resources

Water in our bays, rivers, streams, lakes, and groundwater systems are heavily utilized by humans and impacted by human activity. Excessive water withdrawals from rivers and aquifers impact stream ecology and water availability for agriculture. Pollutants such as mercury and pharmaceutical compounds can affect aquatic life. Students learn the models describing water movement in these systems, and, just as important, the models describing the physical, chemical, and biological processes affecting the fate of contaminants. Emphasis is given to understanding the quantitative models required by society to manage our water quality and resources.

MATH 243 Analytical Geometry and Calculus C
MATH 302 Differential Equations

one of the following:
CIEG 223 Environmental Engineering Processes
or
CHEG 112 Introduction to Chemical Engineering
or
CIEG 331 Environmental Engineering

one of the following:
CIEG 305 Fluid Mechanics
or
MEEG 331 Fluid Mechanics I
or
CHEG 341 Fluid Mechanics

and

Two of the following:
Students pursuing a Bachelor of Science in Geology can take a concentration in Coastal and Marine Geoscience or Paleobiology. Students from other majors can earn a minor in Geology or Coastal and Marine Geoscience. Environmental Science majors can earn a concentration and a minor in Geology while earning a B.S. in Environmental Science. Our academic programs place special emphasis on the study and understanding of surface and near-surface processes, including coastal sediment transport, geomorphology, hydrogeology, geobiology, environmental geophysics, and Quaternary geology (the study of Earth's most recent geological time period).

No matter the topic, our students and faculty often find themselves in collaborations with colleagues at the Delaware Geological Survey (DGS) and other programs throughout the university. DGS projects include creating maps of the state's geology, monitoring seismic activity, and studying Delaware's hydrogeologic framework. As members of CEOE, our geologists often team up with marine studies specialists and make use of the university's 146-foot seagoing oceanographic research vessel, the Hugh R. Sharp.

Geology graduates choose from diverse career options. While many geoscientists have traditionally made careers in the oil industry, growing concern for the global environment and the need to consider geologic processes as part of an integrated global system have opened a wide variety of new employment areas. These professions focus on understanding geologic hazards and defining efficient uses of land, water, energy, and mineral resources, and require integrative knowledge of the chemical, physical, and biological processes above, on, and below the earth's surface. By emphasizing how these processes operate through time to mold our planet's surface and near-surface environment, our teaching has provided positive opportunities for graduates as they continue their education or pursue employment in environmental and other sectors.

BACHELOR OF ARTS - GEOLOGY

Students must complete the university-level, college-level and breadth requirements for College of Earth, Ocean, and Environment Bachelor of Arts degrees.
UNIVERSITY REQUIREMENTS
ENGL 110  Critical Reading and Writing (minimum grade C-) 3
First Year Experience (FYE) 0-4
Breadth Requirements *fulfilled by college breadth requirements below 12
Discovery Learning Experience (DLE) 3
Multi-cultural Courses 3

COLLEGE REQUIREMENTS
Second Writing Requirement
(minimum grade C-) 3
A second writing course involving significant writing experience including two papers with a combined minimum of 3,000 words to be submitted for extended faculty critique of both composition and content. This course must be taken after completion of 60 credit hours. Appropriate writing courses are normally designated on the registrar’s course search page.

Foreign Language (minimum grade of D-) 0-12
Completion of the intermediate-level course (107 or 112 or 214) in a given language. Number of credits needed and initial placement will depend on number of years of high school study of foreign language. Students with four or more years of high school work in a single foreign language may attempt to fulfill the requirement in that language by taking an exemption examination.

Mathematics: (one of the following four options with a minimum grade of D-) 0-4
OPTION ONE:
MATH 113  Contemporary Mathematics (designed for students who do not intend to continue the study of mathematics)

or

MATH 127  Mathematics and Quantitative Reasoning

OPTION TWO:
MATH 114  College Mathematics and Statistics (designed for students who do not intend to continue the study of mathematics)

or

MATH 115  Pre-Calculus (designed for students who intend to continue the study of mathematics)

or

MATH 117  Pre-Calculus for Scientists and Engineers

OPTION THREE:
Successful completion of any mathematics course at or above the 200-level except MATH 201, MATH 202, MATH 205, MATH 250, MATH 251, MATH 252, MATH 253, MATH 266, MATH 300 or MATH 450.

OPTION FOUR:
Successful performance on a proficiency test in mathematics administered by the Department of Mathematical Sciences. (0 credits awarded)

COLLEGE BREADTH REQUIREMENTS
These requirements apply to all College of Earth, Ocean & Environment Bachelor of Arts degrees. College breadth courses when combined with University breadth courses must represent at least two departments or appropriate instructional units in each category.

If the grade earned is sufficient, a course may be applied toward more than one requirement (e.g., breadth and major requirements), but the credits are counted only once toward the total credits for graduation. If all but one course in a group has been taken in one department or program, a course cross-listed with that program will not satisfy the distribution requirement.

*note: 3 credits in each category below can be used to fulfill the University Breadth requirement

Group A: Creative Arts and Humanities  9
Understanding and appreciation of the visual and performing arts, of aesthetic forms, designs, or craftsmanship, or of literary, philosophical, and intellectual traditions. Courses may focus on a single aesthetic form or intellectual tradition, or cross-cultural comparisons.

Group B: History and Cultural Change  9
Understanding of the sources and forces of historical changes in ideas, beliefs, institutions, and cultures. Courses may address social, cultural, intellectual, economic, technological, artistic, scientific, and political development, changes in a discipline, or globalization and its effects.

Group C: Social and Behavioral Sciences  9
Understanding of the behavior of individuals and social groups in the context of their human and natural environments. Courses emphasize the empirical findings, applications, and methods of the social and behavioral sciences.

Group D: Mathematics, Natural Sciences, and Technology 10
Understanding of fundamental and/or applied
concepts and phenomena from mathematics, logic, natural or physical sciences, and technology including quantitative reasoning and methods used to approach and solve problems.

Courses taken to fulfill this category (university and college breadth) must include a minimum of one course with an associated laboratory

MAJOR REQUIREMENTS:
One of the following:
GEOL 105/GEOL 115
Geologic Hazards and their Human Impact and Laboratory
Note: GEOL 115 and GEOL 105 must be taken concurrently

or

GEOL 107  General Geology  4
or

GEOL 113  Earth Science  4

and

GEOL 300  Earth's Materials I: Minerals  4
GEOL 302  Earth's Materials II: Rocks  4
GEOL 303  Earth's Surface I: Surficial Processes  4
GEOL 304  Earth's Surface II: Stratigraphy  4
GEOL 305  Earth Lithosphere I: Structural Geology and Plate Tectonics  4
GEOL 306  Earth's Lithosphere II: Field Geology  4
GEOL 307  Earth's History I: Paleobiology  4
GEOL 308  Earth's History II: Earth System Science  4
CHEM 103  General Chemistry I  4
CHEM 104  General Chemistry II  4
PHYS 201  Introductory Physics I  4
PHYS 202  Introductory Physics II  4

ELECTIVES
After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF 124

BACHELOR OF ARTS - EARTH SCIENCE EDUCATION

Students must complete the university-level, college-level and breadth requirements for College of Earth, Ocean, and Environment Bachelor of Arts degrees.

UNIVERSITY REQUIREMENTS:
ENGL 110  Critical Reading and Writing (minimum grade C-)  3
FirstYear Experience (FYE)  0-4

Breadth Requirements *fulfilled by college breadth requirements below  12
Discovery Learning Experience (DLE)  3
Multicultural Courses  3

COLLEGE REQUIREMENTS:
Second Writing Requirement
(minimum grade of C-)  3
A second writing course involving significant writing experience including two papers with a combined minimum of 3,000 words to be submitted for extended faculty critique of both composition and content. This course must be taken after completion of 60 credit hours. Appropriate writing courses are designated on the registrar’s course search page.

Foreign Language (minimum grade of D-)  0-12
Completion of the intermediate-level course (107 or 112 or 214) in a given language. Number of credits needed and initial placement will depend on number of years of high school study of foreign language. Students with four or more years of high school work in a single foreign language may attempt to fulfill the requirement in that language by taking an exemption examination.

COLLEGE BREADTH REQUIREMENTS:
These requirements apply to all College of Earth, Ocean & Environment Bachelor of Arts degrees. College breadth courses when combined with University breadth courses must represent at least two departments or appropriate instructional units in each category.

If the grade earned is sufficient, a course may be applied toward more than one requirement (e.g., breadth and major requirements), but the credits are counted only once toward the total credits for graduation. If all but one course in a group has been taken in one department or program, a course cross-listed with that program will not satisfy the distribution requirement.

*note: 3 credits in each category below can be used to fulfill the University Breadth requirement

Group A: Creative Arts and Humanities  9
Understanding and appreciation of the visual and performing arts, of aesthetic forms, designs, or craftsmanship, or of literary, philosophical, and intellectual traditions. Courses may focus on a single aesthetic form or intellectual tradition, or cross-cultural comparisons.

Group B: History and Cultural Change  9
Understanding of the sources and forces of historical changes in ideas, beliefs, institutions,
and cultures. Courses may address social, cultural, intellectual, economic, technological, artistic, scientific, and political development, changes in a discipline, or globalization and its effects.

Group C: Social and Behavioral Sciences 9
Understanding of the behavior of individuals and social groups in the context of their human and natural environments. Courses emphasize the empirical findings, applications, and methods of the social and behavioral sciences.

Group D: Mathematics, Natural Sciences and Technology 10
Understanding of fundamental and/or applied concepts and phenomena from mathematics, logic, natural or physical sciences, and technology including quantitative reasoning and methods used to approach and solve problems.

Courses taken to fulfill this category (university and college breadth) must include a minimum of one course with an associated laboratory

MAJOR REQUIREMENTS:
GEOL 105/GEOL 115 Geologic Hazards and their Human Impact and Laboratory 4
GEOL 107 General Geology 4
GEOL 300 Earth's Materials I: Minerals 4
GEOL 303 Earth's Surface I: Surficial Processes 4
GEOL 306 Earth's Lithosphere II: Field Geology 4
GEOG 101 Physical Geography 3
GEOG 220 Meteorology 3
GEOG 235 Conservation of Natural Resources 3

One of the following
GEOG 343 Climatic Geomorphology 3
or
GEOG 255 Applied Climatology 3

and

PHYS 133 Introduction to Astronomy 4
PHYS 201/PHYS 202 Introductory Physics I and II 8
CHEM 103 General Chemistry 4
BISC 195 Biological Evolution 3
MATH 221 Calculus I 3
MAST 200 The Oceans 3
A grade of C- or better is required in BISC 195, MAST 200, PHYS 133, and SCEN 491 and all of the required EDUC, GEOG, and GEOL courses.

EDUC 413 Adolescent Development and Educational Psychology 4
EDUC 414 Teaching Exceptional Adolescents 3
EDUC 419 Diversity in Secondary Education 3
EDUC 420 Reading in the Content Area 3
EDUC 430 Classroom Management in Schools 3
EDUC 400 Student Teaching 9
SCEN 491 Teaching Science in Secondary Schools 4
SCEN 492 Student Teaching Seminar: Secondary Science 3

To be eligible to student teach, Earth Science Education students must have an overall GPA of 2.50 with a GPA of 2.75 in BISC 195, MAST 200, PHYS 133 and their geology and geography courses. They must also pass a teacher competency test as established by the University Council on Teacher Education. Students must consult with the teacher education program coordinator to obtain the student teaching application and other information concerning student teaching policies.

CREDITS TO TOTAL A MINIMUM OF 124

BACHELOR OF SCIENCE - GEOLOGY

Students must complete the university-level, college-level and breadth requirements for College of Earth, Ocean, and Environment Bachelor of Science degrees.

UNIVERSITY REQUIREMENTS:
ENGL 110 Critical Reading and Writing (minimum grade C-) 3
First Year Experience (FYE) 0-4
Breadth Requirements *fulfilled by college breadth requirements below 12
Discovery Learning Experience (DLE) 3
Multi-cultural Courses 3

COLLEGE REQUIREMENTS:
Second Writing Requirement (minimum grade of C-) 3
A second writing course involving significant writing experience including two papers with a combined minimum of 3,000 words to be submitted for extended faculty critique of both composition and content. This course must be taken after completion of 60 credit hours. Appropriate writing courses are designated on the registrar’s course search page.

Foreign Language: Minimum grade of D-) 0-12
Completion of the intermediate-level course (107 or 112 or 214) in an ancient or modern language. The number of credits needed and
B.S. in Geology with Paleobiology Concentration

initial placement will depend on the number of years of high school study of foreign language. Students with four or more years of high school work in a single foreign language, or who have gained proficiency in a foreign language by other means, may attempt to fulfill the requirement in that language by taking an exemption examination through the Foreign Languages and Literatures Department.

COLLEGE BREADTH REQUIREMENTS:
These requirements apply to all College of Earth, Ocean & Environment Bachelor of Arts degrees. College breadth courses when combined with University breadth courses must represent at least two departments or appropriate instructional units in each category.

If the grade earned is sufficient, a course may be applied toward more than one requirement (e.g., breadth and major requirements), but the credits are counted only once toward the total credits for graduation. If all but one course in a group has been taken in one department or program, a course cross-listed with that program will not satisfy the distribution requirement.

*note: 3 credits in each category below can be used to fulfill the University Breadth requirement

Group A: Creative Arts and Humanities 6
Understanding and appreciation of the visual and performing arts, of aesthetic forms, designs, or craftsmanship, or of literary, philosophical, and intellectual traditions. Courses may focus on a single aesthetic form or intellectual tradition, or cross-cultural comparisons.

Group B: History and Cultural Change 6
Understanding of the sources and forces of historical changes in ideas, beliefs, institutions, and cultures. Courses may address social, cultural, intellectual, economic, technological, artistic, scientific, and political development, changes in a discipline, or globalization and its effects.

Group C: Social and Behavioral Sciences 6
Understanding of the behavior of individuals and social groups in the context of their human and natural environments. Courses emphasize the empirical findings, applications, and methods of the social and behavioral sciences.

MAJOR REQUIREMENTS:

One of the following:
GEOL 107 General Geology 4
or
GEOL 105/GEOL 115 Geologic Hazards and their Human Impact & Laboratory 4
or
GEOL 113 Earth Science 4
and
GEOL 300 Earth's Materials I: Minerals 4
GEOL 302 Earth's Materials II: Rocks 4
GEOL 303 Earth's Surface I: Surficial Processes 4
GEOL 304 Earth's Surface II: Stratigraphy 4
GEOL 305 Earth Lithosphere I: Structural Geology and Plate Tectonics 4
GEOL 306 Earth's Lithosphere II: Field Geology 4
GEOL 307 Earth's History I: Paleobiology 4
GEOL 308 Earth's History II: Earth System Science 4
MATH 241/MATH 242 Analytic Geometry and Calculus A and B 8
CHEM 103/CHEM 104 General Chemistry 8
PHYS 201/PHYS 202 Introductory Physics I and II 8

Geology Electives 9-10
(geol 385 or any 400-level or other GEOL courses approved in writing by department, including field courses taken as transfer work)
A minimum grade of C- is required for any GEOL courses that count for the major.

Two of the following: 6-8
GEOG 250 Computer Methods in Geography
GEOG 372 Geographic Information Systems
GEOG 471 Advanced Geographic Information Systems
FREC 480 Geographic Information Systems in Natural Resource Management
MATH 243 Analytic Geometry and Calculus C
MATH 302 Ordinary Differential Equations or other courses as approved in writing.

ELECTIVES
After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF 124

BACHELOR OF SCIENCE in Geology with Paleobiology Concentration

Students must complete the university and college level requirements for the Bachelor of Science in Geology.
### Bachelor Of Science In Geology With Coastal And Marine Geoscience Concentration

Students must complete the university and college level requirements for the Bachelor of Science in Geology.

**Major Requirements:**

One of the following:

- **GEOL 107** General Geology 4
- **GEOL 105/GEOL 115** Geologic Hazards and their Human Impact and Laboratory (GEOL105 and GEOL115 must be taken concurrently) 4
- **GEOL 113** Earth Science 4
- **GEOL 300** Earth's Materials I: Minerals 4
- **GEOL 302** Earth's Materials II: Rocks 4
- **GEOL 303** Earth's Surface I: Surficial Processes 4
- **GEOL 304** Earth's Surface II: Stratigraphy 4
- **GEOL 305** Earth Lithosphere I: Structural Geology and Plate Tectonics 4
- **GEOL 306** Earth's Lithosphere II: Field Geology 4
- **GEOL 307** Earth's History I: Paleobiology 4
- **GEOL 308** Earth's History II: Earth System Science 4
- **GEOL 405** Introduction to Research 3

**Geology Electives** 6

- GEOL 385 or any 400-level GEOL or other GEOL courses approved in writing by the department, including field courses taken as transfer work.

- **BISC 207** Introductory Biology I and II 4
- **BISC 208** Introductory Biology II 4
- **BISC 495** Evolution 3
- **CHM 103** General Chemistry I 4
- **CHM 104** General Chemistry II 4

One of the following

- **BISC 302** General Ecology 3
- **BISC 321** Environmental Biology 3

Two of the following

- **BISC 300** Introduction to Microbiology 4
- **BISC 303** Genetic and Evolutionary Biology 4
- **BISC 480** Vertebrate Natural History 4

One of the following

- **MATH 210** Discrete Mathematics I 3
- **MATH 230** Finite Mathematics with Applications 3
- **MATH 241** Analytic Geometry and Calculus A 4
- **MATH 205** Statistical Methods 4

**Electives**

After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirements for the degree. CREDITS TO TOTAL A MINIMUM OF 124.
MAST 464  Marine Science Summer Internship  3

or

MAST 468  Undergraduate Research (min 3 credits)  3
MAST 402/602  Physical Oceanography  3
MAST 606  Ocean and Atmosphere Remote Sensing  3
MAST 427/627  Marine Biology  3
MAST 437/637  Geological Oceanography  3
MAST 646  Chemical Oceanography  3
GEOG 681/MAST 681  Remote Sensing of Environment  3

or any other courses approved in writing by the Department

CREDITS TO TOTAL A MINIMUM OF 125

MINOR IN GEOLOGY

The minor consists of at least 18 credit hours in geology.

The requirements are:
GEOL 107  General Geology  4
or
GEOL 105/GEOL 115  Geologic Hazards and their Human Impact and Laboratory  4
or
GEOL 113  Earth Science  4

plus additional GEOL courses at the 300-400-level to obtain the remaining credits to reach a total of 18.

MINOR IN COASTAL AND MARINE GEOSCIENCE

A minimum of 18 credits of course work in Coastal and Marine Geoscience must be completed for a minor.

The following courses are required (within the stated options); others can be added to obtain additional credits in related disciplines.

GEOL 107  General Geology  4
or
GEOL 105/GEOL 115  Geologic Hazards and their Human Impact and Laboratory  4

At least one full-year sequence of 300-level GEOL courses:
GEOL 300-302 or GEOL 303-304 or GEOL 305-306 or GEOL 307-308  8

MAST 482  Introduction to Ocean Sciences  3
GEOL 431  Marine Geology  3

Total Credits  18