MAJORS

College of Arts and Sciences
• anthropology***
• biochemistry
• biology* ***
• chemistry*
• communication studies (several concentrations available)
• computer information systems
• computer science
• creative writing
• criminal justice
• English*
• environmental science
• fine arts***
• French*
• government and politics
• history*
• international relations
• mathematics*
• physics*
• psychology***
• science administration
• science education*
• sociology***
• Spanish*
• women’s studies

School of Business Administration
• accounting**
• economics** (financial services track available)
• international business**
• management** (several concentrations available)

School of Engineering
• chemical engineering**
• civil engineering**
• electrical engineering (traditional or computer track)**
• mechanical engineering**

School of Hospitality Management
• hospitality management** (several concentrations available)

School of Human Service Professions
• early childhood education
• elementary education
• elementary/early childhood education
• secondary education (several concentrations available)
• social work
• special education*

School of Nursing
• nursing

Dual Degree Programs
• chemistry/chemical engineering
• creative writing/English
• criminal justice/government & politics
• electrical engineering/physics
• environmental science/biology
• mathematics/computer science
• mechanical engineering/physics
• social work/psychology

*Secondary education certification available
**Cooperative education available
***Pre-physical therapy 3+3 and 4+3 programs available

PROFILE

Widener University is a metropolitan university that connects curricula to social issues through civic engagement. It comprises eight schools and colleges that offer liberal arts and sciences, professional and preprofessional curricula leading to associate’s, baccalaureate, master’s, and doctoral degrees.

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### 2009–2010 Academic Calendar

#### FALL SEMESTER

<table>
<thead>
<tr>
<th>AUGUST 2009</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>31 MON</td>
<td>New student move-in.</td>
</tr>
<tr>
<td></td>
<td>First day of new student orientation.</td>
</tr>
<tr>
<td>SEPTEMBER 2009</td>
<td></td>
</tr>
<tr>
<td>1 TUE</td>
<td>Second day of new student orientation.</td>
</tr>
<tr>
<td>2 WED</td>
<td>Official start of fall semester.</td>
</tr>
<tr>
<td></td>
<td>Third day of new student orientation.</td>
</tr>
<tr>
<td></td>
<td>Check-in for upperclassmen and re-entry students.</td>
</tr>
<tr>
<td>3 THU</td>
<td>All Main Campus day classes begin.</td>
</tr>
<tr>
<td>10 THU</td>
<td>Last day for dropping and adding classes.</td>
</tr>
<tr>
<td>OCTOBER 2009</td>
<td></td>
</tr>
<tr>
<td>6 TUE</td>
<td>Last day to withdraw from Module I courses.</td>
</tr>
<tr>
<td>9–12 FRI–MON</td>
<td>Fall break.</td>
</tr>
<tr>
<td>17 SAT</td>
<td>Homecoming.</td>
</tr>
<tr>
<td>19 MON</td>
<td>Freshman pre-advising day.</td>
</tr>
<tr>
<td>20–21 TUE–WED</td>
<td>Final exams, Module I.</td>
</tr>
<tr>
<td>21 WED</td>
<td>Midterm.</td>
</tr>
<tr>
<td></td>
<td>Deadline for finishing Incompletes from summer 2009.</td>
</tr>
<tr>
<td>22 THU</td>
<td>Module II begins.</td>
</tr>
<tr>
<td>NOVEMBER 2009</td>
<td></td>
</tr>
<tr>
<td>9–27 MON–FRI</td>
<td>Registration for spring 2010 courses.</td>
</tr>
<tr>
<td>13 FRI</td>
<td>Deadline for withdrawal without academic penalty.</td>
</tr>
<tr>
<td>16–20 MON–FRI</td>
<td>International Week.</td>
</tr>
<tr>
<td>25 WED</td>
<td>Last day to withdraw from Module II courses.</td>
</tr>
<tr>
<td>26–27 THU–FRI</td>
<td>Thanksgiving holiday.</td>
</tr>
<tr>
<td>DECEMBER 2009</td>
<td></td>
</tr>
<tr>
<td>10–11 THU–FRI</td>
<td>Final exams, Module II.</td>
</tr>
<tr>
<td>11 FRI</td>
<td>Last day of classes.</td>
</tr>
<tr>
<td>12 SAT</td>
<td>Reading Day.</td>
</tr>
<tr>
<td>13–17 SUN–THU</td>
<td>Final exams (on Sunday, begin at 1 p.m.).</td>
</tr>
<tr>
<td>17 THU</td>
<td>Official end of fall semester.</td>
</tr>
</tbody>
</table>

#### SPRING SEMESTER

<table>
<thead>
<tr>
<th>JANUARY 2010</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>10 SUN</td>
<td>New student check-in.</td>
</tr>
<tr>
<td>11 MON</td>
<td>Official start of spring semester.</td>
</tr>
<tr>
<td></td>
<td>All Main Campus day classes begin.</td>
</tr>
<tr>
<td>18 MON</td>
<td>Martin Luther King Jr. Holiday.</td>
</tr>
<tr>
<td>19 TUE</td>
<td>Last day for dropping and adding classes.</td>
</tr>
<tr>
<td>FEBRUARY 2010</td>
<td></td>
</tr>
<tr>
<td>12 FRI</td>
<td>Last day to withdraw from Module I courses.</td>
</tr>
<tr>
<td>25–26 THUR–FRI</td>
<td>Final exams, Module I.</td>
</tr>
<tr>
<td>26 FRI</td>
<td>Midterm.</td>
</tr>
<tr>
<td></td>
<td>Deadline for finishing Incomplete grades from fall 2009.</td>
</tr>
<tr>
<td>MARCH 2010</td>
<td></td>
</tr>
<tr>
<td>1–5 MON–FRI</td>
<td>Midterm break.</td>
</tr>
<tr>
<td>8 MON</td>
<td>All classes resume. Module II begins.</td>
</tr>
<tr>
<td>14 SUN</td>
<td>Make-up day, if needed, for classes missed due to inclement weather (1–6 p.m.).</td>
</tr>
<tr>
<td>14–19 SUN–FRI</td>
<td>Honors Week.</td>
</tr>
<tr>
<td>29/4–16</td>
<td>Registration for summer and fall 2010 courses.</td>
</tr>
<tr>
<td>APRIL 2010</td>
<td></td>
</tr>
<tr>
<td>3/29–4/16</td>
<td>Registration for summer and fall 2010 courses.</td>
</tr>
<tr>
<td>2 FRI</td>
<td>Spring holiday.</td>
</tr>
<tr>
<td>11 SUN</td>
<td>Make-up day, if needed, for classes missed due to inclement weather (1–6 p.m.).</td>
</tr>
<tr>
<td>14 WED</td>
<td>Last day to withdraw from Module II courses.</td>
</tr>
<tr>
<td>16 FRI</td>
<td>Student Project Day (no classes).</td>
</tr>
<tr>
<td>27–28 TUE–WED</td>
<td>Final exams, Module II.</td>
</tr>
<tr>
<td>28 WED</td>
<td>Last day of classes.</td>
</tr>
<tr>
<td>29 THU</td>
<td>Reading Day.</td>
</tr>
<tr>
<td>4/3–5/5</td>
<td>Final exams (on Sunday begin at 1 p.m.).</td>
</tr>
<tr>
<td>MAY 2010</td>
<td></td>
</tr>
<tr>
<td>4/3–5/5</td>
<td>Final exams (on Sunday begin at 1 p.m.).</td>
</tr>
<tr>
<td>5 WED</td>
<td>Official end of spring semester.</td>
</tr>
<tr>
<td>15 SAT</td>
<td>Commencement.</td>
</tr>
</tbody>
</table>

#### SUMMER I & II SESSIONS

<table>
<thead>
<tr>
<th>May 17–June 25</th>
<th>Summer Day I—Undergraduate day, University College evening, and graduate courses offered.</th>
</tr>
</thead>
<tbody>
<tr>
<td>May 19</td>
<td>Last day to drop a Summer I course.</td>
</tr>
<tr>
<td>June 10</td>
<td>Last day to withdraw from a Summer I course without academic penalty.</td>
</tr>
<tr>
<td>July 6–August 13</td>
<td>Summer Day II—Undergraduate day, University College evening, and graduate courses offered.</td>
</tr>
<tr>
<td>July 8</td>
<td>Last day to drop a Summer II course.</td>
</tr>
<tr>
<td>July 30</td>
<td>Last day to withdraw from a Summer II course without academic penalty.</td>
</tr>
</tbody>
</table>

#### SUMMER CO-OP SESSION

<table>
<thead>
<tr>
<th>MAY 2010</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>17 MON</td>
<td>All co-op classes begin, 8 a.m.</td>
</tr>
<tr>
<td>25 TUE</td>
<td>Last day for dropping and adding classes.</td>
</tr>
<tr>
<td>31 MON</td>
<td>Memorial Day holiday.</td>
</tr>
<tr>
<td>JUNE 2010</td>
<td></td>
</tr>
<tr>
<td>25 FRI</td>
<td>Midterm.</td>
</tr>
<tr>
<td></td>
<td>Deadline for finishing Incomplete grades from spring 2010.</td>
</tr>
<tr>
<td>JULY 2010</td>
<td></td>
</tr>
<tr>
<td>13 TUE</td>
<td>Deadline for withdrawal without academic penalty.</td>
</tr>
<tr>
<td>AUGUST 2010</td>
<td></td>
</tr>
<tr>
<td>6 FRI</td>
<td>Last day of classes.</td>
</tr>
<tr>
<td>9–13 MON–FRI</td>
<td>Final exams.</td>
</tr>
</tbody>
</table>
ABOUT WIDENER UNIVERSITY

MISSION
As a leading metropolitan university, we achieve our mission at Widener by creating a learning environment where curricula are connected to societal issues through civic engagement. We lead by providing a unique combination of liberal arts and professional education in a challenging, scholarly, and culturally diverse academic community. We engage our students through dynamic teaching, active scholarship, personal attention, and experiential learning. We inspire our students to be citizens of character who demonstrate professional and civic leadership. We contribute to the vitality and well-being of the communities we serve.

VISION STATEMENT
Widener aspires to be the nation’s preeminent metropolitan university recognized for an unparalleled academic environment, innovative approaches to learning, active scholarship, and the preparation of students for responsible citizenship in a global society.

GOALS
• Develop a university community whose diversity enriches the lives of all members and where our students are prepared for living in a pluralistic and ever-changing world.
• Achieve an unparalleled academic environment by promoting rigorous educational programs, productive scholarship, and lifelong learning.
• Create a student-centered living and learning experience that supports the achievement of academic excellence.
• Transform Widener into a university known for distinctive educational programs that effectively use experiential and collaborative learning, mentoring, and engaged teaching to emphasize the link between the curricula and societal needs.
• Expand and diversify the university’s financial resources, and manage its assets in an efficient and effective manner.
• Make Widener an employer of first choice and a place that attracts talented people at all levels to work or volunteer to help us fulfill our unique mission.
• Implement strategies to strengthen the integration of liberal arts and sciences and professional programs, and enrich our general education offerings to ensure that every undergraduate student has common educational experiences involving civic engagement and experiential learning.
• Foster an environment that will encourage innovation in teaching, scholarship, and program development.
• Raise the profile of Widener among metropolitan leaders, the general public, the academic disciplines, and the national higher education community.
• Optimize enrollment to achieve a vital university community at both the undergraduate and graduate levels.
• Address the metropolitan region’s most pressing concerns and enhance our program offerings to respond to the educational needs of our community.
• Actively promote the development of leadership skills and provide opportunities for leadership experiences for members of the university community so that they may become civic and professional leaders of our metropolitan region.

HISTORY
Widener was founded in 1821 as a preparatory school for boys in Wilmington, Delaware. The institution moved to Pennsylvania in 1862 and was granted collegiate powers and privileges via universal charter by the Pennsylvania legislature. From 1892 to 1972, it was known as Pennsylvania Military College, though it had officially become PMC Colleges in 1966 when a nonmilitary, coeducational component was added. The name Widener College was adopted, and the Corps of Cadets disbanded, in 1972. Graduate programs were introduced in 1967, and the School of Law acquired in 1975. In recognition of its comprehensive offerings, Widener College became Widener University in 1979. Today, Widener is a four-campus university offering more than 140 programs of study.

ACCREDITATIONS
Widener University is accredited by the Middle States Association of Colleges and Schools. Widener University’s graduate programs are additionally accredited by the following: AACSB International—The Association to Advance Collegiate Schools of Business (School of Business Administration), American Bar Association (School of Law), American Psychological Association (Doctor of Psychology; Clinical Psychology Internship), Commission on Accreditation for Healthcare Management Education (MBA in Healthcare Management), Commission on Accreditation in Physical Therapy Education (Doctor of Physical Therapy), Commission on Collegiate Nursing Education (School of Nursing), Council on Social Work Education (Center for Social Work Education), National Association for Education of Young Children (Child Development Center), Pennsylvania Continuing Legal Education Board of the Supreme Court (School of Law), Pennsylvania Department of Education (Center for Education), Pennsylvania Department of Welfare (Child Development Center), Pennsylvania Private School Board (Center for Education).

Widener’s nursing programs are accredited by the Commission on Collegiate Nursing Education (CCNE). The bachelor of science in nursing program and the master of science in nursing family nurse practitioner program are approved by the Commonwealth of Pennsylvania State Board of Nursing, which has the authority to establish standards for the operation and approval of the programs.

HONOR SOCIETIES
National and international honor societies with chapters at Widener are Alpha Chi, scholastic honor society; Alpha Mu Gamma, modern languages; Alpha Phi Sigma, criminal justice; Alpha Psi Omega, dramatics; Alpha Sigma Lambda, adult student honor society; Beta Alpha Psi, financial information professionals; Beta Beta Beta, biology; Beta Gamma Sigma, AACSB accredited business programs; Chi Alpha Epsilon, academic development; Eta Sigma Delta, hospitality management; Kappa Delta Pi, education; Kappa Theta Epsilon, cooperative education; Lambda Pi Eta, communication studies; Omega Chi Epsilon, chemical engineering; Omicron Delta Epsilon, economics; Omicron Delta Kappa, leadership; Phi Alpha, social work; Phi Alpha Theta, history; Phi Beta Delta, international scholars; Phi Eta Sigma, freshman honor society; Phi Kappa Phi, scholastic honor society; Phi Lambda Upsilon, chemistry; Pi Gamma Mu, social science; Pi Sigma Alpha, political science; Psi Chi, psychology; Sigma Pi Sigma, physics; Sigma Tau Delta, English; Sigma Theta Tau, nursing; Tau Beta Pi, engineering; School of Business Administration Honors Program; School of Nursing Honors Program; and Widener University Honors Program in General Education.

ADMISSIONS
REQUIREMENTS
Admission to Widener University is considered competitive. Applicants undergo individual evaluation to determine their potential for academic success. The university bases its decision on the strength of academic preparation, achievement, recommendations, extracurricular activities, personal qualifications, and the pattern of testing on the Scholastic Assessment Test (SAT I) of the College Entrance Examination Board (CEEB) or the American College Test (ACT).
Excluding those being considered for enrollment in special programs, candidates for admission must be graduates of approved secondary schools. Applicants should also meet additional recommendations for specific degree programs.

Widener University has endeavored to comply with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990 by making its facilities accessible to handicapped students. It is the policy of the university not to discriminate against the disabled in its admission procedures or educational programs. The university makes every effort to integrate disabled and handicapped students into all areas of campus life. Support services are designed to enhance opportunities for student independence. These include liaisons between faculty, staff, counselors, other students, and outside groups, as well as assistance with obtaining housing, meals, tutoring/reading assistance, parking, class scheduling, etc. For information, call the Office of Student Life at 610-499-4385.

FRESHMAN PROCEDURES

Widener University operates under a rolling admission policy and generally, students will hear their admission decision within 2 to 4 weeks of when their application is complete. Priority consideration for merit scholarships will be given to early applicants.

Upon acceptance, students are requested to pay a $200 deposit to hold a place. Resident students are requested to pay an additional $100 to reserve a room in the residence halls. The university adheres to the candidate reply date of May 1 and deposits are credited toward the first semester’s bill. Late applicants are admitted on a space-available basis and given an alternate deposit deadline.

Students accepted for admission receive medical forms to be completed by their family physician.

All acceptances to the university are considered provisional, pending the certification of graduation with a satisfactory record from secondary school.

HOW TO APPLY

1. To request an application, interview appointment, or information, contact: Office of Admissions, Widener University, One University Place, Chester, PA 19013-5792, or phone 610-499-4126 or toll free 888-Widener (943-3637), or visit our website at www.widener.edu.

2. Complete the application form and return it with the $35 application fee (nonrefundable) to the Office of Admissions. Make checks or money orders payable to Widener University. The fee will be waived for those who apply directly online at www.widener.edu.

3. Give the Secondary School Report (inside the application form) to the principal or guidance counselor at your school. The completed form should be returned directly to Widener along with an official transcript.

4. Take the necessary College Entrance Examination Board (CEEB) tests and have the results sent to Widener. (See “Required Tests.”)

REQUIRED TESTS

All applicants for admission are required to take either the Scholastic Assessment Test (SAT I) of the College Entrance Examination Board or the American College Test (ACT) of the American College Testing Program. Normally, students take one of these tests in the latter part of their junior year and repeat it in November or December of their senior year. The SAT I writing section is optional and is not a requirement for admission. The SAT II subject tests are not required but are helpful in terms of placement and guidance.

Application forms for the CEEB test may be obtained from high school guidance departments or by writing to: Educational Testing Service, College Board Division, Box 592, Princeton, NJ 08540; or Box 1025, Berkeley, CA 94701. Students can also register online at www.collegeboard.com. When applying for the tests, applicants should request that their scores be reported to Widener University, No. 2642.

CAMPUS VISITS

Prospective students are encouraged to arrange for an information session and tour of the campus. In the case of great travel distance, students may arrange an appointment with an admissions counselor via phone.

The Office of Admissions is open daily from 9:00 a.m. to 5:00 p.m. Please visit our website at www.widener.edu/admissions/openhouses.asp for the most current visit schedule. On Saturdays, the Office of Admissions hosts a group information session and campus tour at 10:00 a.m. Please make an appointment in advance to avoid delays or disappointments. In the event that it becomes necessary to cancel an appointment, please notify the Office of Admissions by calling 610-499-4126 or toll free at 1-888-Widener (943-3637).

EARLY ADMISSION

Generally speaking, most students are well advised to complete their senior year of secondary school rather than bypassing it in favor of early admissions into college. However, there are exceptions each year, and those students who clearly are ready for college without having completed secondary school are welcome at Widener and are eligible for early admission. An interview is required of all early admission applicants.

HOME SCHOOL STUDENTS

Home school students are encouraged to apply for admissions and are required to submit a curriculum validation along with their completed application. An interview is also strongly recommended.

BASIC CURRICULUM

REQUIREMENTS FOR ADMISSION

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>4</td>
</tr>
<tr>
<td>History/Social Science (4 recommended)</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics (4 recommended)</td>
<td>3</td>
</tr>
<tr>
<td>Algebra I, II</td>
<td></td>
</tr>
<tr>
<td>Plane Geometry</td>
<td></td>
</tr>
<tr>
<td>Trigonometry/Pre-Calculus</td>
<td>5</td>
</tr>
<tr>
<td>Physics/Earth Science</td>
<td></td>
</tr>
<tr>
<td>Biology</td>
<td></td>
</tr>
<tr>
<td>Chemistry (required for Engineering and Nursing majors)</td>
<td>2</td>
</tr>
<tr>
<td>Foreign Language</td>
<td></td>
</tr>
<tr>
<td>Electives</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>18</td>
</tr>
</tbody>
</table>

**Engineering students should at minimum have 4 units of math and science including chemistry and pre-calculus. Equivalent studies under other names will be accredited. The extent of background training and mastery is the determining factor. It is recognized, e.g., that many schools are now giving college preparatory mathematics under such titles as Math IV or Math XII. All such mathematics will be fully credited.

ADVANCED PLACEMENT CREDIT

While credit granted for achievement through the College Entrance Examination Board’s (CEEB) Advanced Placement Program will vary according to the area in which a student has been tested, generally some credit will be granted to any student scoring three or higher on one of the examinations. The test is scored on a one-to-five basis with five as the highest score. A list of examinations and scores acceptable for college credit can be obtained through Widener’s Office of Admissions or website.

Since students may accumulate substantial college credit prior to enrollment at Widener, it is recommended that exceptional high school students carefully consider this beneficial opportunity.
Students concurrently enrolled in high school and college must submit official transcripts in order to receive transfer credits.

TRANSFER PROCEDURES

Widener University welcomes students who wish to transfer from other colleges and universities. Transfer students are given the same consideration as other students for financial aid and campus housing. Students must achieve a minimum cumulative grade-point average (GPA) of 2.00 and 12 credits of academic work to be considered for admission. Students who have completed less than 12 credits must submit a high school transcript and standardized test scores. Applicants for the nursing program must achieve a minimum cumulative GPA of 3.00 for consideration.

After completing the admission application and sending all academic transcripts, accepted students will receive complete information on the transferability of their college courses. This information enables students to calculate the number of remaining credits required in their degree program. Following receipt of the acceptance materials, the student is instructed to arrange an appointment with their academic advisor to discuss transfer credit and schedule classes. Please note, students who do not disclose prior college records in their admission application are subject to dismissal at any future time when prior attendance is discovered.

Transfer students are required to complete 50 percent of their major courses at Widener to graduate. Credit by examination via a "Challenge Examination" prepared by Widener faculty for Widener students may be included in the 50 percent. However, credit by examination via Advanced Placement or CLEP testing may not be included in the 50 percent. A maximum of 64 credits may be transferred from a two-year college. Students must earn a grade of C or better for credit to be transferred into Widener.

Students holding the associate’s degree in a transfer program are generally admitted with junior status as long as there are no D grades in the major or related field courses.

Transfer students should also familiarize themselves with the residency requirements discussed in the “Academic Policies, Procedures, and Programs” section of this Catalog.

Students who are already matriculated at Widener and are interested in taking coursework elsewhere for transfer credit should see page 20, “Transfer of Credit after Matriculation.”

INTERNATIONAL STUDENTS

The university invites the matriculation of students from other nations and is authorized under federal law to issue SEVIS form I-20 for visa application and to enroll nonimmigrant alien students. A specific “International Student Application” is provided in both electronic and paper forms for use by all international applicants, including those who have completed their secondary education in the United States.

To be evaluated for admission, international freshman applicants must submit official secondary transcripts/academic records, in English, from all institutions attended, along with proof of graduation. If the educational system in the country of schooling requires students to take national examinations for either secondary school completion or for university entrance, official copies of those examination results must also be submitted for application consideration.

International transfer applicants—students who have attended university in either the United States or abroad—must send official university transcripts from each institution attended. Course descriptions, course catalogs, and other academic information, in English, are required for coursework to be considered for transfer credit equivalency. Applicants may be required to submit an official course-by-course credential evaluation prepared by a NACES-certified credential evaluation organization for coursework taken outside of the United States.

All international applicants must submit proof of English language proficiency. This proof can come in the form of the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS). The minimum required TOEFL IBT (Internet-based test) score is 60, with no individual score lower than a 15, and the minimum required TOEFL PBT (paper-based test) score is 500. The minimum IELTS band score for admission is 5.5. Official score reports can be forwarded to Widener University using the school code 2642.

The university also offers students the opportunity to complete their English studies on-campus through a partner institution, the Pennsylvania Language Institute (PLI). PLI classes begin every four weeks, year round. Classes are provided at nine levels, six hours per day, in four-week sessions. Students who complete Level 9 at PLI will have their TOEFL/IELTS requirement waived.

Students who have strong academic credentials but need to improve their English language skills can apply for conditional admission to Widener University and to PLI at the same time. Students can receive conditional admission from Widener while they study on the I-20 issued by PLI. Conditionally admitted students may begin full-time academic coursework when they complete PLI Level 9. For more information, please contact PLI at 610-499-4550 or visit their website at www.thelanguagecompany.com/pli.html.

Neither the SAT (Scholastic Aptitude Test) nor the ACT (American College Test) are required for admission, but freshman applicants are recommended to submit scores for these tests, especially for merit-based scholarship consideration. Letter(s) of recommendation are also not required, but recommended for admissions consideration. More information can be found online at www.widener.edu/admissions.

To receive an I-20, international students must provide official documentation proving their ability to fund all educational expenses. Bank statements, letters from financial institutions, and other forms are all acceptable. These documents are only valid for six months from the time of issue and must show that all educational and living expenses are accounted for during the first year of study. Students are not required to submit financial documentation until they choose to enroll in Widener University and an I-20 is ready to be issued.

All single undergraduate students are required to live in university housing and will be admitted as resident (boarding) students. Students who wish special consideration due to religious or dietary requirements must submit a written request for exemption from the residency rule.

For additional information, contact the Office of Admissions.

ALTERNATIVE ENROLLMENT PROGRAMS

SECONDARY STUDENT HONORS PROGRAM

In cooperation with local secondary schools, Widener extends an invitation to outstanding high school students to enroll in courses that are part of the regularly scheduled offerings of the university during the summer sessions. The program encourages superior scholarship and rewards demonstrated ability with an opportunity for advanced work not available in the secondary school.

A minimal charge is made for tuition and laboratory fees. Work completed under the program is accepted as college credit at Widener and is recommended as such to other institutions. For more information, contact the Office of the Associate Provost for Undergraduate Academic Affairs.

SPECIAL STUDENTS

Normally a student entering Widener is matriculated as a candidate for a degree. Occasionally, someone may wish to take a course without being a candidate for a degree. For example, someone with a bachelor’s degree may wish to take education courses that are needed for certification as a high school teacher. All such students are categorized as ‘special students.’ See the “Financial Information” section for costs related to this status.
FINANCIAL AID

The information contained in this section is subject to change or modification as state and federal regulations and/or institutional policies are revised.

Student Financial Services Office
Lipka Hall: 9:00 a.m. – 5:00 p.m.
Phone: 610-499-4161 Fax: 610-499-4687
E-mail: finaidmc@mail.widener.edu

OVERVIEW

Widener University participates in a wide variety of financial aid programs to assist students and their families in paying for their post-secondary education. These include scholarships, grants, and work programs funded by the university, as well as assistance from state and federal programs and private resources. Over 85 percent of Widener’s full-time, undergraduate students receive some type of financial assistance. Students may qualify for academic-based scholarships, need-based assistance, or both.

ACADEMIC-BASED SCHOLARSHIPS

Widener University offers academic-based scholarships through the Widener Scholarship Program. Awards are based on academic achievement and/or extracurricular activities, high school involvement, community service, and donor-specified criteria. Eligibility is determined by the Office of Admissions based on information provided on the admissions application. No separate application is necessary.

PRESIDENTIAL SERVICE CORPS
(A BONNER LEADERS PROGRAM)

Students who are invited to join the Presidential Service Corps (PSC) are eligible for a PSC leadership award of $5,000 per year, in addition to any need-based financial aid or academic-based scholarships up to the amount of full tuition. Once identified in the top 10 percent of accepted students, qualified individuals will receive an invitation from Widener University to submit a Leadership Application. Widener will invite finalists to attend a dinner reception at the end of February and the selection process will occur in March. To sustain the award, PSC members must maintain a minimum GPA of 2.75 and satisfy 300 hours of service per year. Students are required to perform service in the local community, attend service leader meetings, participate and support Widener service events and programs, and act as a positive representative of the Widener University community.

MUSIC SCHOLARSHIPS

Music scholarships are available to entering students with outstanding musical abilities. Awards are made on the basis of audition. Renewal of these scholarships requires continued musical growth, maintaining the minimum required GPA, acceptable performance of duties and requirements, and full involvement in the wind or string program. Private lessons are required. Application is made through the Music Department. Candidates must have the specific endorsement of the high school director of music.

NEED-BASED ASSISTANCE

Student Financial Services welcomes all requests to discuss financial aid planning and is available to assist in the application process for need-based aid. Through a combination of federal, state, and institutional resources, Student Financial Services offers aid packages to students and families who are unable to meet the full cost of attendance with their own resources. Need-based assistance is intended to supplement, not replace, the family’s contribution. A simple equation illustrates how this works:

\[
\text{Cost of Attendance} - \text{Expected Family Contribution} = \text{Financial Need (potential aid eligibility)}
\]

Cost of Attendance is determined annually from actual tuition and fees, a weighted average of room and board charges, and averaged costs of books and supplies, personal expenses, and student loan fees.

Expected Family Contribution is the amount the student and the family are expected to contribute toward the cost of attendance. The federal family contribution is determined from information the student and family provide on the Free Application for Federal Student Aid (FAFSA). The reported information is subjected to a formula established by the U.S. Congress. All schools are required to use the results of the federal need analysis formula from the FAFSA to determine eligibility for federal student assistance. Widener Student Financial Services uses the information from the FAFSA to determine eligibility for need-based aid from the university.

Each year Widener University establishes a policy of awarding need-based financial aid that takes into consideration annual allocations of federal student assistance, university funds, and anticipated enrollment. Guidelines are established to determine the best method of meeting students’ needs, and a formula for distributing a financial aid “package” is approved. Undergraduate applicants for need-based aid are expected to apply for their state’s grant program (for students from PA, DE, CT, MA, VT, RI, ME, OH, or the District of Colombia), the Federal Stafford Loan, and any other aid for which they might be eligible. The amount of Stafford Loan is included in the package, but there is no penalty if the student elects not to borrow. When or if a student rejects or fails to apply in a timely manner for a need-based aid program for which the student would be eligible, the university is unable to replace the funds with institutional aid.

Priority for federal campus-based and Widener funds is given to full-time students who complete the application process in a timely fashion. On a limited basis, students enrolled less than full time with exceptional need may also be considered.

To receive aid from the federal programs, the student must:

- have financial need, except for Federal Plus and Unsubsidized Federal Stafford Loan programs.
- have a high school diploma or a General Educational Development (GED) certificate.
- be enrolled or accepted for enrollment as a regular student working toward a degree or certificate in an eligible program.
- be a U.S. citizen or eligible noncitizen.
- sign a statement on the FAFSA certifying that the student is not in default on a federal student loan and does not owe money back on a federal grant.
- have a valid Social Security Number.
- register with Selective Service, if required.
- make satisfactory academic progress.
- sign a statement on the FAFSA that the funds will be used for educational purposes.

If substantial need still remains after federal aid and Widener funds have been awarded, Student Financial Services will inform the student about alternative sources of funding such as the Federal PLUS Program. Students must reapply for financial aid each year. The amount of assistance from the university may increase or decrease from one year to the next depending on the family’s financial circumstances, the availability of funds, and federal and state regulations.

Widener is a NCAA Division III institution and does not award financial aid to any student-athlete based on athletic ability. The administration of financial aid based upon need and/or academic ability without the consideration of athletic ability or participation is a principle fundamental to Division III athletics.
MINIMUM SATISFACTORY ACADEMIC PROGRESS FOR CONTINUANCE OF FINANCIAL AID

FEDERAL AND INSTITUTIONAL AID
To receive Federal Title IV and institutional financial aid, students must progress toward the completion of their program of study at a rate that will ensure graduation in a reasonable length of time. Widener University has established a minimum standard that measures academic progress both quantitatively (credit hours) and qualitatively (grades) at the end of each semester.

Students must meet the following minimum academic progress standards to receive Federal Pell Grant, Federal SEOG, Federal Work Study, Federal Perkins Loan, Federal Stafford Loan, Federal PLUS, and Widener institutional funds.

QUANTITATIVE MEASUREMENT
Undergraduate students must successfully complete a minimum of 67 percent of the total credits attempted while enrolled at Widener. Successful completion is based on the percentage of total (i.e., cumulative) credit hours attempted compared to the total credit hours completed. Earned credits for a course cannot be counted more than once. Grades of “I” (Incomplete), “W” (Withdrawal), “F” (Failure), and “NP” (No Pass) count as credits attempted but do not count as credits completed. For a full definition of attempted and completed credits, please contact the Student Financial Services Office.

QUALITATIVE MEASUREMENT
Undergraduate students must achieve the cumulative grade-point average (GPA) below:

<table>
<thead>
<tr>
<th>Credit Hours</th>
<th>Minimum GPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.5 or fewer</td>
<td>1.70</td>
</tr>
<tr>
<td>16 - 30.5</td>
<td>1.80</td>
</tr>
<tr>
<td>31 - 60.5</td>
<td>1.90</td>
</tr>
<tr>
<td>61 and more</td>
<td>2.00</td>
</tr>
</tbody>
</table>

An undergraduate student who fails nine credits in one semester may be dismissed for academic failure.

MAXIMUM TIME FRAME REQUIREMENTS
The maximum time to complete the credits required for graduation is measured in credit hours attempted. The maximum time frame may not exceed 150 percent of the published length of the academic program. The maximum time frame for a transfer student may not exceed 150 percent of the published length of the program minus the number of credits accepted for transfer at the point of matriculation.

MEASUREMENT OF PROGRESS
Academic progress is measured in May at the end of each academic year. A student who has failed to make progress by either or both of the qualitative (GPA) or quantitative (credits) standards will lose eligibility for financial aid. A mid-year warning after fall grades are in will be issued for students who do not appear to be meeting the minimum standards. A student who has exceeded the maximum time frame for degree completion will lose eligibility for federal and university aid programs. There is no appeal for exceeding the maximum time frame.

DISMISSAL, SUSPENSION, AND READMISSION
Academically dismissed students are ineligible for financial aid. Students who are suspended are ineligible for financial aid during the term(s) of their suspension. Academic readmission to Widener University does NOT automatically grant reinstatement of financial aid eligibility. All dismissed students must appeal to regain their financial aid eligibility.

REINSTATEMENT
Reinstatement of financial aid eligibility is possible once a student has earned 67 percent of total credit hours attempted and achieved the required GPA, either at his or her own expense or by completing unfinished class assignments, except when aggregate hours are the cause of ineligibility. A student is responsible for making certain that the completed credits and grades have been properly posted with the university registrar before requesting reinstatement of financial aid. To request reinstatement, the student may either submit the “Reinstatement” form available from the Student Financial Services Office, or submit a written request accompanied by supporting documentation and an advising transcript to Student Financial Services. Requests for reinstatement should be made as early as possible after the student’s transcript has been updated.

APPEALS
A student may appeal for a waiver from the progress rules and regulations based on such mitigating circumstances as the death of a relative, a serious personal illness/injury, change of educational objective, or other extenuating circumstances. The student must be able to demonstrate that the illness/injury or extenuating circumstance had a direct impact on the student’s academic performance. Applications are available from the Student Financial Services Office and on Widener’s website. Students who fail to meet the minimum standard must submit an application for appeal. Appeals should be submitted to Student Financial Services with supporting documentation for review by the Appeals Committee by July 1 for the fall semester. Students will be notified, in writing, of the committee’s decision. The student must comply with any and all conditions attached to the waiver of the academic standard to continue to receive financial aid.

WIDENER UNIVERSITY FUNDS
In addition to meeting the minimum academic progress standard, students must be enrolled full-time and conduct themselves properly to receive funds from Widener University. If extracurricular activity is required as a condition of the grant, satisfactory performance is necessary.

STANDARDS OF ACADEMIC PROGRESS FOR THE PENNSYLVANIA STATE GRANT PROGRAM
Pennsylvania Higher Education Assistance Agency (PHEAA) has its own academic progress policy for students who receive Pennsylvania state grants. To continue to receive a Pennsylvania state grant, a student must meet the state’s policy. PHEAA sends a copy of its policy to each state grant recipient. In brief, a student is required to successfully complete a minimum of 12 credits per semester for each full-time state grant received and a minimum of 6 credits per semester for each part-time state grant received. Academic progress for the continuation of state grant is measured at the end of the spring semester. A full copy of PHEAA’s policy is also available upon request from the Student Financial Services Office.

HOW TO APPLY
To apply for need-based financial aid at Widener University, students must complete the Free Application for Federal Student Aid (FAFSA). New students and transfer students are encouraged to apply as soon as possible after January 1. Priority is given to completed applications received by the Student Financial Services Office by March 1. If requested, students must submit supporting documents necessary to complete their application requests.

Students can get the FAFSA from the Student Financial Services Office or online at www.fafsa.ed.gov. More information on applying for aid can be found in the financial aid section of the Widener University website at www.widener.edu/sfs.
FEDERAL AID PROGRAMS
The rights and responsibilities of students receiving financial assistance under the Higher Education Assistance Act and a statement of the federal requirements for the return of grant or loan assistance provided thereunder is set forth in the Financial Aid Handbook, available on the Student Financial Services website.

FEDERAL PELL GRANT is a federally administered program that awards grants to undergraduate students on the basis of exceptional need. The amount available is subject to federal fiscal year appropriations. Eligibility is limited to students who have not earned a bachelor’s degree.

FEDERAL SUPPLEMENTAL EDUCATIONAL OPPORTUNITY GRANT (FSEOG) is a federal campus-based program for undergraduate students who demonstrate exceptional need. Priority is given to Pell Grant recipients. The amount of the award depends on the student’s need, the availability of funds, and the amount of other aid received. Eligibility is limited to students who have not earned a bachelor’s degree.

FEDERAL PERKINS LOAN is a federal campus-based, low-interest loan (5 percent) made to students with exceptional need who have not earned a bachelor’s degree. The amount of loan Widener University includes in its financial aid package depends on the applicant’s need and the availability of funds. The Federal Perkins Loan is interest free during the time the student maintains at least half-time enrollment.

For each year funds are received, the student must sign a promissory note agreeing to repay the loan. Repayment of the loan begins 9 months after the student graduates, withdraws, or enrolls less than half time. You may have longer than nine months if you are on active duty with the military. Monthly payments are a minimum of $40 and are scheduled over a maximum 10-year period.

Prior to receiving a Federal Perkins Loan, students must attend entrance loan counseling during which they are informed of their rights and responsibilities as a borrower. Before leaving school, students must attend an exit interview during which they are given a loan repayment schedule and other important information concerning repayment of the Perkins Loan (see table).

Under certain circumstances, Perkins Loan repayment may be cancelled or deferred. A complete list of cancellation and deferment provisions is provided during the exit and entrance interviews. Students who wish to view these materials may request them from the Student Financial Services Office or the Perkins Loan Office.

FEDERAL WORK STUDY (FWS) is the opportunity to earn funds through employment and is awarded as part of the student’s aid package. The amount of FWS awarded represents a maximum eligibility amount determined by Student Financial Services. Students may work up to 15 hours per week during any week in which classes are held and up to 40 hours per week during vacation periods. Actual earnings depend on the number of hours worked and the wage rate, but may not exceed the FWS award amount. The wage rate starts at $7.25. The rights and responsibilities of students receiving financial assistance pursuant to federal work-study programs and a statement of the federal requirements for the return of assistance provided thereunder is set forth in the Financial Aid Handbook, available on the Student Financial Services website.

FEDERAL STAFFORD LOANS are low-interest, federally insured loans issued by banks and other lenders. Repayment of the loan principal and interest generally begins six months after the student graduates or ceases at least half-time enrollment, whichever occurs first (see table). Federal Stafford Loans are either subsidized or unsubsidized.

Subsidized Stafford Loans are awarded to students who demonstrate financial need according to federal criteria. The federal government subsidizes the interest on the loan until the student begins repayment and during periods of deferment.

Unsubsidized Stafford Loans are available to students who do not demonstrate financial need but require funds to help meet their educational cost of attendance. The borrower is responsible for the interest while enrolled in school and during periods of deferment. The borrower may choose to pay the accrued interest or to allow the lender to capitalize the accumulated interest. Under capitalization, the accrued interest is added to the loan principal and increases the amount the borrower will repay.

A student who does not qualify for a fully subsidized Stafford Loan may borrow the remainder of their grade level eligibility through the unsubsidized loan program. In addition, independent undergraduate students, or dependent undergraduate students whose parents are denied a Federal PLUS Loan, may borrow additional unsubsidized Stafford Loans.

For all undergraduate students, the annual loan limit must be prorated when the remainder of the student’s degree program is less than an academic year. Student Financial Services will estimate the maximum amount of a student’s Stafford eligibility and notify the student on the Financial Aid Agreement. The aggregate maximum dependent undergraduates may borrow is $23,000. Independent undergraduates may borrow an aggregate maximum of $46,000 (including a maximum of $23,000 of subsidized loans).

First-time borrowers must complete an entrance interview before their loan funds can be credited. Prior to leaving school, students must attend an exit interview during which they are given information about loan repayment as well as other important information concerning repayment of Stafford Loans.

### FEDERAL PERKINS LOAN MONTHLY PAYMENTS AT 5% OVER 10 YEARS

<table>
<thead>
<tr>
<th>Total Loan Amount</th>
<th>Interest Charges</th>
<th>Number of Payments</th>
<th>Total Repaid</th>
<th>Monthly Payment</th>
</tr>
</thead>
<tbody>
<tr>
<td>$4,500</td>
<td>$1,227.60</td>
<td>120</td>
<td>$5,727.60</td>
<td>$47.73</td>
</tr>
<tr>
<td>9,000</td>
<td>2,455.20</td>
<td>120</td>
<td>11,455.20</td>
<td>95.46</td>
</tr>
<tr>
<td>18,000</td>
<td>4,910.40</td>
<td>120</td>
<td>22,910.40</td>
<td>190.92</td>
</tr>
</tbody>
</table>

Typical monthly payments and total interest charges over a 10-year period based on 5 percent interest rate.

### FEDERAL STAFFORD LOAN MONTHLY PAYMENTS AT 8.25% OVER 10 YEARS

<table>
<thead>
<tr>
<th>Total Indebtedness</th>
<th>Interest Charges</th>
<th>Number of Payments</th>
<th>Total Repaid</th>
<th>Monthly Payment</th>
</tr>
</thead>
<tbody>
<tr>
<td>$2,600</td>
<td>$628.42</td>
<td>65</td>
<td>$3,228.42</td>
<td>$50.00</td>
</tr>
<tr>
<td>5,000</td>
<td>2,358.97</td>
<td>120</td>
<td>7,358.97</td>
<td>61.33</td>
</tr>
<tr>
<td>7,500</td>
<td>3,538.80</td>
<td>120</td>
<td>11,038.80</td>
<td>91.99</td>
</tr>
<tr>
<td>10,000</td>
<td>4,718.00</td>
<td>120</td>
<td>14,718.00</td>
<td>122.65</td>
</tr>
<tr>
<td>15,000</td>
<td>7,077.60</td>
<td>120</td>
<td>22,077.60</td>
<td>183.98</td>
</tr>
</tbody>
</table>

Typical monthly payments and total interest charges over a 10-year period based on 8.25 percent interest rate.
Stafford Loans may be cancelled or deferred if students meet certain federally defined criteria. A complete list of cancellation and deferment options is provided during the entrance and exit interviews. Students who wish to view these materials may request them from the Student Financial Services Office.

**FEDERAL PARENT LOAN FOR UNDERGRADUATE STUDENTS (PLUS)** is a federal loan designed to assist parents of dependent students in meeting educational expenses. Parents may borrow up to the cost of attendance minus other financial aid each academic year for each dependent student enrolled at least half time. PLUS borrowers do not have to demonstrate need or file a FAFSA; however, other financial aid received is taken into consideration.

**STATE AID PROGRAMS**

**STATE GRANTS**—Each state has its own grant program, as well as its own award levels and eligibility criteria. Generally, state grants are awarded on the basis of need and limited to students attending school within their own state of residence. However, if a reciprocity agreement exists between two states such as Pennsylvania and Delaware, students may use the grant in the reciprocal state. All financial aid applicants who are residents of PA, DE, CT, MA, VT, RI, ME, OH, or the District of Columbia are expected to apply for their state’s grant. For information about your state’s reciprocity agreement and application instructions, contact your state agency.

**INSTITUTIONAL AID & SCHOLARSHIPS**

Grant-in-Aid is available each year to new and returning full-time students who demonstrate need. Grant-In-Aid funds are also used as matching funds for federal aid programs in which a student may participate. Assistance is limited to eight semesters for bachelor’s degree candidates and four semesters for associate’s degree candidates. Eligibility is limited to students who have not already earned a bachelor’s degree.

**Widener Employment** is funded from university resources. Students may work up to 15 hours during any week in which classes are held and up to 40 hours per week during vacation periods. (Contact the Office of Student Financial Services for information.)

**Widener Scholarships**—Each year, Widener offers a number of scholarships to academically talented students. These scholarships, ranging from $4,500 to full tuition, are awarded solely on the basis of merit. Each applicant is automatically reviewed for consideration for all awards for which he or she may be eligible, with the exception of the full-tuition Widener Scholarship. To be considered for the Widener Full Tuition Scholarship, applicants must apply to the university no later than February 15 and have a minimum combined SAT I score of 1350, a grade point average of 3.8, and a high school rank in the top 10 percent of the graduating class. An interview with the Office of Admissions is also required. Widener University scholarships are renewable subject to academic performance and are offered to entering freshmen only.

**African American Scholarship**—This scholarship is designed to assist African American students. Awards provide assistance to students with or without financial need to attract and retain students with outstanding academic or other non-athletic achievements.

**A. Groffaldfer Memorial Endowed Scholarship Fund**—Named in honor of a dedicated and longtime member of the College of Arts and Sciences faculty, this partial scholarship is awarded to an incoming freshman declaring a major in the arts and sciences, with preference given to a student declaring a specific major in the sciences. Recipients must demonstrate academic merit as well as financial need. The scholarship is renewable provided the student is making satisfactory progress toward the baccalaureate degree.

**The Bac C. Al-Saleh Memorial Undergraduate Nursing Scholarship**—Established by Conrad ’55 and Sheilagh Karl in memory of Laila Al-Saleh, this partial scholarship is awarded annually to a rising senior undergraduate in the School of Nursing. The recipient must demonstrate financial need and a commitment to community service.

**Alumni Engineering Scholarship**—This partial scholarship, created by an alumnus, is awarded to a student majoring in engineering in consideration of his/her contribution to college life and of financial need. A recipient may receive this scholarship more than once.

**The American Legion Smith Howard Post #93 Senior ROTC Cadet Scholarship Fund**—Established by the American Legion’s Smith Howard Post #93 of Media, Pennsylvania, this partial scholarship is awarded to a rising senior undergraduate in the U.S. Army’s ROTC program who demonstrates financial need. Through participation in various campus-based ROTC programs, the recipient shall exhibit high-level achievement as well as demonstrate leadership potential. Preference shall be given to a resident of Delaware County, Pennsylvania. Amount and frequency of the award is determined by financial considerations.

**Greta Jean Anderson Scholarship**—This partial scholarship was created in memory of Greta Jean Anderson, a graduate of Brandywine College, 1988. It is awarded annually to a female sophomore majoring in management. Emphasis is placed on academic performance and community service. The scholarship is renewable.

**Alvin M. Andorn Scholarship**—Funds for scholarships and grants-in-aid are awarded to students in the School of Business Administration through the generosity of the late Alvin M. Andorn who was a member of the Board of Trustees for ten years.

**The Association for Operations Management (APICS) Scholarship**—This partial scholarship is awarded to a junior enrolled in the School of Business Administration who is chosen for excellent academic performance in the area of operations management.

**William R. Bailey Scholarship**—Created by William R. Bailey ’54, at least one partial scholarship is awarded to a sophomore or upperclassman with a declared major in one of the science curricula who demonstrates financial need. The awardee is chosen with the input of the dean of the College of Arts and Sciences. The scholarship is renewable.

**The Dr. Charles L. Bartholomew Scholarship**—This partial scholarship is awarded to a second year civil engineering student in good academic standing who demonstrates outstanding communication skills.

**Harry P. Bartow Scholarship**—Established by the estate of Mrs. Marian C. Bartow, this award is given annually to a deserving graduate of a public high school in Delaware County, Pennsylvania.

**Mrs. Marian C. Bartow Scholarships**—These partial scholarships are awarded to deserving young people residing in Delaware County, Pennsylvania. The scholarships are funded by the income from a trust established for this purpose.

**The Bergeman Family Endowed Scholarship**—Established by Richard P. Bergeman ’62, this renewable partial scholarship is awarded annually to a student with an excellent academic record who demonstrates financial need. Preference shall be given to students enrolled in the School of Business Administration. Additional preference may be given to a minority or female student.

**Richard P. Bergeman ’62 Endowed Scholarship**—This renewable partial scholarship is awarded to an academically above average student in the School of Business Administration or Engineering with preference to an incoming freshman. The recipient is to be from Delaware County, Pennsylvania.

**Professor E. Randy Biddle Scholarship**—Created in memory of longtime Widener faculty member Edmund “Randy” Biddle, this partial scholarship assists students majoring in English who...
have achieved academic merit and demonstrated financial need. **Blizzard MacQueen Endowed Scholarship**—Established by Frank Blizzard '53, '70, this partial scholarship is awarded to an undergraduate student with an outstanding academic record who demonstrates financial need. Preference shall be given to residents of Upland, Pennsylvania.

**The Dr. Leo Blumberg Engineering Scholarship**—This partial scholarship is awarded to a student entering the senior year who has been outstanding in theoretical studies and practical application of engineering concepts.

**James E. Bowen '49 Endowed Scholarship**—Established by James E. Bowen '49, this partial scholarship is awarded to an entering freshman exhibiting academic merit and financial need. The scholarship is renewable. Amount and frequency of award is determined by financial considerations.

**Bowlby Accounting Endowed Scholarship**—Established by G. Robert and Barbara Bowlby, this renewable, partial scholarship is awarded annually to a sophomore or upperclassman in the School of Business Administration managing in accounting. The recipient shall be making appropriate academic progress and demonstrate financial need.

**Ruth C. Bragg Scholarship**—Created by 1957 PMC graduate Russell Bragg, this partial scholarship is awarded to female School of Business Administration students who are in their junior or senior year and have demonstrated academic achievement and financial need.

**Robert J. and Judith G. Bruce Endowed Scholarship**—Established by Robert J. and Judith G. Bruce, this partial scholarship is awarded to a sophomore who demonstrates outstanding academic achievement as well as financial need and is renewable. Amount and frequency of the award is determined by financial considerations.

**Chris A. Campana Memorial Scholarship**—Created in memory of Christopher A. Campana '91, this partial scholarship is awarded annually to a sophomore or upperclassman in the School of Business Administration, ideally specializing in management information systems. The recipient must demonstrate financial need.

**Gunard O. Carlson Scholarship**—An annual partial scholarship is given to a needy student who has shown academic or creative promise.

**Children of Active & Reserve Military Personnel Educational Scholarship (Widener CARES)**—This scholarship is available to all dependent children whose parent was a member of the U.S. Armed Forces and was killed in action in either Operation Enduring Freedom or Operation Iraqi Freedom. The current scholarship total per applicant is $25,000 per year or $100,000 total, which covers the entire cost of tuition at Widener University.

**Seung W. Choi Endowed Scholarship**—Created by Seung W. Choi '67, at least one partial scholarship is awarded annually to an international student who demonstrates academic merit as well as financial need. Preference will be given to students from Korea or to Korean American students.

**Class of 1985 Endowed Scholarship**—Established by members of the undergraduate class of 1985, this partial scholarship is awarded annually to an undergraduate for his/her senior year. The recipient shall demonstrate financial need and academic merit.

**Class of 1986 Endowed Scholarship**—Established by members of the undergraduate class of 1986, this partial scholarship is awarded annually to an undergraduate for his/her senior year. The recipient shall demonstrate financial need and academic merit.

**Class of 1988 Endowed Scholarship**—Established by members of the undergraduate class of 1988, this partial scholarship is awarded annually to an undergraduate for his/her senior year. The recipient shall demonstrate financial need and academic merit.

**Class of 1989 Endowed Scholarship**—Established by members of the undergraduate class of 1989, this partial scholarship is awarded annually to an undergraduate for his/her senior year. The recipient shall demonstrate financial need and academic merit.

**Class of 1990 Endowed Scholarship**—Established by the members of the undergraduate class of 1990, this partial scholarship is awarded annually to an undergraduate for his/her senior year. The recipient shall demonstrate financial need and academic merit.

**Class of 1992 Endowed Scholarship**—Established by members of the undergraduate class of 1992, this partial scholarship is awarded annually to an undergraduate for his/her senior year. The recipient shall demonstrate financial need and academic merit.

**Class of 1993 Endowed Scholarship**—Established by members of the undergraduate class of 1993, this partial scholarship is awarded annually to an undergraduate for his/her senior year. The recipient shall demonstrate financial need and academic merit.

**Class of 1994 Endowed Scholarship**—Established by the members of the undergraduate class of 1994, this partial scholarship is awarded annually to an undergraduate for his/her senior year. The recipient shall demonstrate financial need and academic merit.

**Dr. Martin J. Collo Scholarship**—Established in memory of Martin J. Collo, a Widener University government and politics professor. This scholarship shall be awarded to a junior or senior political science student who has demonstrated high academic achievement and financial need. This scholarship is renewable.

**Annie Langham Cottee Scholarship**—Created by faculty member Col. William Langham Cottee in memory of his mother, Annie Langham Cottee, this partial scholarship is awarded to a student having successfully completed at least two semesters at Widener. The awards are based on financial need and academic excellence and are renewable.

**Donald J. Daley Scholarship**—This partial scholarship created by Donald J. Daley '87 is awarded annually to a graduate of Washington Township High School in Sewell, NJ. The recipient shall demonstrate financial need. Preference will be given to students majoring in engineering.

**Anthony D’Angelo Scholarship**—Established in memory of Anthony D’Angelo, 1993 School of Business Administration senior, this partial scholarship is awarded to an entering SBA freshman from Anthony’s alma mater, Cardinal O’Hara High School, who demonstrates strong academic skills and has participated in extracurricular activities.

**Delaware County Scholarship**—As a community service, the Board of Trustees, through the president of the university, awards two scholarships each year to residents of Delaware County. As further assistance to local residents, several service clubs in the City of Chester and the Board of Trustees award scholarships to Delaware County students. To be considered, the applicant must be a senior in a Delaware County (Pa.) high school, be in the top fifth of the class, and have the specific recommendation of the high school principal.

**The Robert P. DePaul Scholarship**—This partial scholarship is awarded to a student in the School of Hospitality Management who exhibits financial need and is drug and alcohol free.

**Distinguished Order of the Zerocrats Scholarship**—Awarded by the School of Hospitality Management, this partial scholarship assists a student majoring in hospitality management who has demonstrated academic achievement and financial need. Recipient will also have experience in the hospitality management industry.

**The John A. and Hugh-Leene Dornsife Endowed Scholarship Fund**—This partial scholarship is awarded to students majoring in arts and sciences, business, education, engineering, hospitality management, or nursing who demonstrate financial need and excellent academic merit.

**Faculty Scholarship**—Created by the faculty of Widener University, partial scholarships are awarded annually to rising juniors based on academic merit and community service. A recipient may receive this scholarship more than once.
Sebastian and Sharon Faro Undergraduate Biology Scholarship—Created by Sebastian Faro, MD, PhD ’62, this partial scholarship is awarded to an incoming freshman with a declared major in biology. The recipient should exhibit outstanding academic merit and demonstrate financial need. The scholarship is renewable provided the recipient is making satisfactory progress toward his/her degree, and continues to qualify academically and financially.

The Henry T. and Dorothy S. Feige Scholarship Fund—Created by Henry T. ’35 and Dorothy S. Feige, this partial scholarship is awarded annually to a junior or senior undergraduate majoring in environmental science. The recipient must demonstrate financial need, good academic standing, and, through academic and extracurricular activity, a strong interest in increasing the awareness of environmental protection issues within the general community.

The Francine Saylor Ferris Memorial Award—Partial scholarship for use in the senior year is presented annually in memory of Francine Saylor Ferris, a graduate of the nursing curriculum who met an untimely death in November 1972. The award is made to the nursing student who has achieved high scholastic standing in the junior year and who demonstrates the high personal characteristics necessary to enter into the nursing profession.

Albie Filoreto Scholarship—Created by John D. ’63 and Maryann ‘63 Dishaw, this partial scholarship is awarded with preference given to an incoming freshman pursuing a course of study in the College of Arts and Sciences.

The Shirley Fink Memorial Fund—This endowed fund established in memory of Shirley Fink, a 1977 graduate of the Institute of Graduate Clinical Psychology, by her family, friends, and classmates, provides a fellowship for a first year PsyD student who demonstrates both merit and financial need.

First Presbyterian Church of Chester Memorial Scholarship—Established by the First Presbyterian Church of Chester, this partial scholarship is awarded to a student from the City of Chester, Pennsylvania. The recipient shall be selected on the basis of a written essay submitted to a committee of Presbyterian Ministers.

General Adult Scholarship—Created by contributions from University College alumni, this partial scholarship is awarded to an undergraduate nontraditional student.

John L. Geoghegan ’63 Memorial Scholarship—Established by John D. ’63 and Maryann ‘63 Dishaw in memory of classmate John L. Geoghegan ’63, this partial scholarship is awarded annually to a sophomore. The recipient shall be a member of Widener University’s ROTC Pioneer Battalion and participate in university-sponsored extracurricular activities or be active in community service projects. The student shall demonstrate leadership skills and financial need.

The Constance B. Girard-diCarlo Endowed Scholarship Fund—This partial scholarship is awarded to a student entering his/her sophomore year who has successfully completed his/her freshman year with a grade point average of 3.0 and who demonstrates financial need. This scholarship is renewable if academic excellence is maintained.

Charles Gorsuch Memorial Scholarship—Established by the Charles W. Gorsuch Memorial Scholarship Fund, this scholarship is awarded to students who demonstrate academic excellence and financial need. These students will also be pursuing study in law, medicine, or the ministry.

Gureghian Family Scholarship—Established by Vahan H. Gureghian ’78 Law, partial scholarships are awarded annually to students from Chester High School who exhibit academic merit and financial need.

Gary Hales Memorial Scholarship—Established by the late Dr. Gary D. Hales, this partial scholarship shall be awarded to a student enrolled in the Institute of Graduate Clinical Psychology. The recipient will be progressing toward earning a PsyD degree and shall also demonstrate financial need.

John and Dorothy Hanna Memorial Scholarship—Established by the family of John and Dorothy Hanna, this scholarship is awarded to an upperclassman who has demonstrated excellent academic abilities as well as financial need.

Edith Hayman Scholarship—This partial scholarship gives preference to women who are nontraditional students.

George A. Hansell Jr. Scholarship—Created by George A. Hansell Jr., partial scholarships are awarded to deserving undergraduates in good academic standing who exhibit leadership qualities that will enhance their opportunity to be leaders in their fields of endeavor while contributing to the prominence of Widener University in some university activity. Awards are based on financial need and other circumstances as specified by the donor.

The James Thomas and Carolyn Sue Harris Scholarship Fund—This partial scholarship is awarded to students who actively demonstrate a commitment to community service and are making satisfactory academic progress. Preference is given to minority students. Graduate students are also eligible for this scholarship. This scholarship may be renewed to upperclassmen if they continue to maintain the eligibility criteria.

The Leona Hayman Nursing Scholarship—This partial scholarship is awarded to upperclassmen in the School of Nursing who demonstrate academic merit and financial need. Preference is given to a single parent, adult student who is a resident of the City of Chester.

James W. Hirschmann III Endowed Scholarship—This partial scholarship created by James W. Hirschmann III ’82 is awarded annually to a graduate of Archbishop Wood High School. The recipient shall have an outstanding academic record and demonstrate financial need.

E. A. Howell Open Scholarship—The Board of Trustees has authorized the annual award of one full-tuition scholarship over a four-year period to an outstanding boarding student applicant.

Huston Foundation Scholarship—This partial scholarship is awarded annually to a well qualified junior or senior who has demonstrated academic ability pursuing a degree in the School of Business Administration.

Hyatt Scholarship—Created by the estate of Edwin A. Howell to honor Col. Frank Kelso Hyatt, president of Pennsylvania Military College from 1930 to 1952, for students of financial need with preference given to residents of Delaware County, Pennsylvania.

Mathew Johnson Scholarship—At least one partial scholarship is awarded annually to a student in the School of Business Administration. The recipient(s) is chosen with the input of the Dean of the School of Business Administration.

Samuel and Hilda Karl Endowed Scholarship—Established by Conrad ’55 and Sheilaig Karl in memory of Connie’s parents, Samuel and Hilda Karl, this scholarship is awarded to a full-time senior nursing undergraduate student who exhibits outstanding academic merit and demonstrates financial need and a commitment to community service.

Lawrence S. Kucharzczuk Memorial Scholarship Fund—Established by friends and family in memory of Larry Kucharzczuk, this renewable partial scholarship is awarded to a freshman student demonstrating academic merit and financial need.

Rev. Dr. Martin Luther King Jr. Scholarship—This partial scholarship is awarded to a student from Chester Public High School who best exhibits and exemplifies the principles of Rev. Dr. Martin Luther King Jr. The recipient shall be a full-time undergraduate student in good academic standing who is active in service to the community and demonstrates financial need. This scholarship is renewable.

Mel R. Korn ’51 Endowed Scholarship in Global Marketing—Established by Mel R. Korn ’51 in honor of the outstanding achievements of President Emeritus Clarence R. Moll, this scholarship is awarded to an outstanding junior majoring in marketing,
presented in the senior academic year. The student is selected by the dean of the School of Business Administration based on a competitive paper on an innovative marketing topic. Guidelines for the paper are proposed by marketing faculty.

Eva C. Leet Endowed Scholarship in Nursing—Established by Eva C. Leet, this partial scholarship is awarded annually to an undergraduate nursing student from Atlantic or Cape May Counties, New Jersey, who demonstrates financial need. Preference will be given to an employee or child of an employee of The Shores at Wesley Manor, Ocean City, New Jersey.

Thomas E. Leet '17 Endowed Scholarship in Civil Engineering—Established by Eva C. Leet in memory of her husband, this partial scholarship is awarded annually to an upperclassman, preferably a member of the university’s ROTC Battalion pursuing a degree in civil engineering. The recipient must demonstrate financial need and be a resident of Atlantic, Cape May, or Cumberland County, New Jersey.

Theodore F. Locke Jr. PMC ‘42 Freshman Scholarship—Established by Theodore F. Locke Jr. ’42, this partial scholarship is awarded annually to an entering freshman exhibiting academic merit and financial need.

The Mervin R. Lowe Humanities Scholarship—This award is given annually to at least two worthy undergraduates majoring in the humanities. Recipients are selected by the humanities faculty on the basis of demonstrated academic ability, but with consideration given to financial need. The scholarship is funded from the estate of Mervin R. Lowe who was a full professor of English.

James W. Lush Endowed Scholarship—Created by James W. Lush ’45, this partial scholarship is awarded annually to a sophomore or upperclassman in the School of Engineering, School of Business Administration, or College of Arts and Sciences. Preference shall be given to a student pursuing a career in transportation or distribution. The recipient shall provide evidence of financial need.

MBNA Scholarships— Funded by MBNA America, partial scholarships are awarded annually to deserving students from the state of Delaware who demonstrate financial need.

William G. McGowan Scholarship— Widener’s School of Business Administration awards the Walter G. McGowan Scholarship to provide partial tuition support for an undergraduate student majoring in any of the four disciplines within the School of Business Administration: Accounting, Economics, International Business, and Management. Its purpose is to recognize and reward a student who has superior character, a track of excellent academic performance, leadership potential, and involvement in academic, campus, and community activities.

Rose McLaughlin Memorial Scholarship—This scholarship was created in memory of Miss Rose McLaughlin, who served as head housekeeper for more than 30 years, and is awarded annually to an outstanding junior or senior. Particular emphasis is placed upon the recipient’s sincerity, scholarship, motivation, and financial need.

Dean Thomas Grason McWilliams Jr. and Rosalinda Wepf McWilliams Engineering Scholarship—Established by Thomas Grason and Rosalinda Wepf McWilliams, this partial scholarship is awarded to an incoming freshman majoring in engineering. The recipient shall have an outstanding high school record and be a resident of Cecil County, Maryland. This scholarship is renewable based on academic performance.

George William and Ruth Axtmayer Miller Scholarship—Created by Winton A. Miller ‘55 to honor his parents, George William and Ruth Axtmayer Miller, this partial scholarship is awarded to a female student who has successfully completed her sophomore year toward a degree in engineering.

The Clarence R. and Ruth H. Moll Scholarship—To provide significant financial support for the purpose of improving the quality of our pre-medical education program and students. A total of four renewable scholarships are available in each class year (freshman, sophomore, junior, and senior). Candidates for the award must be of the highest character and recommended by the pre-medical program committee.

Ralph P. Muller and Alice B. Muller Endowed Scholarship—Created by Ralph ’62 and Alice Muller, this partial scholarship is awarded to a student pursuing an undergraduate degree. Awards are based on financial need and other unique circumstances as specified by the donors.

Music Scholarships—Music scholarships are available to entering students with outstanding musical abilities. Awards are made on the basis of audition. Renewal of these scholarships is dependent upon continued musical growth, maintaining the minimum required academic average, acceptable performance of duties and requirements, and full involvement in the wind or string program. Private lessons are required. Application is made through the Music Department. Candidates must have a specific endorsement of the high school director of music.

Subba Rao Nadig Memorial Scholarship—Created by faculty member Gopalakrishna Nadig, in memory of his father, this partial scholarship is applied to the senior year tuition and board of the highest ranking student majoring in mechanical engineering. Recipients are determined by the chairman of the Mechanical Engineering Department.

New Century Club of Chester—This partial scholarship is awarded to a student in the School of Nursing who is a resident of the City of Chester or surrounding region and who demonstrates evidence of scholarship and professional growth.

Charlotte W. Newcombe Scholarship—Established by the Charlotte W. Newcombe Foundation, these partial scholarships are awarded to female undergraduate nontraditional students over the age of 25. Recipients are selected by a committee. This scholarship is renewable.

The Office Depot College Scholarship—This partial scholarship is awarded to student(s) demonstrating financial hardship.

Leo A. Orlowsky Internship—Created in memory of Leo A. Orlowsky ’59, at least one paid internship in Widener University’s Athletic Department is awarded annually to a student interested in a career in college athletics administration. Preference will be given to students majoring in sport management.

Steven Ross Oskin Scholarship—Created by David W. ’64 and JoEllen Oskin in memory of their son, this four-year scholarship is awarded to students demonstrating financial need and maintaining a minimum GPA of 3.0. Preference is given to African American students demonstrating leadership and commitment through previous accomplishments and majoring in the School of Engineering or the School of Business Administration. One new scholarship will be awarded to an incoming freshman each year, all others are renewable.

Aram S. Papazian Scholarship—Established by family, fellow alumni, and friends of Aram S. Papazian ’58, at least one partial scholarship is awarded annually to a sophomore who is actively involved in campus life through university-sponsored extracurricular activities or is an active volunteer outside the university.

John F. and Clare M. Parkinson Endowed Scholarship—Established by the estate of Clare M. Parkinson, this scholarship is awarded to a student residing in Delaware County and majoring in nursing or engineering.

Pennsylvania Military College Alumni Scholarship—This partial four-year scholarship is awarded to an academically superior incoming freshman and is renewable each year. The amount and frequency of the award is determined by financial considerations.

PMC Prep School Scholarship—Established by Elmer N. Strauss Jr. ’56 and other graduates of the PMC Prep School, this partial scholarship is awarded to a freshman undergraduate
engineering student who is in good academic standing and has demonstrated financial need.

**Rotary Club of Chester Scholarships**—The Rotary Club of Chester provides $1,000 scholarships to local residents who attend either Chester or Cardinal O’Hara High School. While it is anticipated that there will be one recipient from each school, both recipients can be from the same school if there is no equally qualified applicant at the other institution. The university grants an additional scholarship of up to $1,000 annually to each recipient on the basis of the need. The maximum four-year value of each scholarship is $8,000.

**Saad Outstanding International Student of Business Scholarship**—Established by Germaine Saad and family, this partial scholarship is awarded annually to an outstanding international rising senior in the School of Business Administration. The student shall have achieved the highest GPA among all international students, demonstrating academic merit in operations management at the conclusion of the junior year.

**The Herman M. Saunders Memorial Scholarship**—Created in memory of Herman M. Saunders ’93 by his family and friends, this partial scholarship is awarded to a student demonstrating financial need. Preference will be given to members of the Phi Delta Theta fraternity who have demonstrated leadership within the Widener University community.

**John and Charles Sevier Memorial Scholarship**—Two partial scholarships are awarded to third- or fourth-year students in the School of Business Administration or the School of Nursing. Awards are based on academic excellence and financial need. The scholarships are in memory of faculty member John C. Sevier and his brother, Charles.

**The Margie A. Silli ’93 Endowed Scholarship**—Created in memory of Margie A. Silli ’93 by her family and friends, this partial scholarship is awarded to an upperclassman majoring in nursing. The award is based on academic merit and financial need. Preference will be given to graduates of Cardinal O’Hara High School and St. Francis of Assisi Catholic Elementary School, both in Springfield, Pennsylvania. This scholarship is renewable provided the recipient continues to qualify academically and financially.

**W.W. Smith Charitable Trust Scholarships**—An annual grant from the W. W. Smith Charitable Trust provides financial assistance to full-time, undergraduate students who are in good academic standing and who are in need of supplemental funds to complete their education.

**W.W. Smith Prize**—Established as an addition to the W. W. Smith Scholarship, the prize recognizes each year two seniors who have demonstrated academic excellence and involvement in the campus community. To be eligible students must have received the W. W. Smith Scholarship.

**The Professor Michael P. Smyth, PhD, Scholarship Fund**—This endowed scholarship has been created in memory of Dr. Michael P. Smyth by his wife Pamela and his family and friends. This is a partial scholarship awarded to a senior student majoring in electrical engineering who demonstrates integrity, leadership, service, and dedication.

**Professor Sophocles M. Sophocles Scholarship**—This scholarship was created in memory of longtime faculty member, Professor Sophocles M. Sophocles. At least one partial scholarship is awarded to a student in the Humanities Division of the College of Arts and Sciences who has completed two semesters at Widener. The student shall provide evidence of academic excellence. Of secondary consideration is the student’s financial need. Recipients shall be selected by the dean of the College of Arts and Sciences with the advice of the humanities faculty.

**Frances and Leo Speck Scholarship**—Established by John ’63 and Maryann ’63 Dishaw in memory of Maryann’s parents, this partial scholarship is awarded annually to a student in the School of Business Administration who demonstrates superior academic performance.

**Gayle Hanna Stauffer Family Undergraduate Health and Education Scholarship**—Created by Gayle Hanna Stauffer in memory of her parents, John R. PMC ’30 and Dorothy Yerkes Hanna, one partial scholarship is awarded annually to an incoming freshman declaring a major in nursing or premedical education. The recipient shall have an outstanding academic record and demonstrate financial need. The award is renewable.

**Dr. J. Jordan Storlazzi Sr. and Jr. Memorial Scholarship**—This partial scholarship is awarded to a rising senior biology student who is planning to attend either medical school or a graduate biology program or another graduate program involving physical science. The recipient shall demonstrate academic merit as well as financial need.

**Sykes Scholarship**—Created by Paul J. ’62 and Bonnie Sykes, this partial scholarship is awarded annually to full-time undergraduate students providing evidence of financial need. A recipient may receive this scholarship more than once providing the recipient remains in good academic standing advancing toward a degree.

**Dean Dorothy Stewart Thompson Undergraduate Nursing Scholarship**—Named for the founding dean of Widener’s School of Nursing, partial scholarships are awarded to senior nursing students in the day and evening divisions who demonstrate financial need and who exhibit service above and beyond expectation to the nursing profession and to patients in the clinical environment.

**General (Ret.) and Mrs. John H. Tilelli Jr. Annual Endowed Leadership Scholarship**—Established by Gen. John H. Tilelli Jr., ’63, this partial scholarship is awarded to a member of the ROTC Pioneer Battalion who participates in university sponsored extracurricular activities or is active in community service projects; alternatively the student may be a member of the Green Team or a veteran of the armed forces, GPA of 3.0 required.

**Robert and Jean Turrell Endowed Scholarship**—Created by Robert ’37 and Jean Turrell to honor Robert’s father, J. Elmore Turrell ’05, this partial scholarship is awarded annually to a student of outstanding academic record who has demonstrated financial need.

**United Parcel Service Minority Scholarship**—Awarded to an outstanding minority undergraduate student, this scholarship recognizes academic achievement as well as membership in campus organizations.

**United Parcel Service Scholarship**—This scholarship is given to undergraduate students who have demonstrated academic achievement and financial need. Membership in campus organizations also plays a role in receiving this scholarship.

**Vito R. Verni Endowed Scholarship**—Created by Vito R. Verni ’61, this partial scholarship is awarded annually to a student from a West Chester County, New York high school, preferably Iona Preparatory School. The recipient shall be pursuing a field of concentration in physical therapy, allied health professions, or nursing. Preference will be given to a student enrolled in the Reserve Officer Training Corps.

**VWR Scholarships**— Funded by VWR Corporation, four to six partial scholarships are awarded to African American students entering their sophomore year of study in the School of Business Administration. Awards are based primarily on financial need with consideration given to academic success. Recipients are chosen with the input of the School of Business Administration dean and faculty.

**Wetherill Scholarship**—At least one partial scholarship is awarded to a junior or senior majoring in mathematics. Emphasis is placed on the individual’s academic record and financial need.
Widener-PMC Alumni Association Scholarship Fund—Established by the members of the Widener-PMC Alumni Association and funded through gifts from Widener alumni and friends, corporations, and foundations, this partial scholarship is awarded to a full-time junior or senior student who is maintaining a GPA of 2.5 or better and participates in university-sponsored extracurricular activities or community service projects.

Widener Presidential Scholarship—The Widener Presidential Law School Scholarship provides a tuition scholarship for highly qualified entering students at Widener University School of Law. The recipient must have earned the baccalaureate degree at Widener University. The scholarship is awarded to that individual who has demonstrated academic excellence at the undergraduate level and has been actively involved in the Widener University community. Selection is based on the student’s academic achievement, involvement in undergraduate activities, standardized test scores, and letters of recommendation. A maximum of one applicant each year will be awarded the Widener Presidential Law Scholarship.

The Women’s Club of Swarthmore Scholarship—Partial scholarships are provided to assist mature women pursuing an undergraduate degree who demonstrate financial need, seriousness of purpose, good academic standing, and specific educational and professional goals. Preference is given to residents of the Borough of Swarthmore and surrounding communities within Delaware County.

William J. Zahka Scholarship—Created by gifts from faculty, alumni, staff, and friends to honor William J. Zahka, this partial scholarship is awarded annually to a student enrolled in the School of Business Administration, demonstrating academic merit and financial need. This scholarship is renewable.

The John A. Zohlmian Scholarship—This scholarship fund was established in honor of John Zohlmian, a cadet and battle group executive officer at PMC, by his friends and family. This partial scholarship is awarded to an upperclassman displaying academic merit and financial need.

ROTC SCHOLARSHIPS

Army ROTC Four-Year National Scholarships—The Army Four-Year Scholarship program is available to students who have graduated from high school or possess an equivalent certificate before September 1 of the first year they enroll in college. Students are awarded Army Four-Year scholarships through a highly competitive national selection process. The scholarship provides full tuition per year and mandatory fees, plus $1,200 per year for books and a $300–500 (based on academic level) per month tax-free stipend. Four-year scholarship winners at Widener also receive free room and board as an incentive. The stipend and book allowance provided by the Army must be counted as gift aid when determining a student’s overall eligibility for financial aid. Applications must be received by the U.S. Army Cadet Command no later than December 1 of the year prior to college enrollment. Applicants must have as a minimum 920 or higher on the SAT, or 19 or higher on the ACT; be a U.S. citizen; be 17 years old or older by October 1 of the year they enter college; and have four years of college remaining for a baccalaureate degree. Interested students should contact the Widener Department of Military Science at 610-499-4098.

Army ROTC Three- and Two-Year On-Campus Scholarships—The Army Three- and Two-Year On-Campus Scholarship program is available to freshman and sophomore students, and to seniors applying to a two-year graduate program. The Widener University professor of military science awards to qualified students full tuition scholarships including mandatory fees, plus $1,200 per year for books and $300–500 (based on academic level) per month tax-free stipend. All on-campus scholarship winners at Widener also receive free room and a $2,000 incentive toward board costs per year. Applications may be submitted to the Department of Military Science at any time. Applicants must have as a minimum 920 or higher on the SAT, or 19 or higher on the ACT (for three-year scholarship only), a cumulative GPA of 2.5 or higher, be full-time students, be U.S. citizens, and be able to graduate and commission before they are 31 years old. Interested students should contact the Widener Department of Military Science at 610-499-4098.

Army ROTC Advanced Course—The Department of the Army pays juniors $450 and seniors $500 per month during the regular school year to students enrolled in the Army ROTC Advanced Course. Upon completion of the Advanced Course and graduation from Widener University, students are commissioned 2nd lieutenants. Interested students should contact the Widener Department of Military Science for further details at 610-499-4098.

American Legion, Smith Howard Post ‘93 Scholarship—A $1,500 scholarship is awarded annually to a senior Army ROTC cadet at Widener who demonstrates excellence in academics, leadership, and military service.

General (Ret.) and Mrs. John H. Tilelli Jr. Annual Endowed Leadership Scholarship—One partial scholarship is awarded annually to a student who is a member of the ROTC Freedom Battalion, a member of the Green-to-Gold program, or a veteran of the armed forces. This recipient will be a student who participates in university-sponsored activities or who is active in community service projects, has no record of discipline, and who maintains an academic GPA of 3.0.

OTHER SOURCES OF AID

Students should contact local organizations such as the Lions Club, Kiwanis Club, Veterans’ organizations, and church organizations for local scholarship funds. Parents should contact their employers about scholarships and grants that may be available for their sons and daughters.

VETERANS

Widener University is approved for the training of veterans for all degree and internship programs. Veterans enrolling for the first time should contact their local Department of Veterans Affairs to verify benefits. The DVA will authorize an application and provide the veteran with a Certificate of Eligibility. The certificate should be taken to the coordinator of Veterans Affairs to establish receipt of benefits while attending Widener University. Veterans should apply at least six weeks prior to their expected date of enrollment.

Veterans transferring from another institution to Widener University are required to submit VA Form 22-1995 (Request for Change of Program or Place of Training) at least four to six weeks prior to the expected date of change.

Currently enrolled veterans are required to contact the campus coordinator of Veterans Affairs during each semester. This enrollment status requirement is designed to assist in avoiding delays in receipt of monthly benefits.

For more information, contact the coordinator of Veterans Affairs in Enrollment Management Services at 610-499-4159. The coordinator’s office is open Monday–Friday, 9 a.m. to 5 p.m.
### BILLING INFORMATION

#### ACADEMIC YEAR 2009–2010 TUITION RATES

**UNDERGRADUATE DAY**

<table>
<thead>
<tr>
<th></th>
<th>Full-Time Undergraduate Per Semester</th>
<th>$15,670</th>
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<td>Full-Time Undergraduate Annual</td>
<td>$31,340</td>
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<tr>
<td>Part-Time Undergraduate</td>
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<tr>
<td>Part-Time Undergraduate Engineering</td>
<td>$1,075 per credit</td>
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**UNIVERSITY COLLEGE**

- Main Campus: $468 per credit
- Delaware/Exton Campus: $426 per credit
- RN/BSN Clinical: $660 per credit

**MANDATORY FEES** (if applicable)

<table>
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<tr>
<th>Fee</th>
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<tr>
<td>Program Fee</td>
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<td>Activity Fee</td>
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<td>Technology Fee — Full-Time</td>
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<td>Technology Fee — Part-Time</td>
<td>$40 per semester for 3-5 credits, $55 per semester for 6-8 credits, $595 per semester for 9-11 credits, $200 per semester for &gt;12 credits</td>
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<td>Parking Decal — Commuter</td>
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<tr>
<td>International Student Orientation Fee</td>
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<tr>
<td>Graduation Fee (petitioning students)</td>
<td>$30</td>
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<td>Student Health Insurance*</td>
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*Student health insurance is assessed to all full-time undergraduate students. This fee can be waived if proof of insurance is received by the university. Academic year 2009–2010 rates are $1,671. Please contact the Student Health Office at 610-499-1183 for costs, benefits, and waiver information.

#### DINING PLANS

<table>
<thead>
<tr>
<th>Plan Description</th>
<th>Weekly Meals</th>
<th>Weekly Flex</th>
<th>Weekly Cost</th>
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<td>25 Meals with $50 Flex</td>
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<tr>
<td>50 Meals with $75 Flex</td>
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**Residence Halls**

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<th>Annual Cost</th>
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<tr>
<td>Grasselli Lofts</td>
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<tr>
<td>Dixon Hall</td>
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<td>Widener Court</td>
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#### BILLING/STUDENT ACCOUNT STATEMENT INFORMATION

 Widener will provide students with their account statements in electronic and hard copy formats. Students can view their billing statements through CampusCruiser and the “My Online Student Account” function. To access an online statement, students will need their Widener student ID and pin numbers. Contact Enrollment Management Services at busoffmc@widener.edu or call 610-499-4161 if you do not have your Widener student ID or pin number. Hard copy statements will be mailed to the preferred address on file at the time the statement is produced. All electronic statements will be sent to the student’s CampusCruiser account and to any authorized users that have been set up by the student.

**PAYMENT DUE DATES**

- **Spring Semester 2010:** Due January 8, 2010
- **Summer Session 2009:** Due May 18, 2009
- **Fall Semester 2009:** Due August 6, 2009
- **Spring Semester 2010:** Due January 8, 2010

**LATE PAYMENT FEES**

A late payment fee of $125 is assessed to all student accounts each semester that are not cleared by 5:00 p.m. on the payment deadline date given above. Late payment fees shall be assessed regardless of the source of payment. It is the student’s responsibility to ensure that all payments are received, payment plan enrollment is completed, and any third-party authorizations have been received.

Students who register after the tuition payment deadline will be required to obtain financial clearance at the time of registration by providing payment in full, enrolling in a payment plan, and making the first payment, having financial aid to cover the balance, or a third party authorization for payment.

**HOW TO PAY**

To pay online with a credit card* (MasterCard, American Express, Discover, or Direct Debit):

- Log on to your CampusCruiser account
- Select the “WebAdvisor” tab
- Locate the Financial Profile Section
- Click on “My Online Student Account”
- Follow the step-by-step instructions to log in to your online student account

* Important Note: You will need your Widener student ID and pin numbers to log on to your online student account. If you do not have this information, e-mail your request to busoffmc@widener.edu.

*Credit card payments are charged a 2.75% convenience fee by our vendor.
If you would like to mail your payment:

Make your check payable to Widener University, and write your student identification number on the check. The cancelled check will serve as your receipt. Please enclose the top portion of your billing statement. Send to: Widener University, Enrollment Management Services, One University Place, Chester, PA 19013

Caution: Do not send cash through the mail.

If you would like to pay your account in person:

You may make your payments (cash, check, or money order) in person at Enrollment Management Services in Lipka Hall (Main Campus). Regular semester office hours are Monday through Friday, 9:00 a.m. to 5:00 p.m. The office will also be open from 9:00 a.m. to 2:00 p.m. the first Saturday of each semester.

If you have a sponsor or third-party guaranteed payment:

If a company or a government agency is paying your tuition, please direct them to forward all appropriate paperwork to Enrollment Management Services. Their fax number is 610-499-4576.

Once documentation is received, your student account will be updated for financial clearance and your sponsor will be billed after the drop/add period is ended. This information must be received by Enrollment Management Services prior to the payment deadline to avoid late payment fees. It is the student’s responsibility to make sure the paperwork is received by the deadlines.

If you have an employer tuition reimbursement payment plan, contact Enrollment Management Services regarding tuition payment options.

UNIVERSITY PAYMENT PLANS

Payment plans are designed to assist students in managing the “gap” or balance remaining after all charges and financial aid have been applied to the student account. Widener University assesses fees by semester; the statement of account will reflect these charges for the current semester. A student’s financial aid award letter also breaks up annual award by semester and applies financial aid to the student’s account by semester. Widener offers three semester-based payment plans designed to assist in covering each semester’s balance. To find out about Widener’s payment plans, log on to the Enrollment Management Services’ website, e-mail businessservices@widener.edu, or call 610-499-4161.

WITHDRAWAL REFUND SCHEDULE

If you completely withdraw from the university, tuition and fees are refunded based on the following:

**Fall Semester 2009**

100%  If withdrawal completed prior to September 11
90%   September 11 through September 20
75%   September 21 through September 29
50%   September 30 through October 11
25%   October 12 through October 21
0%    After October 21

**Spring Semester 2010**

100%  If withdrawal completed prior to January 20
90%   January 20 through January 29
75%   January 30 through February 7
50%   February 8 through February 19
25%   February 20 through February 28
0%    After February 28

Adjustments to charges for complete withdrawal or drops in credit hours are effective on the date written notice is received by the appropriate program office of Widener University.

Caution: If you completely withdraw from the university and have received financial aid, you may be responsible for returning financial aid funds you have received based on the eligibility requirements set by the federal government.

RECEIVING EXCESS FINANCIAL AID

Enrollment Management Services disburses financial aid to student accounts daily. All financial aid is applied to outstanding charges on the student’s account. If a student has more financial aid than charges, the student is entitled to have these funds remitted.

During the first four weeks of each semester, financial aid checks are available after 10 a.m. Wednesdays and Fridays. After that, refund checks are available on Thursdays after 2 p.m.

WIDENER UNIVERSITY COLLECTION POLICY

All university charges, fines, and services are subject to the University Collection Policy.

Billing statements will be sent to the address on file periodically throughout each semester, however all fees and charges must be paid by the published deadlines regardless of receipt of a billing statement. It is the sole responsibility of the student to pay all fees when due. All registration, housing, and miscellaneous student fees, including parking fines and library fines must be paid in the semester in which they are incurred. All accounts that are 90 days or more past due are subject to being sent to an external collection agency. The student is responsible for all additional costs associated with collecting the debt.

Holds will be placed on future registration activity, transcripts, and other university services until the debt is paid in full.

For the complete University Collection Policy, contact Enrollment Management Services at 610-499-4161.

CONTACT INFORMATION

For questions or concerns regarding the billing statement or the status of financial aid clearance, please contact Enrollment Management Services, Lipka Hall, Widener University, One University Place, Chester, PA 19013-5792; phone: 610-499-4161; fax: 610-499-4576; e-mail: businessservices@widener.edu.

ACADEMIC POLICIES AND PROCEDURES

GRADING SYSTEM

Letter grades and their equivalents in quality points are:

- A (Excellent) 4.0
- A– (3.7
- B+ (3.3
- B (Good) 3.0
- B– 2.7
- C+ 2.3
- C (Satisfactory) 2.0
- C– 1.7
- D+ 1.3
- D (Passing) 1.0
- F (Failure) 0.0
- P (Pass: pass/fail course) 0.0
- NP (Fail: pass/fail course) 0.0
- AU (Audit: No credit) 0.0
- I (Incomplete) 0.0
- W (Withdrawn) 0.0

*Passing but below the average required for graduation.

A faculty member may choose not to differentiate grades using the plus/minus system for any particular course.

Students receiving “W” or “F” in any course are required to repeat the course to obtain credit. They cannot enroll in any course for which the failed course or the course from which they have withdrawn is a prerequisite until they have successfully repeated the course they failed or from which they withdrew. Under certain conditions, students above the freshman level may enroll in elective courses on a pass/no pass basis. (See “Pass/No Pass Option” section.)
CUMULATIVE AVERAGE
To calculate your cumulative grade-point average (GPA), divide the number of quality grade points earned by the number of credits attempted. Example: If you enroll in five 3-credit courses for one term and receive the grades of A, B, C, D, and F, your cumulative GPA would be 2.00 (30 quality grade points divided by 15 attempted credits). If you enroll in five 3-credit courses for the next term and receive the grades A, B, B, and C, your cumulative GPA would be 2.60 (78 quality grade points divided by 30 attempted credits). Follow this same procedure for each additional term. Only coursework taken at a baccalaureate school or college of the Main Campus is included in the quality grade-point system.

PASS/NO PASS OPTION
Students may elect to take certain courses on a pass/no pass basis. Whether they receive a grade of pass or no pass, the course and grade will be recorded on the academic transcript but will not affect the cumulative average. The following conditions apply to pass/no pass:
• Students in good standing after the completion of the freshman year may elect to use the pass/no pass option for one course each semester if their curriculum in that semester allows for such a course.
• The course may not be within the student’s major field nor be specifically required for graduation. Courses used to satisfy the general education and distribution requirement (all students are required to complete a minimum of 12 semester hours in each of the three areas of humanities, social sciences, and science/mathematics) may not be taken pass/no pass. Any course taken to meet teacher certification requirements may not be taken on a pass/no pass basis. Courses taken to satisfy the writing requirement should not be taken pass/no pass. Students should consult with their advisor to confirm that a course they wish to take meets these requirements.
• The pass/no pass option may be applied to no more than six courses, including any courses changed as part of a change in curriculum (see “Retroactive Pass/No Pass Option” in the section on “Change in Curriculum”).
• Forms are available from advisors. Forms must be completed and submitted to the Office of the Registrar prior to the end of the drop-add period at the start of each semester.
• No modules may be taken on a pass/no pass basis.
• No courses taken toward a minor may be taken on a pass/no pass basis.

INCOMPLETE GRADES
If a student has completed a majority of the work in a course but is unable to finish the remaining requirements within the time constraints of the semester because of illness, injury, or other extenuating circumstances, the instructor may decide to grant the student a grade of incomplete (I). A student who receives an I must arrange to make up all deficiencies with the instructor issuing the grade. If the work is not made up by midterm of the next semester (fall, spring, or summer co-op session) following the semester in which the incomplete is received, the grade will be automatically converted to F. The instructor may stipulate that the work be made up prior to the midterm deadline.

REPEITION OF COURSES
VOLUNTARY REPEITION OF A COURSE
A student may repeat any course, regardless of the grade, to effect a change of cumulative average on his or her permanent record. The conditions are as follows:
• No course may be repeated more than once without written permission from the school/college dean or the dean’s designee (who may stipulate further conditions).
• Courses previously taken under the standard grading system (A through F) may be repeated under the pass/no pass option. However, they must fall within the regulations for pass/no pass, and the student must receive a passing grade in order to effect any change on the transcript.
• Permission to repeat a course for cumulative average change must be approved by the student’s advisor. The equivalency of the original and repeated courses will be determined by the discipline that offered the original course.
• When a course is repeated, the former grade remains on the transcript but carries no credit and is not used in calculating the student’s cumulative average. The latter grade replaces the original grade for credit and quality grade points on the transcript; this applies even when the latter grade is lower than the former. If a student withdraws from a repeated course, no change will be effected. Please note that in cases of academic fraud, this policy does not apply.
• “Repetition of Course” forms are available from the student’s school or college. The completed form must be presented to the registrar when the student enrolls in the course.
• Courses once attempted at Widener cannot be repeated at another institution without the permission of the student’s school or college dean and in no case can the repetition affect the Widener University cumulative average.

MANDATORY REPEITION OF A COURSE
Any student falling below the appropriate minimum GPA standard who fails a required course in his or her major must repeat the course in the next regular semester (i.e., fall or spring) that it is offered. This mandatory repetition of course policy applies to students who matriculated in fall 2003 and subsequent semesters. The conditions and procedures for repeating a course are the same as those listed in the description of the voluntary repetition policy.

ACADEMIC PROGRESS
A student who makes normal progress may be expected to graduate after eight complete semesters of study. If at the end of any semester, a student falls below the minimal level of achievement required for graduation, but remains above the level which necessitates dismissal, the student will be required to reduce the course load until the cumulative grade-point average is restored to a satisfactory level. This will mean that in order to make up the required work, the student will have to attend summer school, carry a course overload later, and/or delay graduation.

ACADEMIC STANDING
All full-time matriculated students are considered to be in good academic standing. While Widener University has no probationary status, each school/college may place specific requirements and conditions upon students to promote their academic success. Students should follow the guidelines outlined in the “Standards for Academic Progress and Conditions for Reduced Load and Overload” section below.

STANDARDS FOR ACADEMIC PROGRESS AND CONDITIONS FOR REDUCED LOAD AND OVERLOAD
Cumulative Average Standards—The standards for academic progress are as follows. To be in good standing, students who matriculated in fall 2003 and subsequent semesters must meet the following standards:

<table>
<thead>
<tr>
<th>Semester Hours Completed</th>
<th>Minimum GPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.5 or fewer</td>
<td>1.70</td>
</tr>
<tr>
<td>16 – 30.5</td>
<td>1.80</td>
</tr>
<tr>
<td>31 – 60.5</td>
<td>1.90</td>
</tr>
<tr>
<td>61 and more</td>
<td>2.00</td>
</tr>
</tbody>
</table>

Students who matriculated prior to fall 2003 must meet the minimum GPA outlined in the Undergraduate Catalog that was in effect during their first semester of coursework. Students who do not meet these standards or the standards of their school/college:
• will have their records reviewed by the dean of their school or college and by their advisor to determine if they should be dismissed or if they should be allowed to continue their studies. If students are allowed to continue, they may be required to meet specific conditions established by their school or college.
• may be required to reduce their course load by one course below their regular program of study as outlined above. This provision may be continued until a 2.00 cumulative GPA is attained. Students who change their curriculum may not have to reduce their course loads.
• are ineligible for intercollegiate athletics. A student who wishes to have these standards waived due to extenuating circumstances should submit his or her request for a waiver to the associate provost for undergraduate studies before the beginning of the semester the waiver would be in effect. Waivers are granted rarely and only in circumstances that are beyond a student’s control.
• may be asked to withdraw from or reduce participation in extracurricular activities.

Standards for Semesterly Progress—Grounds for dismissal for academic failure include:
• failing to achieve the minimum GPA necessary for good standing consistent with the cumulative standards listed above.
• failing nine or more credits in one semester.
• failing to meet the specific requirements and conditions stipulated by the student’s school/college.

Note that the summer terms comprise a semester.

Students who are dismissed have the option to petition their school or college for reinstatement under specific requirements and conditions.

School/College Specific Eligibility Requirements—It is important to note that some programs require a GPA higher than the minimum GPA on the progress ladder or stipulate other conditions for continuation into the junior year. To learn about such standards and conditions, students should consult the dean of their school or college.

Review of Students Taking Reduced Course Loads—Students with a reduced schedule because of unsatisfactory progress will have their records reviewed by their school or college and their advisor to determine dismissal or conditions for continuance.

Conditions for Overload—No student with less than a 3.00 GPA will be permitted to carry an overload. A student with less than a 3.00 GPA who wishes to carry an overload must request permission from the dean of the student’s school or college.

A student with a 3.00 GPA will be permitted to carry an overload of one course. An overload of more than one course may be permitted upon specific approval of the dean of the student’s school or college.

A student may carry one course more than the course-credits mandated in the student’s curriculum for any given semester without additional charge. Credits taken beyond that point may only be taken with approval and with additional charge.

DISTRIBUTION REQUIREMENT
All students are required to complete a minimum of 12 semester hours in each of the three areas of humanities, social science, and science/mathematics. A semester hour consists of one hour per week in the classroom per semester or two to three hours in laboratory or fieldwork per semester. This requirement is based on the conviction that a baccalaureate degree represents more than expertise in a specific field. Students broaden themselves by taking courses in academic areas that have traditionally been at the heart of an undergraduate education. Students should work closely with advisors in selecting courses appropriate to their interests and academic needs.

Courses taken on a pass/no pass basis may not be used to satisfy the university distribution requirement. Both semester-long and certain module courses may be used to satisfy distribution requirements.

The following subject areas or courses satisfy distribution requirements:

**Humanities**
- art history
- English (excluding ENGL 100, 101, 111, 112)
- history
- humanities
- modern language
- music
- philosophy

**Science and Mathematics**
- anthropology 204
- biology
- chemistry
- computer science (excluding CSCI 101–124)
- earth and space science
- economics 341
- environmental science
- mathematics (excluding MATH 101–110)
- physics
- psychology 355
- science (excluding SCI 100)

**Social Science**
- anthropology
- criminal justice
- economics (EC 201, 202 only)
- government and politics
- communication studies (COMS 130, 180, 213, 220, 230, 250, 251, 275, 280, 285, 290, 316, 330, 335, 375, 380, 390)
- psychology (excluding PSY 381, 382, 383, 384, 385, 395, 409, 410, 419, 423)
- sociology

**DEVELOPMENTAL COURSES**

Developmental courses enable students to master fundamental knowledge that they need to succeed in their curricula at Widener. Freshmen are placed in developmental courses based on their performance on a placement test, which is given during the summer prior to enrollment, and their overall academic profile. The following courses are designated as developmental:

- CHEM 97
- ENGL 100
- ENGL 111
- MATH 101
- RDG 105

Developmental courses do not satisfy distribution requirements. No more than three credits of developmental coursework may be counted toward graduation.

**THE UNDERGRADUATE WRITING PROGRAM**

Writing is more than simply a means of communication, and good writing is a skill that should be mastered by all students. Writing is also a means of thinking and learning, and as such it is an important tool that faculty can use as part of the learning process. In order to develop good writing in all students Widener University has developed a university-wide writing program that consists of four parts:

**FRESHMAN COMPOSITION COURSE**

All students must complete the freshman composition course ENGL 101 Composition and Critical Thought. Honors students instead complete ENGL 103 Freshman Honors English. All students are required to complete a 30-minute writing sample prior to placement in ENGL 101. Students who score below level 3 (on the NTE Scoring Guide, which ranges from 0 to 6) must complete ENGL 100 Fundamentals of English before they can take ENGL 101. Students whose placement in ENGL 101 is marginal may be required to take a four-contact-hour section of ENGL 101.
WRITING ENRICHED COURSES

In addition to ENGL 101 all students must complete at least four courses (preferably one per year) that are designated as writing enriched. Writing enriched courses have three or more writing assignments that include student editing and revision so that students learn to correct their writing errors. The multiple writing assignments, including revisions, total at least 25 pages. An emphasis on “writing to learn” assignments can be found in many of these courses. Writing enriched courses are specifically designated on the schedule of course offerings. Individual schools and certain majors within the College of Arts and Sciences may require specific courses to satisfy this requirement. These courses are designated in the detailed curriculum ladders that list the requirements for each school and major, and may total more than four. Any course taken to satisfy the writing enriched requirement may not be taken on a pass/no pass basis. Transfer courses do not count as writing enriched courses.

PERIODIC WRITING SAMPLE

Each school/college periodically uses a writing sample administered by the Writing Center to follow and document the progress of their students. Students who need to raise their level of writing have the opportunity to complete a personal writing instruction plan coordinated by the Writing Center. Alternatively, students with serious deficiencies also have the option to take an appropriate course that addresses the deficiencies.

The following table lists the semesters in which each school/college requires the writing sample administered by the Writing Center. The table also gives the minimum score students are expected to obtain without having to complete additional work.

<table>
<thead>
<tr>
<th>Semester</th>
<th>School/Major</th>
<th>Minimum Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman Fall</td>
<td>Education</td>
<td>3</td>
</tr>
<tr>
<td>Sophomore Fall</td>
<td>Education, A&amp;S, Nursing, Business</td>
<td>4</td>
</tr>
<tr>
<td>Sophomore Spring</td>
<td>Social Work, Engineering</td>
<td>4</td>
</tr>
<tr>
<td>Junior Fall</td>
<td>Education, A&amp;S, Nursing, Business</td>
<td>5</td>
</tr>
<tr>
<td>Junior Spring</td>
<td>Social Work, Hospitality</td>
<td>5</td>
</tr>
</tbody>
</table>

DEMONSTRATION OF LEVEL 5 WRITING COMPETENCY FOR GRADUATING SENIORS

Each school/college has the responsibility for assessing the writing level of graduating seniors. The following use the writing sample administered by the Writing Center to certify that graduating seniors have attained level 5 competency: Arts and Sciences, Business Administration, Human Service Professions, and Hospitality Management. Level 5 competency will be demonstrated by students in the School of Nursing in NURS 452 The Nurse as a Professional, and level 5 competency will be demonstrated by students in the School of Engineering in the Senior Project, ENGR 401–402.

IMPLEMENTATION OF THE WRITING PROGRAM FOR TRANSFER STUDENTS

Initial Writing Sample—Transfer students will complete the writing sample during the summer orientation for transfer students. Transfer students who do not come to the summer orientation will complete the writing sample during their first semester on campus. The writing sample is administered by the Writing Center.

Writing Enriched Courses—Transfer students may be required to take fewer than four writing enriched courses according to the following schedule:

- A student transferring in as a: Must complete:
  - Freshman: 4 writing enriched courses
  - Sophomore: 3 writing enriched courses
  - Junior and beyond: 2 writing enriched courses

Transfer students, depending on their major, may be required to take specific courses in order to complete their degree that are also designated writing enriched. Consequently, they may need to complete more than the minimum two or three writing enriched courses listed above.

For further details on the Undergraduate Writing Program students should check with the dean of their school or college.

PROGRAM SUPPORT—WRITING CENTER

The university maintains a Writing Center to assist students with writing assignments in any course. Professional tutors in the center work individually with students and coordinate their efforts with instructors. The center is equipped with a network of computers for students to use. Faculty encourage students to use the center from the first draft of an assignment through to the final revision. Call the center at 610-499-4332 for more information.

REGISTRATION FOR ADVANCED COURSES

Registration for all courses beyond those taken in the freshman year will be held before the end of the preceding semester. The university reserves the right to withdraw any course for which fewer than eight students register.

CREDIT FOR ACTIVITIES

Students who are members of the Widener University Wind Ensemble, Concert Choir, Gospel Choir, String Ensemble, Jazz Ensemble, Chorale, Theatre Widener, or Dome staff are eligible to receive academic credit for participation in these activities. To receive credit, students must participate in a given activity for a minimum of four consecutive semesters. A maximum of four credits in any one activity and a total of eight credits in all activities may be applied toward fulfillment of graduation requirements. These credits may be used only as free electives.

CREDIT BY EXAMINATION

It is not intended that each student attend Widener for eight regular semesters to earn the bachelor’s degree although this is the normal length of time prescribed for the average student. It is intended that the degree be awarded whenever equivalent mastery can be demonstrated with a minimum requirement of completion of 45 semester hours of study at the university, including the completion of a minimum of 50 percent of credits in the student’s major.

Theoretically, a well-read student can earn up to two years of credit in at least some fields via the College Level Examination Program (CLEP). Lesser amounts of credit can be earned in all fields. Those entering directly from high school can earn credit via the Advanced Placement (AP) program offered in many secondary schools today. Practicum courses exist that provide credit for supervised student work in community agencies, government, etc. The co-op (intern) programs in business or in engineering allow a student to work for a total of 12 months in industry while still satisfying all requirements for the degree within four years of attendance. Credit can also be earned in certain areas via examination at the university.

COLLEGE-LEVEL EXAMINATION PROGRAM (CLEP)

CLEP differs from other tests in that it is not tied to nor based upon formal enrollment in a course of instruction. Degree credit can be earned on the basis of a college-level C performance on CLEP examinations. Accordingly, students coming to college directly from high school who seek to bypass courses in areas in which they are proficient, and those wishing to validate experience or personal knowledge in terms of college courses can do so. The tests are divided into two categories:

1. General examinations in five basic areas:
   - English composition*
   - humanities
   - natural sciences
   - social sciences/history
   - mathematics

   * Prerequisite for C performance is a score of 40 or above.
By satisfactorily completing all five areas, a student interested in liberal arts or business will enter Widener with sophomore status. Students in engineering and science receive lesser totals because they need a higher level of testing in mathematics and science than is provided in the General Examinations. There are specific subject tests they can take to achieve sophomore standing also.

*The general examination in English Composition is equivalent to Widener’s English 100, a developmental course. The subject examination in College Composition must be passed to earn credit for the required Composition and Critical Thought (ENGL 101).

2. Subject examinations measure achievement in specific college courses. More than 20 different tests are currently available. Applications, policy statements, test dates, and additional information regarding CLEP are available from the University College, Room 120, Kapelski Learning Center; phone 610-499-4292. The College Board Guide to the CLEP may be reviewed or purchased in the Widener Bookstore.

Students cannot receive CLEP credit for courses previously taken at Widener or for tests on material at a lower level than courses already taken. There is no limit on the number of CLEP tests an applicant may take and the student is assured of degree credit at Widener in every instance where the college-level C is earned. While the number of cases would be rare, it is possible for a particularly well-qualified student to satisfy up to two years of college via CLEP.

TRANSFER OF CREDIT AFTER MATRICULATION

After matriculation, students at Widener will not be authorized to take more than nine credits from other institutions and will only be authorized to take courses elsewhere if they have greater than 45 credits remaining until graduation with permission from the associate provost for undergraduate academic affairs. Transfer of credit for courses taken at other institutions after matriculation at Widener must have the prior approval of the associate provost for undergraduate academic affairs. The procedure to obtain this approval is:

1. Permission of student’s school or college.
2. Approval of course as suitable for Widener credit by school or college within which credit is sought.
3. Final approval from the associate provost.

Courses taken at other institutions will have no effect on the student’s cumulative GPA at Widener since quality grade-point credits will not be transferred. A minimum grade of “C” must be earned in a course to have credits transferred to Widener. Exceptions for the transfer of “C-” or lower grades differ among the academic majors. Students can learn about these policies from their academic deans.

CHANGE OF CURRICULUM

Any student desiring to change his or her curriculum should follow this procedure:

1. Report to advisor and obtain “Change of Curriculum” form.
2. Obtain approval and signature from the dean of the college/school whose area the student plans to leave and from the dean whose area the student wishes to enter.
3. Take the “Change of Curriculum” form to the office of the associate provost for undergraduate academic affairs for the final signature.

Retroactive Pass/No Pass Option—Any student who changes curriculum retains his or her previous record and must meet all requirements as stated in the Undergraduate Catalog at the time of the change. However, for certain curriculum changes, the student can request (at the time of change) retroactive pass/no pass credit for certain courses taken previously that do not lie within his or her new major field, are not used to meet teacher certification requirements, are not required for his or her new major, and are not being used to fulfill general educational requirements.

Appropriate forms must be completed at the time of changing curriculum, approved by the dean of the new college or school, and submitted to the registrar with the “Change of Curriculum” forms. This option may be applied to no more than four courses and will be specifically designated on the transcript.

CURRICULUM REVISIONS

Revisions in curriculum requirements will apply only to the semester beyond the student’s level at the time of their introduction.

WITHDRAWAL FROM OR ADDING COURSES

During the drop/add period as established by the registrar, students can drop or add classes and their semester charges will be adjusted to reflect full-time or part-time status as of the last day of the drop/add period. No tuition or fee adjustments are made after the drop/add period for a student who reduces his/her course load to less than 12 credits. Students are encouraged to select their courses carefully and make all adjustments during the drop/add period.

FULL-SEMESTER COURSES

Up through the first six class days of a semester, a student may drop a course without record. Such a drop requires the approval of the student’s advisor, who will complete and sign the official “Drop/Add” form that the student must submit to the Office of Enrollment Services.

Any student desiring to drop a course after the first six days of a semester must obtain the written permission of his or her advisor and the signed acknowledgment from the course instructor on the official “Drop/Add” form, which is then brought to the Office of Enrollment Services. A student who drops a course later than six days beyond the opening of a semester, but earlier than four weeks before its close, will be given a grade of “W” (withdrawal) for the course. A grade of “W” does not affect the student’s cumulative average. If the student drops a course during the last four weeks of class in a semester, or drops a course (including independent study) without permission of his or her faculty advisor or the school or college dean at any time, the student will receive a grade of “F” for the course.

Full-semester courses may be added during the first six days of a semester. No courses may be added after this time.

MODULES

During the first week of a module, a student may drop a module without record. Such a drop requires the approval of the student’s advisor, who will complete and sign an official “Drop/Add” form that the student must submit to the Office of Enrollment Services.

Any student desiring to drop a module after the first week must obtain the written permission of his or her advisor and the signed acknowledgment of the course instructor on the official “Drop/Add” form, which the student must return to the Office of Enrollment Services. A student who drops a course later than one week beyond the opening of the course, but earlier than two weeks before its close, will be given a grade of “W” (withdrawal) for the course. A grade of “W” does not affect the student’s cumulative average. If the student drops a module during the last two weeks of class, or drops a module without permission at any time, he or she will receive a grade of “F” for the course.

Modular courses may be added prior to the second week of a modular offering. No modules may be added after this time.

WITHDRAWAL FROM THE UNIVERSITY AND ADJUSTMENT OF CHARGES

The university must arrange in advance for its services for the student body for the full academic year. For this reason, registration by a student is considered a contract for the payment of tuition, fees, room and board as billed, and is subject to the provisions of this section.
PROCEDURES FOR WITHDRAWAL
AND LEAVE OF ABSENCE

All students withdrawing or taking a leave of absence from the university must visit the Office of Enrollment Services in Lipka Hall for an exit interview and to complete a “Questionnaire and Withdrawal Clearance” form. In some circumstances, a meeting with the associate provost for undergraduate academic affairs may also be necessary. When a resident student withdraws from the university, he or she is to vacate his or her room in good order within 24 hours.

LEAVE OF ABSENCE

A leave of absence must be approved by the associate provost for undergraduate academic affairs and will be considered only for medical reasons or personal hardship. The leave cannot exceed 180 days in any 12-month period. An end date must be given to this approved leave. If the student does not return by the end date, the student will be considered withdrawn and must follow the re-enrollment policy for withdrawn students. Title IV loan recipients who request a leave of absence will be advised that their loan repayment terms, including grace period, may be affected should they fail to return from the leave of absence. To return to Widener University, the student should contact Enrollment Services in Lipka Hall, 610-499-4161.

RE-ENROLLMENT POLICY
FOR WITHDRAWN STUDENTS

Undergraduate students who have officially withdrawn or are not enrolled in classes by the last day of the drop/add period will have their programs closed by Enrollment Services.

To return to Widener, students must first determine if there are any holds on their account by referencing CampusCruiser. If a student does not have access to CampusCruiser, he or she should contact Enrollment Services at 610-499-4161. If a hold exists, the student must remedy the hold before proceeding in the re-enrollment process.

After all holds are remedied, the student should go to Enrollment Services where it will be determined if academic progress was being made when the student left Widener. If academic progress standards were met, the student’s program will be re-opened, and the student will be responsible for all requirements at the time of re-enrollment. If academic progress standards were not met and the student has not been academically dismissed, the student will go to the associate dean of his or her school or college to seek academic approval.

Finally, the student will meet with an advisor to schedule classes. If the student has taken courses since leaving Widener, the student must submit an official transcript to the assistant registrar for degree audit before the advising appointment. Credits may or may not be transferred depending on university policy. Students can only be re-enrolled to Widener under the curriculum they left. Once students are re-enrolled to Widener, they may pursue changing their major by following the process for “Change of Curriculum” (see page 20).

RE-ADMISSION POLICY
FOR ACADEMICALLY DISMISSED STUDENTS

Students who have been academically dismissed from Widener University must fill out a re-admission application and submit it to the Office of Admissions. Students must submit an official transcript of coursework completed at other institutions since leaving Widener.

ADJUSTMENT OF CHARGES

In case of withdrawal, tuition and room/board charges will be adjusted on a pro rata basis. The specific schedule for adjustment of charges for each academic term is developed in accordance with regulations of the U.S. Department of Education. In general, the adjustments will be 100 percent prior to the second class, 90 percent to the end of the second week, 80 percent for week three, 70 percent for week four, 60 percent for weeks five and six, 50 percent for week seven, and 40 percent for weeks eight and nine. No adjustment will be granted after the end of the ninth week of classes. Students who are dismissed from the university or residence halls are not eligible for an adjustment.

All new students who decide not to attend should cancel their residence hall arrangement, application, or assignment by notifying the Admissions Office. Others not returning should contact the Housing and Residence Life Office in writing or by phone at the earliest possible date. Adjustments granted to resident students are based on the date personal effects are removed from the room, keys are surrendered, and proper and complete check-out has been effected. Any adjustment is made by check and mailed to the student’s current billing address by the bursar.

Notice of Withdrawal: The effective date used for all adjustment of charges will be the date written notice of withdrawal is received by the appropriate program office of Widener University.

FINANCIAL AID

In the case of adjustment due a student who has been awarded financial aid, the adjustment becomes the amount available for distribution to the federal, state, and institutional fund accounts. The amount returned to the funding agencies is determined in accordance with federal and state regulations. Any balance remaining after required repayments to sources of financial aid is refunded to the student. The detailed worksheet of the distribution formula can be obtained from Student Financial Services.

READMISSION

Readmitted students are liable for all qualitative and quantitative requirements for the degree that are in effect at the time of readmission as opposed to those that might have been in effect during the period of prior attendance. Students readmitted to Widener following an absence of three or more years may, at their option, have their prior Widener (PMC) credits recognized (in a similar manner to those of transfer students) in accordance with the following:

• All courses completed with grades of C or higher will be recognized as BLOC credit with no qualitative value. However, a student must receive graded (i.e., qualitative) credit for at least 50 percent of major coursework.
• Earlier courses in which a grade of F was earned are not carried forward. For a student with at least a 2.0 GPA at the time of reentry, courses with grades of C–, D+, or D may be carried forward and used to satisfy curricular requirements consistent with the school’s or college’s policy on the transfer of C– or lower grades.
• The determination as to which of the courses carried forward are acceptable in satisfying specific degree requirements will be made by the faculty in the major area into which the student is accepted.
• Calculation of the student’s new GPA will begin at the point of reentry. All courses taken at Widener will be listed on the transcript.
• Honors will be awarded on the basis of the cumulative grade-point average under the same conditions as those stated for all transfer students.

ACADEMIC REGULATIONS

The following regulations are excerpted and paraphrased from the “Minutes of the Academic Council.” These regulations explain Widener University’s expectations regarding students’ academic conduct and describe procedures related to those expectations. Exceptions to the regulations may be made only by special action of the school/college academic councils of the Academic Review Board. References in this Catalog refer to the Main Campus only.
STANDARDS FOR ACADEMIC INTEGRITY

ACADEMIC INTEGRITY STATEMENT: Widener University strongly supports the concepts of academic freedom and academic integrity and expects students and all other members of the Widener University community to be honest in all academic endeavors. Cheating, plagiarism, and all other forms of academic fraud are serious and unacceptable violations of university policy, as specified in this Catalog. Widener University expects all students to be familiar with university policies on academic honesty, and Widener will not accept a claim of ignorance either of the policy itself or of what constitutes academic fraud as a valid defense against such a charge. (This statement was adopted by the Faculty Council on February 24, 1998, upon recommendation of the Academic Affairs Committee.)

1. DEFINITION OF VIOLATIONS OF THE STANDARDS OF ACADEMIC INTEGRITY—Violations of the Standards of Academic Integrity constitute academic fraud. Academic fraud consists of any actions that serve to undermine the integrity of the academic process, including but not limited to:
   - unauthorized inspection or duplication of test materials.
   - cheating, attempting to cheat, or assisting others to cheat in a classroom test, take-home exam, or final exam.
   - post-test alteration of exam responses.
   - plagiarism.
   - electronic or computer fraud.

   Additionally, each university program may identify specific acts particular to a discipline that constitute academic fraud.

2. DEFINITION OF PLAGIARISM—One of the most common violations of the Standards for Academic Integrity is plagiarism. Plagiarism can be intentional or unintentional. However, since each student is responsible for knowing what constitutes plagiarism, unintentional plagiarism is as unacceptable as intentional plagiarism and commission of it will bring the same penalties. In many classes, faculty members will provide their own definitions of plagiarism. In classes where a definition is not provided, students are invited to follow the standards articulated in the following statement.

STATEMENT ON PLAGIARISM: Plagiarism—passing off the work of others as one’s own—is a serious offense. In the academic world, plagiarism is theft. Information from sources—whether quoted, paraphrased, or summarized—must be given credit through specific in-text citations. All sources used in the preparation of an academic paper must also be listed with full bibliographic details at the end of the paper. It is especially important that paraphrase be both cited and put into one’s own words. Merely rearranging a sentence or changing a few words is not sufficient.

3. PENALTIES—The minimum penalty for individuals found to have engaged in academic fraud will be failure in the course. For a second offense, the penalty will be failure in the course and expulsion from the university. Students who have been found as attempting to steal or stealing an examination will be failed in the course and expelled from the university.

4. PROCEDURES
   a) A faculty member who obtains evidence of academic fraud should inform the student of this evidence, either orally or in writing. The faculty member may also provide the student with the opportunity to respond to the charges. If the faculty member cannot resolve the matter satisfactorily with the student, he or she may file a formal complaint against the student through the office of the dean of the faculty member’s school or college.
   b) Upon receiving such charges, the office of the dean of the school or college shall then notify the student in writing of the complaint, the evidence upon which the complaint is based, the penalty to be imposed, and all rights of appeal.
   c) If a student wishes to contest the allegations of the complaint, he or she may do so according to the process stipulated in the by-laws of the school or college in which the alleged offense occurred. In such a case, the student will also be informed of the time and location of a hearing on the complaint and of all rights of appeal.
   d) Upon determination that sufficient evidence exists to support the allegation contained in the complaint by the school/college committee that hears the initial appeal, or in cases in which the student chooses not to contest the complaint, the prescribed penalty shall be imposed.
   e) The dean will notify the associate provost for undergraduate academic affairs in writing of the name of the student who has been found to have engaged in academic fraud.
   f) Appeals beyond an individual school/college body may be made by the student to the University Academic Review Board. Appeals to the Academic Review Board must be initiated by the student through the Office of the Associate Provost for Undergraduate Academic Affairs.
   g) If a complaint is filed against a student and the student is not enrolled in the course in which academic fraud is alleged, action will be taken by the dean’s office of the school/college in which the student is matriculated.
   h) When a student is found to have engaged in academic fraud, that student is then prohibited from exercising either the repeat-of-course or the retroactive pass/no pass options to remove the “F” grade (given as a result of fraud) from the GPA calculation. This restriction always applies to the particular course for which the “F” grade was given, as a result of academic fraud, in a particular semester. Equivalent courses taken during other semesters are not in general restricted.
   i) A confidential, centralized listing of students disciplined for academic fraud will be maintained by the Office of the Provost. In the event of the filing of a complaint alleging a second offense, the student will be informed, in writing, by the Office of the Provost of such complaint. Names will be dropped from the list of first offenders upon graduation or at the end of seven years after the last attendance.

The above articulated steps constitute due process when students are accused of academic fraud.

CLASS ATTENDANCE

A student’s regular attendance at class meetings is in his or her best interest. Course instructors may specify in the course syllabi the number of absences permitted in a particular course and the consequences of absences beyond this limit. However, no action solely based on class absence can be imposed on a student if the number of absences in a semester does not exceed the number of weekly class meetings. This freedom must not be construed as an invitation to be absent from class without good cause. No failing grade may be given solely due to class absences if the number of absences in a semester does not exceed twice the number of weekly class meetings. A student may receive a failing grade if the number of absences in a semester exceeds twice the number of weekly class meetings, if so specified in the course syllabus. In modules, the students are limited to half of the absences allowed in the above cases. In those courses that have laboratory components, laboratory meetings will be considered as a separate course in this class attendance policy.

A student who anticipates a period of absence exceeding one class week should notify the Office of the Associate Provost for Undergraduate Academic Affairs immediately.

In the interest of more effective student counseling, instructors in courses at all levels are encouraged to keep attendance records. All absences, including those due to both curricular and extracurricular activities, will normally be counted.
MISSED EXAMINATIONS POLICY
Every student is responsible for all work missed, including examinations, due to absence from class. Every instructor is responsible for his or her own examination policy and will normally announce this policy early in the semester. Students who miss an examination due to documented illness, court appearance, or death in the family are often permitted to take make-up examinations. However, the instructor is under no obligation to resolve the missed examination in this way, and the student should not assume that a make-up examination is forthcoming. Students who expect to miss a scheduled examination should immediately notify the instructor. A student who has missed an examination and is dissatisfied with the course instructor’s remedy may appeal to the course instructor’s dean. Further dispute may be resolved by the associate provost for undergraduate academic affairs.

ACADEMIC GRIEVANCE APPEAL PROCEDURE
If a student has a grievance concerning a class in which he or she is enrolled, the student will first try to resolve the problem with the instructor of the class. If it is impossible to resolve the matter at this level, the student must place the grievance in writing and can then appeal to the next higher level. The student should inquire at the office of the dean responsible for the course in question for the proper appeal procedure if the student’s grievance is not resolved to the student’s satisfaction after appeal to the instructor.

ACADEMIC REVIEW BOARD
The Academic Review Board consists of the provost, the associate provost for undergraduate academic affairs, the deans of each school/college, the vice chair of the University Council, and the chair of the University Council Academic Affairs Committee. Duties of the board include (1) hearing petitions for the waiver of academic regulations that transcend a single school or college (e.g., distribution or residency requirements, walk-through policy), and (2) serving as the appeal body in cases of an alleged violation of procedure in school/college Academic Council hearings.

EXPECTATIONS, RIGHTS, AND RESPONSIBILITIES:
THE WIDENER COMPACT

Widener University is a corporation, chartered by the Commonwealth of Pennsylvania and the State of Delaware, with authority vested in its Board of Trustees. Appropriate authority, then, is specifically delegated by the board to the president of Widener University, and through the president to other members of the administration and faculty and to individuals and groups throughout the institution. The following policies and procedures articulate specific rights or privileges the university grants students and the expectations it has for them.

The Office of Student Affairs will handle reports of violations of the Widener Compact directly by settlement or by referral to the appropriate hearing boards or administrator. At the discretion of the associate provost and dean of students, parents of students will be notified of disciplinary action or potential problems. Officers and faculty advisors should note that the Office of Student Affairs may withdraw university recognition from student groups or organizations for just cause.

THE RIGHT AND FREEDOM TO LEARN

Widener University is a comprehensive teaching institution. As members of our academic community, our students are encouraged to develop the capacity for critical judgment and to engage in sustained and independent study. Free inquiry and free expression in an environment of individual and group responsibility are essential to any community of scholars. The following guidelines have been developed to preserve and protect that community.

1. IN THE CLASSROOM
   a) Students are responsible for thoroughly learning the content of any course of study, but they should be free to take reasonable exception to the data or items offered, and to reserve judgment about matters of opinion. Therefore, students should be evaluated by their professors solely on the basis of their academic performance.
   b) Widener University is prepared to protect a student through orderly procedures against prejudiced or capricious academic evaluation by a faculty member.
   c) Protection against improper disclosure of information concerning a student is a serious professional obligation of faculty members and administrative staff that must be balanced with their other obligations to the individual student, the university, and society.

2. OUT OF THE CLASSROOM
   a) Campus organizations, including those affiliated with an extra-mural organization, must be open to all students without regard to sex, age, race, national or origin or ethnicity, religion, disability, status as a veteran of the Vietnam era or other covered veteran, sexual orientation, gender identity, or marital status.
   b) Widener University students and university-sponsored or university-recognized organizations are free to examine and discuss any issue and to express opinions, publicly or privately, and are free to support causes by orderly means that do not disrupt the regular and essential operations of the university. Any such expression must comply with university guidelines governing free expression activities. The participation by any student in any unlawful or disruptive activity that fails to comply with university guidelines or disrupts or interferes with the programs, functions, or conduct of the university is a serious offense punishable by suspension or expulsion.
   c) The student press is free of censorship, and its editors and managers are free to develop their own editorial policies and news coverage; however, Widener expects accurate reporting, correct writing, and good judgments in matters of taste.
   d) As constituents of the academic community, students are free to express their views on institutional policy and on matters of general interest to the student body, provided they do so in a manner that is lawful and organized and complies with university guidelines regulating free expressive activities. For this purpose, students elect representatives to the Student Government Association. There is also the Student Services Committee, chaired by a member of the faculty, on which student members sit.

ADDITIONAL STUDENT RIGHTS AND RESPONSIBILITIES

The policies and procedures contained in this Catalog are premised on several basic rights for all members of the Widener community. In addition to the rights articulated in the “The Right and Freedom to Learn” section of this Catalog, students have the following additional basic rights and responsibilities:

1. The Right to Safety and Security—In order to assist Campus Safety and to promote security on campus, individuals must assume responsibilities for their own safety and security and for those of others. Students share this responsibility by carefully following all university and community rules and regulations.

2. The Right to a Clean Environment—All members of the Widener community share the responsibility for maintaining a clean environment.
3. The Right to Communal Property—For the general welfare of the university, all students have a responsibility to exercise reasonable care in the use of personal or university property.

4. The Right to an Environment Suitable for Study and for Community Living—Academic study requires a reasonably quiet environment. Community living requires that all members of the Widener community respect one another and each person's property and share a responsibility for maintaining a clean and safe environment.

ANNUAL NOTICE TO STUDENTS REGARDING EDUCATION RECORDS

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

1. The right to inspect and review the student's education records within 45 days of the day the university receives a request for access. A student should submit to the registrar, dean, head of the academic department, or other appropriate official, a written request that identifies the record(s) the student wishes to inspect. The university official will make arrangements for access and notify the student of the time and place where the records may be inspected. If the records are not maintained by the university official to whom the request was submitted, that official shall advise the student of the correct official to whom the request should be addressed.

2. The right to request the amendment of the student's education records that the student believes are inaccurate, misleading or otherwise in violation of the student's privacy rights under FERPA. A student who wishes to ask the university to amend a record should write to the university official responsible for the record, clearly identify the part of the record the student wants changed, and specify why it should be changed.

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

3. The right to provide written consent before the university discloses personally identifiable information from the student's education records, except to the extent that FERPA authorizes disclosure without consent. The university discloses education records without a student's written consent under the FERPA exception for disclosure to university officials with legitimate educational interests. A university official is a person employed by the university in an administrative, supervisory, academic or research, or support staff position (including, without limitation, law enforcement unit personnel, health staff, athletic coaches and trainers, and admissions counselors and recruiters); a person or company with whom the university has contracted as its agent to provide a service instead of using university employees or officials (such as an attorney, auditor, contractor, consultant, volunteer, or collection agent); a person serving on the Board of Trustees; or a student serving on an official committee, such as a disciplinary or grievance committee, or assisting another university official in performing his or her tasks.

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

Upon request, the university also discloses education records without consent to officials of another school in which a student seeks or intends to enroll or is already enrolled. Such education records may include updated or corrected information, including, without limitation, disciplinary and health records.

4. The right to file a complaint with the U.S. Department of Education concerning alleged failures by Widener University to comply with the requirements of FERPA. The name and address of the office that administers FERPA is: Family Policy Compliance Office, U.S. Department of Education, 400 Maryland Avenue, S.W., Washington, DC, 20202.

5. The right to withhold public disclosure of any or all items of “directory information” by written notification to the Registrar’s Office of the university or the School of Law, as applicable, within two weeks after the commencement of the fall or spring semesters of any given academic year. Under current university policy, the term “directory information” includes, without limitation, a student’s name, home and campus address, telephone listing(s), electronic mail address, photographs, major field of study, grade level, enrollment status (e.g., undergraduate or graduate, full-time or part-time), dates of attendance, participation in officially recognized activities and sports, weight and height of members of athletic teams, dates of attendance, degrees, honors, and awards received, and the most recent educational agency or institution attended.

GRADUATION INFORMATION

A minimum of 121 credits is required for graduation. Some programs require additional credits. Consult the school or college dean for details. All students are required to complete a minimum of 12 semester hours in each of the three areas of humanities, social science, and science/mathematics as outlined earlier in this Catalog.

The successful completion of two semesters of physical education is a requirement for graduation. Veterans, freshmen, and transfer students who are 21 years of age or older, students transferring to Widener with sophomore or higher status (a minimum of 30 semester hours of approved transfer credit), and students with verifiable medical conditions that preclude their participation in physical education are exempted from this requirement. Exempted students are not required to make up the one credit in lieu of the physical education courses.

To qualify for graduation, a student must also have:

- Satisfactorily completed all requirements pertinent to his or her particular curriculum. The student must clear any “I” grades (Incompletes) from the record in order to graduate.
- Completed his or her studies with a GPA of 2.00 (C average) or better; the GPA is calculated on the basis of work done at Widener only.
- Presented no more than 12 modules toward fulfillment of his or her graduation requirements.
- Presented no more than two 0.5-credit PE courses or one 1.0 credit PE course toward fulfillment of his or her graduation requirements.
- Presented no more than three credits of successfully completed developmental courses toward fulfillment of his or her graduation requirements. For more information, see the “Developmental Courses” section in this Catalog.

RECOMMENDATION FOR GRADUATION

A student desiring to be recommended for graduation must file in the Office of Enrollment Services or online a form declaring his or her candidacy for a degree. This form (obtainable in the Office of Enrollment Services on request) must be filed during preregistration for the student’s final semester.

On receipt of the student’s declaration of candidacy for a degree, the registrar will apprise the proper school or college dean or group head of the student’s credit status. The dean will then make a recommendation to the faculty, who in turn will make a recommendation to the provost. The provost will make a recommendation to the president, who will recommend the student, if approved for graduation, to the Board of Trustees.
If the student fails to complete graduation requirements by the semester indicated on the petition, a new petition must be filed indicating when the requirements will be completed.

RESIDENCY REQUIREMENTS
All candidates for degrees must take their last 45 semester hours in a Widener baccalaureate school or college. Military personnel who are forced to transfer as a result of change in duty assignment may fulfill the 45 semester hours residency requirement at any time within their programs. Exceptions may also be made for full-time students to take courses at another institution during the summer prior to the senior year subject to prescribed conditions.

A minimum of 50 percent of credits in the student’s major must be taken in residence at Widener. Credit by examination may not be included in the 50 percent. Additional requirements may be set by the student’s school or college.

Courses taken from University College by students in the other baccalaureate schools or colleges (with the approval of the student’s academic dean in compliance with the school or college’s policy) will be accorded full academic credit. Such courses will count toward a student’s residency and the grades will be factored into the cumulative average.

CONFERRING OF DEGREES
Students who complete their graduation requirements by the end of the spring semester will have degrees conferred at the commencement exercises in May. Students who complete their work during either the summer or fall semester will be listed as having completed work in either August or December of that year, respectively. There will be no graduation exercises at that time, but students may elect to attend the commencement exercises the following May if they so desire.

PARTICIPATION POLICY
Students who have a cumulative grade-point average equal to or greater than 2.00 and who have no more than nine credits remaining to complete the requirements for the degree may petition for permission to participate in the May graduation ceremony. To petition for permission to participate in the ceremony, the student must (before the end of final exam week):

- Verify through consultation with the dean, assistant dean, or division head who has administrative oversight of the student’s major discipline that the minimum academic requirements as stated above are met.
- Submit for approval a written summer course plan for completion on or before August 30 of these remaining credits to the dean, assistant dean, or division head who has administrative oversight of the student’s major discipline.

EXAM RETAKE POLICY
FOR GRADUATING SENIORS
In the case of failure of a final exam by a senior graduating at the end of that semester, the student will be allowed to take one re-exam if, and only if, the final exam grade is the sole reason for failure of the course.

ACADEMIC HONORS
Honors will be calculated on all work completed in the baccalaureate programs of Widener, including original grades in the case of substitute courses. (This includes approved coursework taken at other schools while a Widener student.) A minimum of 60 credits of registered coursework must be taken at Widener to be eligible for honors.

For transfer students, the average of all courses taken on the Main Campus (minimum of 60 credits) will be considered for a preliminary review. For those who have honors averages at Widener, and only those, all prior work will be averaged in to determine final eligibility. The final average may not exceed the Widener average, in any case.

For transfer or reentry students who have been out of college for three or more consecutive years, the prior record will be omitted for honors calculation, provided the student has at least 60 credit hours of classroom work at Widener. (If a reentry student does not have the minimum 60 credits, all prior work will be included in the honors calculation.)

HONORS DESIGNATIONS
The minimum grade-point averages for honors are:
- Cum Laude (with distinction)—3.50
- Magna Cum Laude (with high distinction)—3.70
- Summa Cum Laude (with highest distinction)—3.85

VALEDICTORIAN AND SALUTATORIAN
To be eligible for consideration for valedictorian or salutatorian, a student must:
- be a graduating undergraduate student.
- after matriculation at Widener have been a full-time student for two semesters of each academic year.
- have received credit for no more than three transfer courses (totaling not more than nine credits), which will be averaged in to determine final eligibility.

Please note that AP and CLEP credit are not considered as transfer credit.

The valedictorian is the student with the highest GPA at the time of graduation, the salutatorian is the student with the second highest GPA at the time of graduation, and within each school/college, the student with the highest academic achievement is the student in that school/college with the highest GPA.

DEAN’S LIST
A full-time student—defined as a student who has completed a minimum of 12 credit hours in the semester—whose average GPA for any semester is 3.00 to 3.49 will be awarded Academic Honors; 3.50 and above will be placed on the Dean’s List.

PRESIDENT’S LIST
A student who earns a 4.00 GPA in two consecutive semesters of full-time coursework (at least 12 credits each semester) will be named to the President’s List. An Incomplete (I) or pass (P) grade in either semester disqualifies a student from consideration for the President’s List unless it is the only grade the student could receive based on the student’s curriculum or the type of course taken (e.g., in many two-semester senior seminar courses, an I is the only grade available at the end of the first semester).

HONORS, PRIZES, AWARDS
The Accounting Prize is awarded to a senior deemed most outstanding in the accounting program.

The Alumni Association Award is awarded to a sophomore in the ROTC program who has demonstrated superior qualities of leadership and has exemplified the underlying principles of the university.

The American Chemical Society Award for Chemical Engineering is awarded to a senior majoring in chemical engineering who has excellent standing in the field and who has been active in the student affiliate of the American Chemical Society.

The American Chemical Society Award for Chemical Engineering is awarded to a senior majoring in chemical engineering who has excellent standing in the field and who has been active in the student affiliate of the American Chemical Society.

The American Institute of Chemists Award for Chemical Engineering is granted to a senior majoring in chemistry and a senior majoring in chemical engineering for scholarship in that field.
The American Institute of Chemical Engineers Delaware Valley Section Award is given by the Delaware Valley Section to a sophomore, a junior, and a senior majoring in chemical engineering based on scholarship and activity in the AIChE student chapter.

The American Institute of Chemical Engineers Annual Chapter Award is given to the junior or senior majoring in chemical engineering who has the highest grade point average at the end of his/her sophomore year.

The American Society of Mechanical Engineers’ Philadelphia Section Award is given to a senior deemed best overall student in the mechanical engineering program.

The American Society of Mechanical Engineers’ Philadelphia Section Scholarship is awarded to a member of the rising senior class who is majoring in mechanical engineering and who is a member of the university’s chapter of ASME.

Appco’s Sports World Outstanding Marketing Student Award is awarded to the School of Business Administration senior deemed most outstanding in the marketing program.

The Association of Engineering Colleges of Pennsylvania Award is given to the graduating senior in engineering who has contributed most to professional development in the School of Engineering.

The Patricia Blair Criminal Justice Prize is awarded to the most outstanding student majoring in criminal justice.

The William S. Blakely Award is presented to the student who maintains the highest record in scholarship for the entire year and who also makes a significant contribution to the civic, cultural, or social affairs of Widener. Members of the senior class are not eligible.

The Julia B. Blumberg Engineering Award is given annually to the graduating senior who has demonstrated excellence in scholarship, leadership ability, and character traits.

The K. B. Brannon Award is given to the student who has made a significant contribution to the life of the humanities at Widener University.

The Robert J. and Judith G. Bruce Prize is presented annually to the Widener history major who has demonstrated outstanding achievement in the field of history during the past year. Selection is based on superior academic performance within the major, overall grade-point average, peer leadership, and active participation in student organizations and activities. This award is personally endowed by Mr. and Mrs. Bruce.

The Giuseppe O. Calabrese Award is given annually to the engineering student who, at the completion of his/her junior year, has demonstrated the greatest academic improvement in cumulative grade-point average over that recorded at the end of the freshman year. This award is in memory of Giuseppe O. Calabrese, distinguished professor of engineering.

The John R. Cellucci Fraternity/Sorority Trophy is awarded annually on a rotating basis to the fraternity or sorority judged to have made the greatest contribution to Widener during the year. The fraternity or sorority earning the award three times gains permanent possession of the trophy.

Certificate of Honors in General Education is awarded to students who successfully complete a minimum of five honors courses, including Freshman Honors English and one honors colloquium. The Widener University Honors Program is designed to stimulate the highest level of intellectual activity by bringing together highly motivated students and dedicated faculty for spirited discussion and interaction.

Certificate of Advanced Honors in General Education is awarded to students who exceed the criteria for the Certificate of Honors in General Education by successfully completing a minimum of six honors courses instead of five, including two honors colloquia, or one colloquium and one honors independent study in some field of general education.

The Certificate of Recognition for Outstanding Academic Achievement is presented by the faculty of the School of Nursing to the graduating registered nurse who has earned the highest academic average in the nursing major.

The Children’s Choice Bridge Builder’s Award is awarded to a graduating senior in social work who has been able to express an understanding and commitment to the concept of “Building Bridges” between children, families, and the community in which they live.

The Robert N. Chinquina Memorial Medal is awarded annually to the most outstanding senior to be commissioned as a second lieutenant in the combat arms of the U.S. Army.

The Michael Clark Prize in American Life and Culture is awarded for the best scholarly paper or critical essay written on an American topic for a humanities course.

The Class of 1970 Award is awarded to the graduating senior in the School of Nursing who was selected by classmates as outstanding in nursing abilities, class participation, and contributions to the Student Nurses’ Association and the school.

The College of Arts and Sciences Prize is awarded to a senior in the college who has demonstrated high scholarly attainment and who has given significant service to the university, particularly to the College of Arts and Sciences.

The Comcast Communication Studies Prize is awarded to a member of the senior class majoring in communication who demonstrates outstanding scholarship and distinction in that field.

The Computer Science Award is awarded to a member of the senior class majoring in computer science who has demonstrated excellence in the field of computer science.

The Cecil B. DeMille Award is awarded annually to a freshman, sophomore, junior, and senior in the ROTC program who have shown, in an outstanding manner, personal conviction of and devotion to the American ideal of individual freedom and the inalienable rights of man.

The Lillian B. Wald Community Health Award is presented to the graduating senior in the School of Nursing who has demonstrated excellence in the ability to promote the health of a community and in providing nursing care to ill clients in their homes.

The Complex Care Award recognizes the graduating senior in the School of Nursing who demonstrated outstanding academic and exceptional clinical nursing abilities in the care of adults with complex health problems.

The Dean’s Award is given to the senior deemed most proficient in School of Business Administration courses.

The Department of the Army Superior Cadet Award is presented to the military science student in the senior class who has consistently demonstrated the potential qualities of an army officer on the basis of military and academic attainments, leadership performance, and display of outstanding discipline, courtesy, and character.

The Eleanor O. Dower Award is given each year to a junior nursing student with a high academic average who has been exemplary during the junior year in the practice of nursing.

The Economics Prize is awarded by the economics faculty to the senior economics major who has most excelled in the program.

The Fairfax Leary Baseball Award is awarded to the baseball player who contributed most to the team during the current season.

The Finance Prize is awarded to the senior deemed most outstanding in the finance program.

The Financial Executives Institute Medallion Award is awarded to a senior student majoring in accounting or finance who has demonstrated scholastic accomplishment, leadership ability, and an interest in entering industry banking as opposed to public accounting.

The William S. Fishman Award, sponsored by ARAMARK, is awarded to a senior who has demonstrated academic excellence and shown potential for success in the field of food service.
The Dorothy B. Madonna Award, given by the Consulate General of the Federal Republic of Germany, is awarded to a graduating senior in recognition of the student’s commitment to the study of German.

The J. Wilson Graham Award is awarded annually to the senior English major who, in the opinion of the English department, has excelled in English literature.

The George A. Hansell Scholar-Athlete Award is a silver bowl and prize given annually to a male and female senior who are outstanding in scholarship and have distinguished themselves in the field of athletics.

The H. Edward Hanway Prize is awarded to the senior deemed most outstanding in the international business program.

The Allen M. Harwitz Award is a scholarship awarded annually to a Widener student who is a graduate of Chester High School. The student will be selected by Student Financial Services on the basis of financial need.

The Howard C. Henderson Award is awarded to the member of the graduating class who has maintained the highest academic average through the equivalent of seven full semesters, not including the semester in which the award is bestowed. The recipient must have begun his or her college career at Widener and completed a minimum of 90 semester hours in residence.

The Eileen H. Hepburn Prize is presented each year to the senior majoring in sociology who demonstrates outstanding scholarship and distinction in that field.

The School of Hospitality Management Prize is awarded to a senior who has demonstrated excellence in academic endeavors, shown leadership in extracurricular activities, and has performed well in industry positions.

The Donald M. Huntsinger Award is given each year to the Widener senior who, during his or her matriculation, has increasingly provided campus leadership, particularly through government activities.

The Charles E. Hyatt Engineering Prize is awarded to the member of the senior class in the School of Engineering whose record shows that he/she has excelled in the work of the school.

The Hobart C. Jackson Award is presented to an undergraduate Widener student who has demonstrated commitment to community service. Preference is given to students who intend to pursue a career in gerontology, or who are preparing to pursue an MSW degree at Widener University.

The Theodore S. and Kathryn R. Jaffin Award is given to one male and one female student who have demonstrated persistent determination, resilience, and vibrant joy in achieving academic success.

The R. Kenneth Johnson Memorial Award is presented to the graduating senior in the School of Nursing who demonstrated outstanding academic and clinical abilities in the nursing care of childbearing families during the obstetrical nursing course in the junior year.

The Nathaniel and Shirley Kornfield Memorial Undergraduate Award is presented to a graduating senior in the electrical engineering program of study who exemplifies the high academic standards and requirements of the cooperative education program.

The Admiral Herbert F. Leary Award is presented each year to the senior majoring in political science who demonstrates outstanding scholarship and distinction in that field.

The Dr. Theresa L. Lynch Award is presented by the faculty of the School of Nursing to the seniors with the highest GPA.

The Major General E. E. MacMorland Award is given annually to a sophomore in the ROTC program who has maintained the most outstanding academic and military record in his/her class, has demonstrated a high degree of leadership potential, and has shown a genuine interest in the military science program.

The Dorothy B. Madonna Award is awarded annually to the female student in each internship program who has attained the highest average for the freshman year.

The Management Prize is awarded to the member of the senior class deemed most outstanding in the management program.

The Management Information Systems Prize is awarded to the senior deemed most outstanding in the management information systems program.

The J. Willard Marriott Jr. Award is given to the senior who has shown through academic excellence, extracurricular and cocurricular activities, and on-the-job performance the greatest potential for success in hotel management.

The Major Frank L. Martin Civil Engineering Award is a gold watch presented to a civil engineering senior who, by his or her perseverance and sincere and earnest efforts, has shown the greatest improvement in developing engineering ability. The award was established in 1960 by Mrs. John W. Roberts of Richmond, Virginia, in tribute to her father, Professor Frank L. Martin, who served the university in civil engineering for more than 30 years.

The Master Tutor Award is awarded to graduating seniors in recognition for their excellence in tutoring. This award is sponsored by the College Reading and Learning Association.

The Kathryn E. Melwert Award is given to the graduating seniors in the School of Nursing who have demonstrated the most outstanding growth professionally, academically, and socially toward becoming professional nurses.

The Alice Nearing Prize is awarded to the student who shows the greatest ability in creative writing. The recipient is to be determined by the teachers of advanced writing courses.

The Geoffrey Nearing Prize is awarded annually to a School of Business Administration senior who has demonstrated high scholastic achievement and who has contributed significantly to student activities.

The Gregory Nearing Prize is awarded to the member of the senior class deemed most outstanding in the behavioral sciences.

The Outstanding Student Teacher Award is presented to the student teachers who demonstrated excellence in teaching performance, organizational skills, lesson planning, and classroom management.

The Omega Chi Epsilon Award is given by the Beta Mu Chapter of Omega Chi Epsilon to a member of the chapter who has displayed outstanding scholarship and service to the Department of Chemical Engineering.

The Donald F. Othmer Sophomore Academic Excellence Award is presented to the junior/senior majoring in chemical engineering who had the highest GPA at the end of the sophomore year.

The Outstanding Academic Achievement and College Service Award is awarded to the graduating bachelor of social work student who demonstrates an outstanding level of academic achievement as well as service to the university and community.

The Outstanding Adult Student Award is awarded to a graduating adult student who has excelled in academic studies and contributed service to the university community.

The Aram S. Papazian Award is presented to the ROTC graduate who has demonstrated a high level of academic achievement and leadership potential through participation and performance in campus-based ROTC programs.

The Hilde Eerde E. Poplaw Psychiatric-Mental Health Nursing Award is given to the graduating senior student in the School of Nursing who demonstrates excellence in clinical practice and mastery of theory in mental health-psychiatric nursing.

The Pennsylvania Institute of Certified Public Accountants Award is given to a senior on the basis of high scholastic standing and qualities of leadership evidenced by campus activities.

The Phi Alpha Theta Award for Excellence in Historical Research recognizes a student for outstanding achievement in the field of history.
The Phi Kappa Phi Undergraduate Scholarship Award is awarded to a graduating senior with outstanding academic scholarship who has maintained a GPA of at least 3.7, engaged in other scholarly and extracurricular activities, and has participated in service to the Widener community or the outside community.

The William R.F. Phillips Criminal Justice Citizenship Award, named in honor of the founder of the criminal justice program at Widener University, is given annually to the graduating criminal justice student who has displayed academic excellence and a commitment to the criminal justice studies and activities at the university.

The William R.F. Phillips Memorial Student Research Prize is given to the student member of Phi Kappa Phi who is judged to have presented the best research paper or poster on Student Project Day.

The William R.F. Phillips Prize is awarded to an outstanding student in sociology or the humanities who has contributed through academics or activities to the knowledge and appreciation of urban studies, specifically the importance of cities and the value of urban life in society.

The William R.F. Phillips and Joseph R.G. DeMarco Prize is awarded to outstanding students majoring in sociology or the humanities who have contributed through academics or activities to a positive understanding of the meaning of diversity in the life of a community.

Pi Gamma Mu Award is awarded by the International Social Science Honor Society to the graduating senior member with the highest cumulative grade-point average.

President’s Award—Main Campus is awarded to the senior on the Main Campus who has contributed most to campus life through scholarship and participation in extracurricular activities.

Psychology Award for Service is presented to a graduating senior majoring in psychology who has completed an internship or practicum of at least 100 hours and has a cumulative GPA of 3.0 or higher.

The Psychology Prize is awarded to the graduating senior psychology majors who have demonstrated outstanding scholarship and distinction in that discipline.

The Linda Richards Award recognizes a beginning senior in the School of Nursing who has demonstrated significant achievement for a junior level student in caring for adult clients.

The Samuel S. Rodney Memorial Prize is given to the student over 24 years of age pursuing an undergraduate engineering degree with the highest grade-point average for the academic year. The student must have completed a minimum of 12 semester hours during the academic year to be eligible.

SAP Certificate of Recognition is awarded to students who have completed three courses designated as SAP approved. This recognition is made possible through Widener’s alliance with SAP AG, a German-based software solutions company specializing in enterprise systems.

The Sartomer Management Leadership Award is awarded by the Sartomer Company to the senior management major who has demonstrated outstanding leadership qualities and organizational abilities in academic and extracurricular activities.

School of Business Administration Certificate of Honors is designed to provide highly motivated students with courses and activities that provide a forum for the highest level of intellectual instruction with dedicated faculty. The School of Business Administration Certificate of Honors is awarded to students who successfully complete a minimum of three School of Business Administration honors courses.

The School of Nursing Dean’s Undergraduate Award is given to a day, evening, and registered nurse student in the undergraduate nursing program who demonstrates leadership ability and excellence in nursing.

The School of Nursing Outstanding Alumni Award is given annually to a deserving alumnus of the Crozer Foundation, PMC Colleges, or Widener University. The recipient must have made an outstanding contribution to the profession of nursing or to the community.

The Science Award is awarded to the member of the senior class majoring in a science division program who has the highest academic average.

The Rusel Silkey Prize in the Humanities and Social Sciences is awarded to an outstanding student majoring in the humanities or social sciences who contributed to our understanding of minority or women’s issues.

The Excellence in Social Work Practice Prize is awarded to the graduating BSW student who demonstrates an outstanding level of academic achievement as well as service to the university and community.

The Anna Sokol Commencement Award is given to a student who has completed his/her requirements for an undergraduate degree within the Center for Education. The student shall demonstrate academic merit and be a member of the Widener Student Education Association. The participant will also have participated in community service projects.

The Dianne Stinitis Award is awarded annually to the female engineering freshman having the highest GPA in the two freshman mathematics courses and the highest cumulative GPA at the end of her freshman year. The two are averaged to determine the recipient.

The Teacher Education Advisory Committee Award is awarded to the outstanding student in the Teacher Education Program, based on performance in the classroom and general contribution to the field of teacher education.

The Teacher Education Award is awarded to the graduating senior who has completed requirements for certification in education and who has achieved an overall 3.5 grade-point average in education courses and an overall 3.2 in all other courses.

The Undergraduate Teacher Education Award is presented to the graduating senior who has completed requirements for certification in education and who has achieved at least an overall 3.50 GPA in education courses and at least an overall 3.20 GPA in all other courses.

The Dr. Norma D. Thomas Award is given to an African American MSW student who has demonstrated outstanding levels of service to the community and a commitment to practice in the field of gerontology.

The Fredericka and Sidney Waldauer Award is awarded to a member of the senior class deemed most outstanding in the economics seminar.

The Betty Weyn Award for Care to the Childrearing Family recognizes the graduating senior in the School of Nursing who has demonstrated true caring and understanding of pediatric clients and their families and who has demonstrated the most growth in clinical abilities.

Widener/PMC Alumni Association Sabre Award is presented to the senior ROTC cadet who has made a marked contribution to the Widener University corps of cadets and has consistently demonstrated superior leadership characteristics.

Widener University Recognition Scholarship Fund recognizes alumni or friends of the various colleges of the university. This fund provides income from the contributions of alumni, family, and friends to be awarded annually to undergraduate, graduate, or professional students whose academic and extra-academic achievements exemplify the high ideals of the institution and who demonstrate a need for supplemental financial resources to complete their education. In those cases where a gift has been designated for a specific purpose, the wishes of the donor(s) will be honored.

The Howard A. Wiley Memorial Award is given to the senior who most intelligently, constructively, and effectively helped
bring into being changes in university administrative practices that the student genuinely believed to be out of step with the needs and interests of the student body and who served as an unofficial ombudsman in the interest of the legitimate rights of students. The Lieutenant William J. Wolfram Memorial Award is given annually to a junior in the ROTC program who has maintained high averages in academic and military subjects, has demonstrated outstanding leadership traits, and has shown a sincere interest in a military career. Athletic Letters are awarded to members of varsity teams deemed worthy of recognition. Letters may be worn on the regulation sweater and are a mark of excellence in the sport recognized.

**ACADEMIC SUPPORT SERVICES**

Widener provides numerous support services to help students achieve academic success. Programs include personalized academic coaching for any level student through the Office of Academic Support Services; the Early Assessment Program that reaches out to freshmen who are in jeopardy of failing a class before the midterm; Tutoring Services for content area tutoring and assistance with study skills; the Math Center for individual and group tutoring; and the Writing Center for comprehensive assistance with writing skills.

Disabilities Services is the office providing disability support services for Widener students. The Office of Disabilities Services responds to requests for reasonable academic accommodation of a disability and provides individual academic coaching for students with disabilities.

**NEW STUDENT REGISTRATION AND ORIENTATION PROGRAMS**

New student registration is held on the Main Campus during the summer; all freshmen are expected to attend. In addition, a comprehensive three-day orientation program is held just prior to the beginning of the fall semester.

**HONORS PROGRAM IN GENERAL EDUCATION**

The Honors Program is designed for students with a particularly strong academic record. It is intended to provide such students with classroom and extracurricular experiences that foster a spirit of inquiry and discovery. Participants in the Honors Program have the opportunity to take special honors courses. These courses, limited in enrollment to a maximum of 15 students, are not necessarily more demanding than regular classes in terms of the amount of work required. Rather, they are structured to allow for spirited discussion and interaction. Honors courses are taught by faculty members selected for their ability to stimulate and challenge inquisitive students to achieve the highest levels of intellectual activity.

The Honors Program encourages participation by students from all of the different schools and colleges in the university. Honors courses count toward the university’s general education requirements, which must be met by all Widener students. Thus, it is even possible for students with very demanding majors to participate in the program. In addition to the intellectual stimulation that participation in the program can provide, involvement in the program can have a positive impact on an individual’s career. Employers and graduate schools view participation in an honors program very favorably in evaluating applicants.

A Certificate of Honors in General Education is awarded at graduation to students who successfully complete a minimum of five honors courses. The usual course distribution is Freshman Honors English, one honors colloquium, and at least three other honors courses. Students are encouraged to take as many additional honors courses as they wish. A Certificate of Advanced Honors in General Education is awarded at graduation to students who successfully complete an additional honors colloquium or an honors independent study in some field of general education.

To continue in the Honors Program, each participant must attend a minimum of eight outside-of-class performance or lecture series events during each academic year. Two of these eight events must be events held during the annual Honors Week in the spring semester. Each participant must also maintain an overall grade-point average of 3.25.

Incoming freshman students are invited to participate in the Honors Program based on their high school records and SAT scores. After the first and second semesters of the freshman year, other interested students displaying excellence in college work are invited to join the program. Students selected for the Honors Program are given priority consideration for Presidential Scholarships.

**EXPLORATORY STUDIES**

Not all freshman students wish to declare an academic major immediately upon entering Widener. Therefore, Widener provides a program known as Exploratory Studies, designed to meet the particular needs of students wishing to explore several academic major options. Any freshman student who has not made a decision about a college major may elect to be an Exploratory Studies (ES) student.

Selection of an academic major generally occurs by the end of the freshman year, although some students continue their ES status into the sophomore year. Exploratory Studies students are cautioned that if the selection of an academic major is prolonged beyond the freshman year, summer and additional semester work may be required to meet graduation requirements, depending upon the field of study ultimately selected.

Exploratory Studies students matriculate fully. Students take courses with students from all other academic divisions, and ES students have successfully pursued admission to every major program on campus. Each ES student is advised by a faculty academic advisor; students are also scheduled for appointments with ES staff and are encouraged to work with the staff in Career Advising and Planning Services.

Prospective students are encouraged to discuss this program with their Widener admissions counselor or to contact the director of Exploratory Studies.

**PRE-PROFESSIONAL PREPARATION**

**PRE-LAW PREPARATION**

The Association of American Law Schools has emphasized that no single major or individual group of courses provides a secret key to preparation for law school. Students should major in a field that is intellectually challenging and that will develop:

- comprehension and expression in words,
- critical understanding of the human institutions and values with which the law deals,
- creative power and thinking.

Widener maintains membership in the Northeastern Association of Pre-Law Advisors. Faculty members on Widener’s Pre-Law Advisory Committee can provide special counseling in course selection and in the law school application process. Students are urged to contact the chair of the Pre-Law Advisory Committee or other members of this committee for more information. Students who graduate from Widener in the top 50 percent of their graduating class and score in the 50th percentile or better on the LSAT are guaranteed a seat in the Widener University School of Law.

Common majors for pre-law include accounting, English, government and politics, history, management, criminal justice, and sociology. The faculty of the College of Arts and Sciences has approved a “Minor in Legal Studies and Analysis” to assist students in preparing for the study of law.
PRE-MEDICAL PREPARATION

Widener University fully subscribes to the position established by the Association of American Medical Colleges that individuals from diverse educational backgrounds are needed by the medical profession. Students may major in any field, provided that they acquire a strong foundation in the natural sciences (biology, chemistry, mathematics, and physics), highly developed communication skills, and solid background in the social sciences and humanities that medical schools uniformly seek in their applicants. Biochemistry, biology, chemistry, chemical engineering, mechanical engineering, nursing, and psychology are examples of majors that have been pursued by Widener students who have competed successfully to enter medical school. Students are urged to contact the chair of the Pre-Medical Committee for further information.

The health professions advisor actively assists students from the beginning of the first year of study to provide maximal opportunity for each student to attain an academic and extracurricular record worthy of admission to medical school. Students who are interested in preparing for professional careers in optometry, podiatric medicine, occupational therapy, physical therapy, dentistry, veterinary medicine, or chiropractic are also personally guided by the pre-medical advisor. A library of pertinent references, including videotapes, is readily available in the advisor’s office, and special efforts are made to enable each student to explore all the options which are available so that fully informed decisions can be made.

Students may also avail themselves of the following extracurricular opportunities as their interests dictate:

- part-time volunteer experiences at Crozer-Chester Medical Center.
- field trips to nearby medical schools.
- mock admissions interviews in the senior year.

Accelerated programs that enable students to earn the bachelor of science in biology and the doctor of optometry, the doctor of podiatric medicine, or the doctor of osteopathy exist between Widener University and the Pennsylvania College of Optometry, the Temple University School of Podiatric Medicine, and the Philadelphia College of Osteopathic Medicine, respectively. Details about the accelerated programs are available in the section devoted to the sciences.

The Institute for Physical Therapy Education and College of Arts and Sciences also offer bachelor of science and doctor of physical therapy dual-degree programs. Qualified pre-physical therapy students may earn both Widener degrees in six years by pursuing this option. Details are available in the Institute for Physical Therapy Education section, which describes the curriculum for several majors.

THE WIDENER MEDICAL SCHOLARS PROGRAM

Widener University, Crozer-Chester Medical Center, and Temple University School of Medicine offer an integrated, eight-year undergraduate/medical school and affiliated hospital BA/MD program known as the Widener Medical Scholars Program. Interviews at each institution are used to determine which candidates are admitted to the program. Admission to the Medical Scholars Program includes an early assurance, contingency admission to the School of Medicine.

Candidacy is open to highly qualified high school seniors who have been accepted by Widener University for pre-medical study, who reside in Pennsylvania or Delaware and who are particularly inclined toward careers in family medicine, general internal medicine, and pediatrics.

POST-BACCALAUREATE

PRE-MEDICAL PREPARATION

Widener University, in affiliation with Temple University School of Medicine, offers college graduates who are interested in becoming physicians the opportunity to enter the School of Medicine at the conclusion of two years of full-time study. A maximum of four post-baccalaureate students each year will be offered admission by the School of Medicine. Other post-baccalaureate opportunities are available as well. Full details are available from the health professions advisor.

MODULE COURSES

In addition to regular full semester courses, seven-week module courses are offered. They are offered in the areas of humanities, science, and mathematics and some can be used to fulfill distribution requirements. Modules are optional, and not more than twelve may be taken to fulfill graduation requirements. See “Course Descriptions” for more information.

OPEN MAJOR

The open major enables the student at Widener to design his/her own interdisciplinary program. It was created to encourage the student to participate in many of the diverse disciplines offered at Widener. A student must be in good standing to qualify for participation in an open major program. Interested students should consult their academic advisors who will help them form an advisory committee of three members of the faculty. This process should be instituted at the normal time for declaring a major. Once the student and committee have designed a program, it is submitted to the Faculty Committee on Open Majors. This faculty committee will approve and review the progress of each program once a year and (upon the recommendation of the student’s advisory committee) will be responsible for recommending to the faculty the granting of the appropriate degree for which the student qualifies.

There are a number of possibilities within this framework in such fields as Hispanic studies, international affairs, multinational enterprises, urban affairs, engineering, management, and others.

Because of the nature of such programs, the advising relationship between the student and the faculty must be especially close.

STUDY ABROAD

Widener faculty members provide students with opportunities to participate in short-term study abroad and service-learning projects over winter and spring breaks as well as during the summer. Through cooperative arrangements with other colleges, universities, and nonprofit groups, Widener students can arrange a summer, semester, or year of study or work abroad.

Each fall and spring semester, the university sponsors a Study Abroad Fair at which students can obtain information about these programs. In addition, a Study Abroad Panel is organized every semester. Through the panel, students hear about a variety of options and meet other Widener students who have returned from abroad. Interested students are then directed to meet with the coordinator of undergraduate study abroad programs. In subsequent individual sessions, students will:

- find out about numerous programs through promotional materials and videos.
- discuss general goals and progress with the study abroad coordinator.
- meet with an academic advisor to discuss curricular options.
- obtain course transfer authorization using the study abroad course transfer form.
- notify the registrar of OC 100 status.
• contact the staff of Career Advising and Planning Services or the Co-op Office for advice on working abroad as an intern, co-op student, or worker in the economy.
• plan with the Student Financial Services Office for receiving continued aid.
• make additional arrangements as required by the individual programs.

The increasing number of Widener students going abroad indicates a growing interest in obtaining international experience during the undergraduate career. The success of participants requires some curricular flexibility, which can be best realized when students take initiative early. Students in majors with few free electives should speak with their deans or assistant deans for additional information.

SUMMER SESSIONS

The summer sessions at Widener provide accredited courses in the humanities; social sciences; engineering; biology; computer sciences; mathematics; physical sciences; accounting; economics; management; hospitality management; and nursing. Special course offerings are in accordance with interest and demand. Courses are offered in a variety of formats, but typical attendance in Monday through Thursday for a six-week period.

All classes and laboratories are conducted in fully air-conditioned facilities. There are also opportunities to use Widener’s state-of-the-art Wellness Center, which includes an Olympic-size swimming pool. Tuition, fees, and room and board charges for summer sessions are listed on the website and in the summer school bulletin published each spring.

In addition, there are two summer sessions during evening hours, each six weeks in length, weekend college, distance learning, and a variety of institutes, workshops, and special programs offered by University College.

CAMPUS SAFETY

Widener University is committed to the safety and security of all members of the Widener University community. The Widener University website contains information on campus security and personal safety, including crime prevention, university law enforcement authority, crime reporting policies, disciplinary procedures, and other campus security matters. It also contains statistics for the three previous calendar years on reported crimes that occurred on campus, in certain off-campus buildings or property owned and controlled by the university, and on public property within or immediately adjacent to and accessible from campus.

The annual Campus Safety security reports for the Main and Exton Campuses are available online at www.widener.edu by selecting “Quick Clicks” then “Campus Safety.” The annual security reports for the Delaware and Harrisburg Campuses are available online at www.law.widener.edu by selecting “Campus Life,” then “Campus Safety.” If you would like a printed copy of these reports, contact the Campus Safety Office at 610-499-4203 to have a copy mailed to you. The information in these reports is required by law and is provided by the Campus Safety Office.

SPECIAL PROGRAMS

PROJECT PREPARE

In 1969, Widener launched Project Prepare, the current Act 101 program at Widener University, to help educationally and economically disadvantaged students prepare for college. The project features a summer program for eligible high school seniors to prepare them for regular course enrollment in the fall. Core courses include writing, literature, math, success/study skills, introduction to computers, and introductions to various majors. In addition, seminars are designed to prepare students for specific majors.

To complete the summer program successfully and gain admission to Widener University for the fall semester, a student must have an overall grade point average of 2.30, not receive a failure in any course, and adhere to the university’s code of conduct. Credits earned in the program are not developmental and cannot be used to fulfill graduation requirements.

All Project Prepare students sign a contract that details the number of academic coaching sessions, peer mentoring sessions, tutoring, and other events required to remain an active participant in the program.

For more information contact the director of Project Prepare at 610-499-1193.

GRADUATE STUDIES

Widener University offers graduate programs in business, criminal justice, education, engineering, hospitality management, law, liberal studies, nursing, physical therapy, clinical psychology, public administration, and social work. For information, contact the Office of Graduate Studies at 610-499-4351.
ROTC PROGRAMS

ARMY ROTC

The Department of Military Science offers a program of study, open to male and female students, to be taken in conjunction with the curricula established for the academic majors. Upon completion of the ROTC program and fulfillment of all requirements for a baccalaureate degree, the student may receive a commission as a Second Lieutenant in the United States Army and is eligible for assignment with the Active or Reserve Forces of the U.S. Army.

For more information, contact the Widener University ROTC enrollment officer at 610-499-4098 or visit the ROTC office in Hanna Hall. See also the “Military Science” section of this Catalog.

BASIC COURSE (FRESHMEN/SOPHOMORES)

Students may enroll in the ROTC Basic Course without incurring any financial or military obligation. The basic course provides basic military instruction. Sophomore students who did not participate in ROTC during their freshman year may enroll during their sophomore year.

ROTC is a leadership development program. Its focus is on management techniques and leadership assessment. It includes a number of military and adventure activities designed to familiarize the student with the U.S. Army and develop the student’s leadership abilities through participation in such activities as orienteering, rappelling, small unit tactics, marksmanship, and various academic related subjects.

ADVANCED COURSE (JUNIORS/SENIORS)

Students who have either completed or received completion credit for the Basic Course are eligible to register for the Advanced Course. Completion credit is awarded for participation in JROTC in high school, completion of the four-week Leader’s Training Course at Fort Knox, enrollment in another service’s ROTC program, or completion of Army Basic Training. Upon acceptance, students are required to take one military science course each semester and participate in the Leadership Development Program. During this period, the students are paid a $450–500 per month subsistence allowance for each month enrolled in school. In addition, students must attend a five-week ROTC Leader Development and Assessment Course located at Fort Lewis, Washington. Students are paid approximately $850 plus travel expenses while attending this course.

ARMY ROTC SCHOLARSHIP PROGRAM

University students may compete for on-campus Army ROTC Scholarships for up to 3.5 years of tuition and books. See the “Financial Aid” section of this Catalog for details on ROTC scholarships.

ARMY ROTC TWO-YEAR PROGRAM

Widener University offers the Two-Year Army ROTC Program for those students transferring from junior colleges or other institutions at which ROTC was not offered or who were previously unable to enroll in an ROTC program. To participate in the two-year program, a student must attend a four-week Army ROTC Leader’s Training Course (LTC) at Fort Knox, Kentucky. Students interested in entering the two-year program must apply to the professor of military science prior to May 1 of their sophomore year. Students may compete for two-year Army ROTC scholarships. Students are paid approximately $750 plus travel expenses while attending LTC. Students with prior military service may validate the two-year program and enroll in the Advanced Course.

SIMULTANEOUS MEMBERSHIP PROGRAM

Students who are already members of or intend to join an Army Reserve or National Guard unit may qualify for this program. If accepted, students are officer trainees and paid as sergeants (E-5) until they have completed ROTC and are commissioned. During the years in ROTC, students are paid $450–500 per month in addition to Army Reserve or National Guard pay. Students cannot have a scholarship and be in the Simultaneous Membership Program unless they have a guaranteed Reserve Forces scholarship.

ACTIVE DUTY SERVICE

Students commissioned as second lieutenants are required to serve three or four years on active duty or eight years in the Army Reserve or National Guard. Scholarship cadets are obligated to serve four years on active duty. The Guaranteed Reserve Forces Duty Option allows participating students to serve three to six months on active duty and the remainder of their commitment in the Reserves or National Guard.
College of Arts and Sciences

The College of Arts and Sciences consists of the Divisions of Humanities, Social Science, and Science. Those subjects referred to as the “liberal arts” are to be found in humanities and social science. Courses in these areas provide opportunities for students who wish to obtain a broad undergraduate preparation for leadership roles in our society, for the development of creative talents that can address themselves to the value conflicts of contemporary society, and for intellectual development that adds to the richness of life.

GENERAL EDUCATION

The college recognizes a conceptual distinction between distribution requirements and general education requirements. Distribution requirements compel students to take a specific number of credits in each of the areas of humanities, science, and social science. General education requirements usually involve more direction. The assumption is that there are certain identifiable skills and knowledge areas that should be part of a baccalaureate program. Therefore, university distribution requirements, specifying that students complete 12 credits in each of the three areas, have been incorporated into the general education program developed by the college. The program is based upon the following goals and objectives:

1. A liberally educated person possesses knowledge beyond the boundaries of a chosen field or discipline and sustains a desire to pursue learning after leaving the university’s environment.
2. A liberally educated person communicates effectively.
   2.1. Students will be able to give a presentation before a group.
   2.2. Students will be able to write papers that require locating, analyzing, and formally referencing information sources to support conclusions.
   2.3. Students will be able to write and speak creatively and critically.
3. A liberally educated person uses quantitative methods effectively.
   3.1. Students will be able to use mathematical methods to solve problems.
   3.2. Students will be able to interpret, make inferences, and draw conclusions from data presented in tabular or graphical form.
   3.3. Students will be able to determine if numerical results are reasonable.
4. A liberally educated person cultivates an awareness of his/her place within the larger human community and the natural world.
   4.1. Students will be able to make rational and informed decisions about the use of science and technology in our society.
   4.2. Students will acquire aesthetic understanding and be able to articulate the social and historical context of the arts and philosophy.
   4.3. Students will understand societies and cultures, exploring the diversity of individuals, groups, and institutions.
   4.4. Students will recognize and analyze social issues from a range of theoretical perspectives.
   4.5. Students will gain knowledge and understanding of human behavior, events, societies, cultures, and social structures, and explanations of change over time from both historical and contemporary perspectives.
   4.6. Students will gain knowledge and understanding of the order, diversity, and beauty of the natural world and of their relationship to natural phenomena.
5. A liberally educated person understands and applies methods of inquiry and explanation.
   5.1. Students will understand and apply scientific methods.
   5.2. Students will understand and apply qualitative and quantitative methods to human behavior and social structures.
   5.3. Students will understand and apply historical methods.
   5.4. Students will be able to make aesthetic evaluations.
   5.5. Students will be able to create and support rationally defensible arguments, analyze and criticize the arguments of others, produce clear and adequate explanations, and critically evaluate the explanations of others.
   5.6. Students will understand ethical theories and apply them to issues of personal conduct and public policy.
6. A liberally educated person thinks critically.
   6.1. Students will be able to think, read, and communicate critically.
   6.2. Students will be able to take a critical stance in which everything is open to question.
   6.3. Students will show a willingness to accept ambiguity and uncertainty while questioning assumptions and ideas.
   6.4. Students will be able to recognize and apply the distinctions between reliability and validity.
   6.5. Students will recognize the limitations of the methods they use.
   6.6. Students will contemplate and evaluate competing explanatory models across and within disciplines.
   6.7. Students will integrate divergent contents and methodologies into a coherent liberal education experience.

REQUIREMENTS

The following general education requirements have been established for the College of Arts and Sciences.

SKILLS

Competence in writing, mathematics, critical thinking, and computer skills are identified as goals of general education.

Writing Skills—The writing general education requirements are:

• Writing Enriched Courses. In addition to ENGL 101, students must complete at least four courses (preferably one per year) that are designated as writing enriched.
• Annual Writing Sample. Each fall semester all students, except freshmen, will be given the writing sample administered by the Writing Center. Students who score at level 3 or below during the sophomore year, or at level 4 or below during the junior year will be referred to the Writing Center for additional help.
• Level 5 Competency. All students must attain level 5 competency on the writing sample prior to graduation. Students may satisfy the level 5 requirement any time in the junior or senior year. Students who do not attain level 5 during the fall of their junior year (or first semester of third year) will be encouraged to begin to satisfy the level 5 requirement early.

Mathematics Skills—The mathematics general education requirements are:

• Satisfactory score on the Mathematics Placement Exam or completion of MATH 101.
• Completion of one MATH course beyond MATH 101, or completion of PHIL 120. The MATH course counts as one of the required science general education courses; PHIL 120 counts as one of the required humanities general education courses.

Quantitative Reasoning—Completion of one course beyond the mathematics/PHIL 120 requirement designated “Quantitative Reasoning” (QR). QR courses expect students to (a) use simple mathematical methods from arithmetic, algebra, geometry, or statistics to solve problems; (b) determine if numerical results are reasonable; (c) recognize the limitations of the methods they have been taught to use; and (d) interpret, make inferences, and
draw conclusions from data presented in tabular or graphical form. These goals are a central focus, and emphasis on quantitative reasoning is sustained throughout the required course. QR courses are structured so that the emphasis is on students doing the reasoning. The students’ work in these courses takes the form of problem sets, projects, computer programs, field research, lab reports, and similar assignments, and involves a process of growth through opportunities to correct/revise assignments.

Computer Skills—Computer skills appropriate to the major.

Critical Thinking—Satisfied by courses in the major and the Values Seminar.

HUMANITIES (12 CREDITS)
Courses in the humanities foster a sense of historical consciousness, aesthetic appreciation, and philosophical judgment. The study of the humanities demands rigorous interpretation and openness to multiple perspectives. Through this program, students develop depth and breadth in their understanding of the human condition.

- History, art history, or music history course (3 credits)*
- Aesthetics/philosophy—Any course in literature (ENGL 130 or above, or 300-level modern language), art history, dance, creative writing, fine arts, music (excluding performance), philosophy, or studio art (3 credits)*
- Two additional courses in humanities (6 credits)

At least one of these four courses must be at an advanced level (300 level). This requirement may also be met by students taking two semesters of modern language at the elementary or intermediate level in the same language.

* The same course cannot be used to satisfy both the aesthetics/philosophy and the history requirements.

SCIENCE (12 CREDITS)
Awareness of the natural world requires cultivation of the knowledge of and insight into phenomena that affect all life forms. Observation and reflection lead scientists to propose explanations for natural and physical phenomena that have predictive power and are both testable and falsifiable through carefully controlled experimentation. The constant forming, testing, and revising of hypotheses define the process of science and lead to the formation of scientific knowledge. Integral to this process, scientists respect the beauty inherent in the order and diversity of the natural and the physical realms.

- Three to four science courses, including one semester of a science course with an associated laboratory (12 credits)

Students at Widener University are required to take 12 credits of science to learn how scientists acquire, synthesize, evaluate, and question knowledge. In these courses, students develop an understanding of how scientific knowledge is constructed and learn quantitative and qualitative skills necessary to develop models, propose and test hypotheses, and evaluate experimental results. Students learn how to access and clearly communicate scientific information, critically analyze conclusions, and judge the limits of scientific methods. As a result of these experiences, students acquire critical-thinking skills and an understanding of ethical conduct in science, thereby developing their ability to make rational, informed decisions about the use of science and technology in society.

SOCIAL SCIENCE (12 CREDITS)
Courses in the social sciences develop an appreciation for both the quantitative and qualitative methods for assessing human behaviors and interactions. Research questions are grounded in theoretical assumptions. The courses encompass a range of disciplines: anthropology, communication studies, criminal justice, government & politics, psychology, and sociology.

- Societal/cultural perspective—Two introductory social science courses in different fields (6 credits)
- Advanced study—Two additional courses in social science, one of which must be at an advanced level (200 level and above) (6 credits)

VALUES SEMINAR (3 CREDITS)
An upper-level interdisciplinary course that involves a discussion of values as affecting individual and societal decision making. Prerequisites: junior or senior status and completion of a minimum of 6 semester hours in each of the three divisions.

ACADEMIC REQUIREMENTS
Students are expected to make regular progress toward completion of course and cumulative grade-point average requirements for their major. In accordance with university requirements, a student will be dismissed who fails to meet the minimum standards for academic progress. A student who falls below a 2.0 cumulative average will be limited to 12 semester hours in the following semester. Subsequent failure to demonstrate progress toward the minimum standard will result in either a warning that the student is subject to dismissal at the next semester-end review or dismissal from the college.

THE CURRICULA

The major programs of the College of Arts and Sciences are explained in detail in the pages that follow.

Humanities Majors

- creative writing
- English
- fine arts
- French
- history
- Spanish

Social Science Majors

- anthropology
- communication studies
- criminal justice
- government and politics
- international relations
- psychology
- sociology

Interdisciplinary Majors

- women’s studies

Science Majors

- biochemistry
- biology
- chemistry
- computer information systems
- computer science
- environmental science
- mathematics
- physics
- science administration
- science education

Double Majors

- criminal justice/gov’t & politics
- criminal justice/psychology
- criminal justice/sociology
- environmental science/biology
- mathematics/computer science
- creative writing/English
- chemistry/chemical engineering
- psychology/social work

Besides courses within the major programs of Arts and Sciences, students can also pursue studies in art, music, and philosophy. In addition, the teacher education program in the School of Human Service Professions makes it possible for students majoring in the College of Arts and Sciences to obtain certification as an early childhood, elementary, special education, and secondary school teacher in a number of areas, including English, modern languages, the sciences, and social studies. Students interested in the teaching profession should consult the “Center for Education” section of this Catalog.

Students invited to participate in the Honors Program in General Education can take honors sections of Arts and Sciences courses. These can be used to fulfill requirements in majors and general education. These courses include Freshman Honors English and the Freshman Honors Seminar in the social sciences and humanities. History majors may graduate with honors upon fulfillment of the Honors in History requirements.

In the course of a student’s college career, total semester hours will be divided among distribution requirements, a major field of concentration, subjects allied to and supporting the
major, and free electives. Students can structure their free electives to pursue one of the minors listed below. A number of multidisciplinary certificate programs are also available to Arts and Sciences majors.

Within the College of Arts and Sciences, minors are offered in each of the three divisions: humanities, social science, and science. The purpose of minors is to permit students in arts and sciences and other majors to enhance their undergraduate education. A minimum of 50 percent of the credits in a student’s minor must be completed at Widener.

**Humanities Minors**
- creative writing
- English
- French
- history
- Italian
- journalism
- music
- professional writing
- Spanish
- visual art

**Social Science Minors**
- anthropology
- communication studies
- criminal justice
- government and politics
- international relations
- psychology
- sociology

**Science Minors**
- astronomy
- biochemistry
- biology
- chemistry
- computer information systems
- computer science
- environmental science
- experimental science
- mathematics
- natural science
- physics

**Interdisciplinary Minor**
- women’s studies

**Pre-Law Minor**
- legal studies and analysis

MINOR IN LEGAL STUDIES AND ANALYSIS

This minor is designed to provide prospective law students with sound academic preparation in the skill areas required for success on the LSAT (Law School Admission Test), a critical factor in the law school admission process, and in the study and practice of law itself. The primary skill areas covered by the courses included in the minor are logical reasoning, analytical reasoning, and reading comprehension. Since most students will take the LSAT in June following their junior year, they should begin completing the courses for this minor in the second semester of their freshman year if at all possible. Students interested in pursuing the study of law and/or the minor should discuss it as soon as possible with their academic advisor. Further information about the minor and the study of law is available through the university’s pre-law advisors and through active participation in the Pre-Law Society. Pre-law students are urged to complete the minor as a way of acquiring requisite skills.

**MINOR IN LEGAL STUDIES AND ANALYSIS**

BLAW 150 Legal & Ethical Environment of Business*
GP 101 American Government & Politics (prerequisite)
GP 218 Law & Society**
PHIL 105 Introduction to Logic
PRWR 215 Effective Communication

**Two courses from the following:**
GP 319 Introduction to Constitutional Law**
GP 320 Constitutional Rights & Liberties**
CJ 325 Criminal Law & Procedure**

**TOTAL CREDITS** 24

*All of the courses in the minor except PRWR 215 and BLAW 150 meet General Education Distribution requirements.

**These courses employ a case-approach and are therefore excellent preparation for the LSAT.

PRE-MEDICAL CONCENTRATION

The Pre-Medical Committee of the College of Arts and Sciences has approved the following concentration of courses to assist students preparing for the study of medicine, optometry, dentistry, podiatric medicine, and veterinary medicine. Students are encouraged to consult with the pre-medical advisor to plan their programs. The courses listed as foundation courses satisfy the entrance requirements of most health professions schools. To be competitive, a student should have a cumulative average of 3.5 or better overall and in the sciences at the end of the junior year. Most medical and health professions schools minimally require two courses in biology, four courses in chemistry, two courses in physics, two courses in English, and two courses in mathematics. See also page 49.

**FOUNDATION COURSES**—46 or 50 credits

Biology with laboratory—8 credits
- BIOL 261 Biological Concepts III
- BIOL 262 Principles of Modern Genetic Analysis

Chemistry with laboratory—18 credits
- CHEM 145 & 147 General Chemistry I
- CHEM 146 & 148 General Chemistry II
- CHEM 255 & 257 Organic Chemistry I
- CHEM 256 & 258 Organic Chemistry II

English—6 credits
- ENGL 101 Composition and Critical Thought
- ENGL 102 Advanced Composition and Literature or
- ENGL 103 Freshman Honors English and
- ENGL 300-level literature course

Mathematics—6 or 8 credits
- MATH 114 & 116 Calculus I and II or
- MATH 117 & 119 Calculus I and II with review or
- MATH 117 Elementary Functions and
- MATH 118 Elementary Calculus I

Physics with laboratory—5 or 10 credits
- PHYS 161 & 163 Physics I
- PHYS 162 & 164 Physics II or
- PHYS 141 & 142 College Physics I and II

**SUGGESTED ADVANCED CONCENTRATIONS**—20 credits

Two 300-level courses in biochemistry, biology, chemistry, or physics.

Two 300-level courses in English (literature focus), history, or modern language.

Two 300-level courses in anthropology, behavioral sciences, psychology, or sociology.

THE HUMANITIES

Curricula ladders for creative writing, English, fine arts, history, and modern languages are listed on the pages that follow. The humanities foster a sense of historical consciousness, aesthetic appreciation, and philosophical judgment. The study of the humanities demands rigorous interpretation and openness to multiple perspectives. Through this program, students develop depth and breadth in their understanding of the human condition. Students majoring in one of the humanities should work out a sound, balanced program of study in close consultation with their faculty advisors. Such a program would include a range of courses within the chosen field of study, as well as coursework in related disciplines.

The curricula offerings for each major in the humanities follow a logical sequence; students should be advised to begin their course of study with lower-level classes. In addition to fulfilling the requirements leading to a bachelor of arts in the above fields, students can also pursue coursework in arts, art studio, art history, dance, music history, music performance, philosophy, and theater.
The humanities faculty is committed to facilitating student learning and inquiry in all areas of the division, and to the development of strong writing, speaking, and critical thinking skills.

**CREATIVE WRITING**

**CURRICULUM—CREATIVE WRITING**

<table>
<thead>
<tr>
<th>Term</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Freshman Fall</td>
<td>15.5/16.5</td>
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<tr>
<td>ENGL 101</td>
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<td>Math requirement</td>
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<tr>
<td>Social science requirement</td>
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<tr>
<td>CRWR 151</td>
<td>3</td>
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<tr>
<td>Physical Education Elective</td>
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<tr>
<td>Freshman Spring</td>
<td>15.5/16.5</td>
</tr>
<tr>
<td>ENGL 102</td>
<td>.5</td>
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<tr>
<td>Humanities requirement</td>
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<td>Science requirement</td>
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<tr>
<td>Social science requirement</td>
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<tr>
<td>ENGL 131, 132, 133, or 134</td>
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<td>Physical Education Elective</td>
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<td>Sophomore Fall</td>
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<tr>
<td>ENGL 131, 132, 133, or 134</td>
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<tr>
<td>Electives</td>
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<td>Sophomore Spring</td>
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<td>Electives</td>
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<tr>
<td>Junior Fall</td>
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<td>CRWR 305, 306, 307, or 308</td>
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<td>Advanced English courses</td>
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<td>Advanced writing course</td>
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<td>Junior Spring</td>
<td>15</td>
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<tr>
<td>CRWR 305, 306, 307, or 308</td>
<td>3</td>
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<tr>
<td>Advanced English courses</td>
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<tr>
<td>Advanced writing course</td>
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<td>Elective</td>
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<td>Senior Fall</td>
<td>15</td>
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<td>CRWR 305, 306, 307, or 308</td>
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<td>CRWR 361</td>
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<td>Advanced English course</td>
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<td>Advanced writing course</td>
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<td>ASC 400 Values Seminar</td>
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<td>Senior Spring</td>
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<td>CRWR 305, 306, 307, or 308</td>
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<td>CRWR 409</td>
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<td>Advanced English course</td>
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<td>Electives</td>
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</tbody>
</table>

**TOTAL CREDITS** 121/122

_A minimum of 9 semester hours of advanced English should be in courses before 1800, and a minimum of 9 semester hours in courses after 1800._

**CREATIVE WRITING MAJOR PORTFOLIO**

All creative writing majors will compile a portfolio. This portfolio is designed to give students and creative writing faculty a cumulative vision of the quality of the students’ work over the course of their years in the major. As they progress through the creative writing program, students will continually update their portfolios by adding required elements. Students will receive a list of required elements from their major advisor when they declare.

**REQUIREMENTS—CREATIVE WRITING MINOR**

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<thead>
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<th>Course</th>
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<td>CRWR 151</td>
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<tr>
<td>CRWR 305, 306, 307, 308 (3 of 4)</td>
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<tr>
<td>CRWR 351, 361, 379 (2 of 3)</td>
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<tr>
<td>300-level English course</td>
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**TOTAL CREDITS** 21

**ENGLISH**

**CURRICULUM—ENGLISH**

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<th>Term</th>
<th>Credits</th>
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<tr>
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<td>English 101</td>
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<td>Math requirement</td>
<td>3/4</td>
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<tr>
<td>Social science requirement</td>
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<tr>
<td>ENGL 131, 132, 133, or 134</td>
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<tr>
<td>Physical Education Elective</td>
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<tr>
<td>Freshman Spring</td>
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<tr>
<td>English 102</td>
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<td>Humanities requirement</td>
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<td>Social science requirement</td>
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<td>Physical Education Elective</td>
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<td>Sophomore Fall</td>
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<td>Humanities requirement</td>
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<td>Science requirement</td>
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<td>Electives</td>
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<td>Junior Fall</td>
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<td>Advanced English courses</td>
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<td>Advanced humanities course</td>
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<td>Electives</td>
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<td>ASC 400 Values Seminar</td>
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</tbody>
</table>

**TOTAL CREDITS** 121/122

_A minimum of 9 semester hours of advanced English should be in courses before 1800, and a minimum of 9 semester hours in courses after 1800._

**ENGLISH MAJOR PORTFOLIO**

All English majors will compile a portfolio. This portfolio is designed to give students and English faculty a cumulative vision of the quality of the students’ work over the course of their years in the major. As they progress through the English program, students will continually update their portfolios by adding required elements. Students will receive a list of required elements from their major advisor when they declare.
CERTIFICATION IN ENGLISH EDUCATION
The prescribed course of study is listed under the “Center for Education” section of this Catalog.

PRE-LAW OPTION FOR THE ENGLISH MAJOR
English is a traditional major for pre-law students. Consult your advisor or the associate dean of the Humanities Division for suggestions concerning various ways to work out an English program as preparation for law school. See the “Pre-Law Concentration” section of this Catalog.

REQUIREMENTS—ENGLISH MINOR  

<table>
<thead>
<tr>
<th>Credits</th>
<th>Required Courses</th>
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<tbody>
<tr>
<td>300-level English courses (3 hours in literature before 1800; 3 hours in literature after 1800; 9 hours of electives of which only 3 hours may be a writing course)</td>
<td>15</td>
</tr>
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</table>

TOTAL CREDITS 21

CURRICULUM—DUAL CREATIVE WRITING AND ENGLISH  

<table>
<thead>
<tr>
<th>Credits</th>
<th>Required Courses</th>
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<tbody>
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<td>Freshman Fall</td>
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<td>ENGL 101</td>
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<td>Humanities requirement</td>
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<td>Math requirement</td>
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<td>Social science requirement</td>
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<td>CRWR 151</td>
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<td>Physical Education Elective</td>
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<td>Freshman Spring</td>
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<td>ENGL 102</td>
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<td>Sophomore Spring</td>
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<td>Science requirement</td>
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<td>ENGL 301</td>
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<td>CRWR 305, 306, 307, or 308</td>
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</tr>
<tr>
<td>Advanced English courses</td>
<td>6</td>
</tr>
<tr>
<td>Advanced humanities course</td>
<td>3</td>
</tr>
<tr>
<td>Advanced writing course</td>
<td>3</td>
</tr>
<tr>
<td>Junior Spring</td>
<td>15</td>
</tr>
<tr>
<td>CRWR 305, 306, 307, or 308</td>
<td>3</td>
</tr>
<tr>
<td>Advanced English courses</td>
<td>6</td>
</tr>
<tr>
<td>Advanced writing course</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
</tr>
<tr>
<td>Senior Fall</td>
<td>15</td>
</tr>
<tr>
<td>CRWR 305, 306, 307, or 308</td>
<td>3</td>
</tr>
<tr>
<td>CRWR 361</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 409</td>
<td>3</td>
</tr>
<tr>
<td>Advanced writing course</td>
<td>3</td>
</tr>
<tr>
<td>ASC 400 Values Seminar</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL CREDITS 45–55

NOTE: Some courses may have prerequisites or corequisites.

CREATIVE WRITING/ENGLISH DUAL MAJOR PORTFOLIO
All creative writing/English dual majors will compile a portfolio. This portfolio is designed to give students and creative writing/English faculty a cumulative vision of the quality of the students’ work over the course of their years in the major. As they progress through the creative writing/English program, students will continually update their portfolios by adding required elements. Students will receive a list of required elements from their major advisor when they declare.

REQUIREMENTS—CERTIFICATE IN HEALTH CARE WRITING  

<table>
<thead>
<tr>
<th>Credits</th>
<th>Required Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRWR 100</td>
<td>3</td>
</tr>
<tr>
<td>PRWR 320</td>
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</tr>
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<td>PRWR 350</td>
<td>3</td>
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<td>PRWR 370</td>
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<td>PRWR 380</td>
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<tr>
<td>PRWR 405</td>
<td>3</td>
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<tr>
<td>HUM 340 or 341</td>
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<tr>
<td>PHIL 350 or 352 or 379</td>
<td>3</td>
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<tr>
<td>One course selected from: PSY 211, PSY 212, PSY 325, PSY 350, or SOC 310</td>
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</tr>
<tr>
<td>One course selected from: BIOL 299, MATH 114, ENGL 381, PSY 385, or QA 251</td>
<td>3/4</td>
</tr>
<tr>
<td>One biology sequence selected from: BIOL 121, 122, 230; or BIOL 161, 162, 261, 262</td>
<td>11/16</td>
</tr>
<tr>
<td>One chemistry sequence selected from: CHEM 101, 102, 103, 104; or CHEM 105, 106; or CHEM 145, 146, 147, 148</td>
<td>4/8</td>
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</table>

TOTAL CREDITS 45–55

REQUIREMENTS—JOURNALISM MINOR  

<table>
<thead>
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<th>Required Courses</th>
</tr>
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<tr>
<td>PRWR 215</td>
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<td>PRWR 350</td>
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<tr>
<td>ENGL 310</td>
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<tr>
<td>COMS 130</td>
<td>3</td>
</tr>
<tr>
<td>GP 101 or IR 204</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 352</td>
<td>3</td>
</tr>
<tr>
<td>Practicum: Four or more semesters on the campus newspaper. Portfolio: Published story clips.</td>
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</table>

TOTAL CREDITS 21
### Requirements—Professional Writing Minor

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
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<td>PRWR 215</td>
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<tr>
<td>PRWR 320</td>
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</tr>
<tr>
<td>PRWR 350</td>
<td>3</td>
</tr>
<tr>
<td>Three courses selected from: PRWR 330, PRWR 340, PRWR 370, PRWR 380, PRWR 395, PRWR 405</td>
<td>9</td>
</tr>
<tr>
<td>Practicum: One or more semesters on a campus media group. Portfolio: Key writing samples.</td>
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</table>

### Total Credits

21

### Fine Arts

#### Curriculum—Fine Arts

<table>
<thead>
<tr>
<th>Semester</th>
<th>Credits</th>
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<td><strong>Freshman Fall</strong></td>
<td>15.5/16.5</td>
</tr>
<tr>
<td>AH 101 or MUS 101</td>
<td>3</td>
</tr>
<tr>
<td>English 101</td>
<td>3</td>
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<tr>
<td>Humanities requirement or ARTS 101</td>
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<td>Math requirement</td>
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<tr>
<td>Physical Education Elective</td>
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</tr>
<tr>
<td><strong>Freshman Spring</strong></td>
<td>15.5/16.5</td>
</tr>
<tr>
<td>English 102</td>
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<tr>
<td>Science requirement</td>
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<td>Social science requirement</td>
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</tr>
<tr>
<td>Physical Education Elective</td>
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<tr>
<td>Practicum or elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Sophomore Fall</strong></td>
<td>15/16</td>
</tr>
<tr>
<td>AH 101 or MUS 101</td>
<td>3</td>
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<tr>
<td>Humanities requirement</td>
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<tr>
<td>Science requirement</td>
<td>3/4</td>
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<tr>
<td>Social science requirement</td>
<td>3</td>
</tr>
<tr>
<td>Practicum or elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Sophomore Spring</strong></td>
<td>15/16</td>
</tr>
<tr>
<td>Humanities requirement</td>
<td>3</td>
</tr>
<tr>
<td>Science requirement</td>
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<tr>
<td>Social science requirement</td>
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</tr>
<tr>
<td>Electives</td>
<td>6</td>
</tr>
<tr>
<td><strong>Junior Fall</strong></td>
<td>15</td>
</tr>
<tr>
<td>300-level art history</td>
<td>3</td>
</tr>
<tr>
<td>300-level music history</td>
<td>3</td>
</tr>
<tr>
<td>300-level AH, 300-level MUS, or ENGL 325, 336, 338, 362</td>
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<tr>
<td>PHIL 380</td>
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<tr>
<td>Elective</td>
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<tr>
<td><strong>Junior Spring</strong></td>
<td>15</td>
</tr>
<tr>
<td>300-level art history</td>
<td>3</td>
</tr>
<tr>
<td>300-level music history</td>
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<tr>
<td>300-level AH, 300-level MUS, or ENGL 325, 336, 338, 362</td>
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</tr>
<tr>
<td>Humanities requirements</td>
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</tr>
<tr>
<td><strong>Senior Fall</strong></td>
<td>15</td>
</tr>
<tr>
<td>300-level art history</td>
<td>3</td>
</tr>
<tr>
<td>300-level music history</td>
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<tr>
<td>ARTS 409 (Senior Seminar)</td>
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<tr>
<td>Electives</td>
<td>6</td>
</tr>
<tr>
<td><strong>Senior Spring</strong></td>
<td>15</td>
</tr>
<tr>
<td>ASC 400 Values Seminar</td>
<td>3</td>
</tr>
<tr>
<td>300-level humanities electives</td>
<td>6</td>
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<tr>
<td>Electives</td>
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#### Total Credits

121/122

### Curriculum—Fine Arts with Arts Management Concentration

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<th>Semester</th>
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<tr>
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<td>AH 101 or MUS 101</td>
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</tr>
<tr>
<td>English 101</td>
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<td>Math requirement</td>
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<tr>
<td>Social science requirement</td>
<td>3</td>
</tr>
<tr>
<td>Physical Education Elective</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>Freshman Spring</strong></td>
<td>15.5/16.5</td>
</tr>
<tr>
<td>English 102</td>
<td>3</td>
</tr>
<tr>
<td>Humanities requirement</td>
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<tr>
<td>Science requirement</td>
<td>3/4</td>
</tr>
<tr>
<td>Social science requirement</td>
<td>3</td>
</tr>
<tr>
<td>Practicum or elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Sophomore Fall</strong></td>
<td>15/16</td>
</tr>
<tr>
<td>AH 101, ARTS 101, or MUS 101</td>
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</tr>
<tr>
<td>Science requirement</td>
<td>3/4</td>
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<tr>
<td>ECON 201</td>
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<td>Practicum or elective</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 111</td>
<td>3</td>
</tr>
<tr>
<td><strong>Sophomore Spring</strong></td>
<td>15/16</td>
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<tr>
<td>Science requirement</td>
<td>3/4</td>
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<tr>
<td>BUS 110</td>
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<td>ACCT 204</td>
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<td>ECON 202</td>
<td>3</td>
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<tr>
<td>Humanities requirement</td>
<td>3</td>
</tr>
<tr>
<td><strong>Junior Fall</strong></td>
<td>15</td>
</tr>
<tr>
<td>300-level art history</td>
<td>3</td>
</tr>
<tr>
<td>300-level music history</td>
<td>3</td>
</tr>
<tr>
<td>300-level AH, 300-level MUS, or ENGL 325, 336, 338, 362</td>
<td>3</td>
</tr>
<tr>
<td>Humanities requirements</td>
<td>6</td>
</tr>
<tr>
<td><strong>Senior Fall</strong></td>
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<tr>
<td>300-level art history</td>
<td>3</td>
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<tr>
<td>300-level music history</td>
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<tr>
<td>ARTS 409 (Senior Seminar)</td>
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<td>MKT 300</td>
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<tr>
<td>Elective</td>
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</tr>
<tr>
<td><strong>Senior Spring</strong></td>
<td>15</td>
</tr>
<tr>
<td>ASC 400 Values Seminar</td>
<td>3</td>
</tr>
<tr>
<td>300-level humanities electives</td>
<td>6</td>
</tr>
<tr>
<td>Electives</td>
<td>6</td>
</tr>
</tbody>
</table>

#### Total Credits

121/122

### Pre-Physical Therapy

Fine arts majors who wish to pursue a pre-physical therapy curriculum that will enable them to apply for admission to Widener’s graduate physical therapy program during their junior year should consult the pre-physical therapy curriculum ladders on pages 103–110.
### ARTS MINOR

<table>
<thead>
<tr>
<th>CONCENTRATION IN ART</th>
<th>Credits</th>
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<tbody>
<tr>
<td>AH 101 and 102</td>
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<tr>
<td>Three additional art history courses</td>
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</tr>
<tr>
<td>AS 111, 112, 121, 122, 131, or 301</td>
<td>3</td>
</tr>
<tr>
<td>MUS 101 and 102</td>
<td>6</td>
</tr>
<tr>
<td>Elective—To be taken as an additional 300-level course in art history, creative writing, music, or aesthetics (PHIL 380)</td>
<td>3</td>
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</table>

**TOTAL CREDITS**: 27

<table>
<thead>
<tr>
<th>CONCENTRATION IN MUSIC</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MUS 101 and 102</td>
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<tr>
<td>MUS 120</td>
<td>3</td>
</tr>
<tr>
<td>Two additional 300-level music courses</td>
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<tr>
<td>Music Activity</td>
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</tr>
<tr>
<td>AH 101 and 102</td>
<td>6</td>
</tr>
<tr>
<td>Elective—To be taken as an additional 300-level course in art history, creative writing, music, or aesthetics (PHIL 380)</td>
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**TOTAL CREDITS**: 27

<table>
<thead>
<tr>
<th>CONCENTRATION IN ARTS ADMINISTRATION</th>
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<td>ACCT 204</td>
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<td>AH 102</td>
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<td>ARTS 111</td>
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<td>ARTS 311</td>
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<td>EC 202</td>
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<td>MKT 300</td>
<td>3</td>
</tr>
<tr>
<td>MUS 102</td>
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<tr>
<td>Two from AH 301, 302, 303, 304, 305, 306, 310, 312, 314, 321, 322, 370</td>
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</tr>
<tr>
<td>Two from MUS 306, 307, 308, 309, 371, 391</td>
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</tr>
<tr>
<td>One from 300-level AH, 300-level MUS, ENGL 325, 336, 338, 362</td>
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</table>

**TOTAL CREDITS**: 36


### HISTORY

**CURRICULUM—HISTORY**

<table>
<thead>
<tr>
<th>Credits</th>
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<tbody>
<tr>
<td>Freshman Fall</td>
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<tr>
<td>ENGL 101</td>
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<tr>
<td>Humanities requirement</td>
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<tr>
<td>Math requirement</td>
</tr>
<tr>
<td>Social science requirement</td>
</tr>
<tr>
<td>HIST 100, 101, 102, 104, 121, or 122</td>
</tr>
<tr>
<td>Physical Education Elective</td>
</tr>
<tr>
<td>Sophomore Fall</td>
</tr>
<tr>
<td>HIST 100, 101, 102, 104, 121, or 122</td>
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<tr>
<td>Humanities requirement</td>
</tr>
<tr>
<td>Science requirement</td>
</tr>
<tr>
<td>Social science requirement</td>
</tr>
<tr>
<td>Elective</td>
</tr>
<tr>
<td>Junior Fall</td>
</tr>
<tr>
<td>Advanced history courses</td>
</tr>
<tr>
<td>Advanced humanities course</td>
</tr>
<tr>
<td>Electives</td>
</tr>
<tr>
<td>Junior Spring</td>
</tr>
<tr>
<td>Advanced history course</td>
</tr>
<tr>
<td>Advanced humanities course</td>
</tr>
<tr>
<td>Electives</td>
</tr>
<tr>
<td>Senior Fall</td>
</tr>
<tr>
<td>Advanced history courses</td>
</tr>
<tr>
<td>Senior Seminar</td>
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<tr>
<td>Elective</td>
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<td>Senior Spring</td>
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<tr>
<td>Advanced history courses</td>
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<tr>
<td>Electives</td>
</tr>
<tr>
<td>ASC 400 Values Seminar</td>
</tr>
</tbody>
</table>

**TOTAL CREDITS**: 121/122

A minimum of 6 semester hours of advanced history will be in U.S. history, a minimum of 6 semester hours will be in European history, and a minimum of 6 semester hours will be in non-Western history.
HISTORY MAJOR PORTFOLIO
All history majors will compile a portfolio. This portfolio is designed to give individual students and history faculty a cumulative vision of the quality of the students’ work over the course of their years in the major. As they progress through the history program, students will continually update their portfolios by adding required elements:

- Résumé
- Source-based expository essay
- Secondary source analysis
- Primary source analysis
- Historiographic essay
- Research paper
- Sophomore self-assessment
- Senior self-assessment

HONORS IN HISTORY
Students may graduate with honors in history if they satisfy the following requirements:

- Maintain a grade-point average of 3.5 in upper division history courses (with no grade lower than a B) and an over-all grade-point average of 3.2.
- Achieve a grade of A- or better in History 409.
- Make at least one research presentation in a public forum (such as the regional and national Phi Alpha Theta conferences, the National Conference for Undergraduate Research, or Widener University’s Honors Week presentations).

PRE-LAW OPTION FOR THE HISTORY MAJOR
History is a traditional major for pre-law students. Consult your advisor or the associate dean of the Humanities Division for suggestions concerning the various ways the law-oriented student can work out a history program as preparation for law school. See the “Pre-law Concentration” section of this Catalog.

HISTORY MINOR
A total of 21 semester hours in history with no more than 6 semester hours in lower division (under 300-level) courses.

MODERN LANGUAGES
Majors are available in French and Spanish.
Advanced ML courses are in student’s designated major.

MODERN LANGUAGES MINOR*

<table>
<thead>
<tr>
<th>Language</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary language</td>
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</tr>
<tr>
<td>Intermediate language</td>
<td>6</td>
</tr>
<tr>
<td>Conversation and composition</td>
<td>3</td>
</tr>
<tr>
<td>Civilization and culture course</td>
<td>3</td>
</tr>
<tr>
<td>Literature course</td>
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<tr>
<td>ML elective (at 300 level)</td>
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</tbody>
</table>

TOTAL CREDITS 24

Minors are available in French, Italian, and Spanish.
To complete the Modern Language minor, students must take at least 50% of their upper division language courses at Widener.

CURRICULUM—MODERN LANGUAGES
(FRENCH OR SPANISH MAJOR)

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<th>Course</th>
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</tr>
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<td></td>
<td>Humanities requirement</td>
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<tr>
<td></td>
<td>Math requirement</td>
<td>3/4</td>
</tr>
<tr>
<td></td>
<td>Social science requirement</td>
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</tr>
<tr>
<td></td>
<td>FREN 101 or SPAN 101</td>
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</tr>
<tr>
<td></td>
<td>Physical Education Elective</td>
<td>0.5</td>
</tr>
<tr>
<td>Freshman Spring</td>
<td>ENGL 102</td>
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</tr>
<tr>
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<td></td>
<td>Science requirement</td>
<td>3/4</td>
</tr>
<tr>
<td></td>
<td>Social science requirement</td>
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</tr>
<tr>
<td></td>
<td>FREN 102 or SPAN 102</td>
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<td>Sophomore Fall</td>
<td>FREN 201 or SPAN 201</td>
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<td>Science requirement</td>
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<td></td>
<td>Social science requirement</td>
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<td>Elective</td>
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<tr>
<td>Sophomore Spring</td>
<td>FREN 202 or SPAN 202</td>
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<td>Humanities requirement</td>
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<td>Science requirement</td>
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<td>Social science requirement</td>
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<td></td>
<td>Elective</td>
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</tr>
<tr>
<td>Junior Fall</td>
<td>FREN 301 or SPAN 301</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Civilization and culture course</td>
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</tr>
<tr>
<td></td>
<td>Advanced FREN or SPAN: Literature</td>
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<tr>
<td></td>
<td>Elective or second language</td>
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</tr>
<tr>
<td></td>
<td>Elective</td>
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</tr>
<tr>
<td>Junior Spring</td>
<td>FREN 302 or SPAN 302</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Advanced FREN or SPAN: Literature</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Civilization and culture course</td>
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<td></td>
<td>Elective or second language</td>
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<tr>
<td></td>
<td>Elective</td>
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</tr>
<tr>
<td>Senior Fall</td>
<td>FREN 409 or SPAN 409</td>
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<td></td>
<td>Elective or second language</td>
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<td>Electives</td>
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<tr>
<td></td>
<td>ASC Values Seminar</td>
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</tbody>
</table>

TOTAL CREDITS 121/122

CERTIFICATION IN MODERN LANGUAGE EDUCATION
The prescribed course of study is listed under the Center for Education section of this Catalog.
For ML education certification, students must take ML 330 in place of one advanced (300-level) language course in the major.
THE SOCIAL SCIENCES

The curricula ladders for anthropology, communication studies, criminal justice, government and politics, international relations, psychology, and sociology are listed on the pages that follow.

The goals of the Social Science Division are threefold: to give students the broad and varied educational experiences necessary for them to be informed and useful citizens in today’s complex and ever-changing world; to enable students to pursue major areas of study that will prepare them for professional careers after graduation; and to provide students with the opportunity to relate their coursework in a meaningful fashion to the real world through direct placements in organizations and community agencies.

There are three broad fields represented within the Social Science Division: behavioral sciences (includes majors in anthropology, criminal justice, psychology, and sociology), government and politics (includes international relations and government and politics), and communication studies. Students must achieve a grade-point average of 2.0 in courses required for the major. Brief descriptions of each field and of the courses required for each major are given below.

Educational Options for Individualized Curricula in the Social Sciences

The Social Science Division has a number of educational options that may be combined with most of its major programs. By selecting one of the options that includes minors and double majors, it is possible for students to develop individualized courses of study compatible with their career plans or their plans for graduate and professional education. Advisors work closely with students at the end of their freshman year to plan their programs in order to insure that their education is consistent with their long-range interests.

ANTHROPOLOGY

Anthropology emphasizes a broad understanding of the variety of human adaptations to the natural world through systems of cultural belief, behavior, and attitude; social organization; and genetic variation. The unique contribution of anthropology to the social sciences has been a holistic approach to understanding human origins and society. It emphasizes a four-field approach including ethnography (study of contemporaneous cultures), archaeology (study of cultural evolution), linguistics (language and culture), and biological anthropology (study of biological origins and the relation of biological factors and cultural behavior). The subfields are drawn together by ethology (cross-cultural comparison) to present a complex, multilayered understanding of human adaptations and the tools to research them.

Within anthropology you can tailor your program to fit your individual needs. Emphasizing cultural courses serves those who want to work in a multicultural environment, go on to graduate study in anthropology, take a certificate (e.g., education), or do a pre-law or related program. Combining cultural studies with management and economics courses serves those who want to pursue a career in business or international economic development. Emphasizing the biological side of anthropology is for people who want to pursue graduate school in anthropology, medicine, physical therapy, anatomy, forensic investigation, or the like.

CERTIFICATE AND PRE-PROFESSIONAL PROGRAMS

Students in the anthropology major are encouraged to complement their study with minors in other programs and certificate opportunities in other disciplines. It is particularly appropriate for those pursuing early childhood, elementary, or secondary education certificates, pre-physical therapy, forensic anthropology, or other minors in international business, management, government and politics, international relations, political economy, bio-psych, industrial/organizational or social psychology, pre-med, environmental science, sociology (with emphasis on organization or urban sociology), criminal justice, and economics.

REQUIREMENTS—ANTHROPOLOGY MAJOR

<table>
<thead>
<tr>
<th>Requirements and Electives</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>Introduction to the Field for Cultural Track Students (13 credits)</td>
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<tr>
<td>ANTH 105 Cultural Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 204 Physical Anthropology*</td>
<td>4</td>
</tr>
<tr>
<td>ANTH 216 Anthropological Archaeology or ANTH 217 Biblical Archaeology</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 314 Language &amp; Culture or ENGL 326 Languages &amp; Cultures</td>
<td>3</td>
</tr>
<tr>
<td>*Counts as a lab science course for general education distribution.</td>
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</tr>
<tr>
<td>Introduction to the Field for Biology Track or Anthropology Pre-Physical Therapy Students (13 credits)</td>
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</tr>
<tr>
<td>ANTH 105 Cultural Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 204 Physical Anthropology*</td>
<td>4</td>
</tr>
<tr>
<td>ANTH 207 Human Evolution or ANTH 208 Race &amp; Racism</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 216 Anthropological Archaeology</td>
<td>3</td>
</tr>
<tr>
<td>*Counts as a lab science course for general education distribution.</td>
<td></td>
</tr>
<tr>
<td>Culture Area Courses* (3 credits)</td>
<td></td>
</tr>
<tr>
<td>ANTH/GP 241 China</td>
<td>3</td>
</tr>
<tr>
<td>ANTH/GP 242 Japan</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 243 The Middle East</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 244 Africa</td>
<td>3</td>
</tr>
<tr>
<td>*The courses that qualify must be certified by the advisor.</td>
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</tr>
<tr>
<td>Advanced Anthropology Electives (9 credits)</td>
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</tr>
<tr>
<td>Three 200- or 300-level courses approved by the advisor. Students should consult with the advisor to pick those that best fit their goals.</td>
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</tr>
<tr>
<td>Social Science Electives (6 credits)</td>
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</tr>
<tr>
<td>Two nontechnical courses in the other social sciences (psychology, government &amp; politics, communications, criminal justice, sociology). Students should consult with the advisor to pick those that best fit their goals. Biology students can substitute biology and chemistry courses for social science and related fields electives.</td>
<td></td>
</tr>
<tr>
<td>Related Fields Electives (3–4 credits)</td>
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</tr>
<tr>
<td>One course in the sciences or humanities that is appropriate for the student’s special goals and approved by the advisor.</td>
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</tr>
<tr>
<td>Research Sequence (12–13 credits)</td>
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</tr>
<tr>
<td>ANTH 382 Ethnographic Research Methods</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 409/410 Senior Research</td>
<td>6</td>
</tr>
<tr>
<td>PSY 385 Statistics (for those concentrating in biological anthropology or pre-physical therapy) [4 credits] or ANTH 304 Anthropological Theory &amp; Development Literature (for those concentrating in cultural studies) or other course approved by the advisor [3 credits]</td>
<td>4/3</td>
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<tr>
<td>TOTAL CREDITS</td>
<td>46–47</td>
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</table>
**COMMUNICATION STUDIES**

The communication studies program draws on the theories and perspectives of the social sciences and humanities to analyze and understand the role of the mass media in contemporary society.

The communication studies curriculum is designed to enable the student to explore the impact of mass-mediated communication in society, within media organizations and within the public sphere. In completing a program of study, each student selects a concentration (advertising and public relations, broadcasting, film studies, graphic design, speech and human communication) designed to complement his or her career objectives.

**REQUIREMENTS—COMMUNICATION STUDIES MAJOR**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>Introductory Courses (22 credits)</td>
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<tr>
<td>COMS 130 Mass Media &amp; Society</td>
<td>3</td>
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<tr>
<td>COMS 180 Public Speaking &amp; Presentation</td>
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<tr>
<td>COMS 213 Visual Literacy</td>
<td></td>
</tr>
<tr>
<td>COMS 220 Media, Law, &amp; Ethics</td>
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<tr>
<td>COMS 230 Communication Theory (prerequisite COMS 130)</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 102 Advanced Composition &amp; Literature (prerequisite ENG 101)</td>
<td>3</td>
</tr>
<tr>
<td>FRS 101 Freshman Seminar (COMS section)</td>
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<tr>
<td>PSY 105 Intro. to Psychology</td>
<td>3</td>
</tr>
<tr>
<td>SOC 105 Intro. to Sociology</td>
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</tr>
<tr>
<td>Communication Studies Advanced Electives (6 credits)</td>
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</tr>
<tr>
<td>COMS Elective I</td>
<td></td>
</tr>
<tr>
<td>COMS Elective II</td>
<td></td>
</tr>
<tr>
<td>Courses must be 200-level and above nonstudio and nonwriting core classes and cannot be counted toward concentration or applied coursework. They may include only 3 credits of COMS 420 Practicum.</td>
<td></td>
</tr>
<tr>
<td>Applied Coursework (12 credits)</td>
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</tr>
<tr>
<td>Two writing and two studio courses required. Courses counted here may not be counted toward concentration.</td>
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</tr>
<tr>
<td>Writing Core</td>
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<tr>
<td>COMS 217 Broadcast News Writing</td>
<td>3</td>
</tr>
<tr>
<td>COMS 277 IMC Workshop</td>
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</tr>
<tr>
<td>COMS 285 Film Writing</td>
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</tr>
<tr>
<td>ENGL 310 Feature Writing for Magazines &amp; Newspapers</td>
<td>3</td>
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<tr>
<td>PRWR 100 Fundamentals of Professional Writing</td>
<td>3</td>
</tr>
<tr>
<td>PRWR 110 Fundamentals of Journalism</td>
<td>3</td>
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<tr>
<td>PRWR 215 Effective Communication</td>
<td></td>
</tr>
<tr>
<td>PRWR 320 Advanced Technical Writing</td>
<td>3</td>
</tr>
<tr>
<td>PRWR 330 Multimedia Writing for Business &amp; Training Programs</td>
<td>3</td>
</tr>
<tr>
<td>PRWR 340 Copy Writing for Advertising &amp; Marketing</td>
<td>3</td>
</tr>
<tr>
<td>Studio Core</td>
<td></td>
</tr>
<tr>
<td>COMS 260 Basic Video (prerequisite COMS 213)</td>
<td>3</td>
</tr>
<tr>
<td>COMS 262 Digital Photography</td>
<td></td>
</tr>
<tr>
<td>COMS 264 Layout &amp; Design (prerequisite COMS 213)</td>
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<tr>
<td>COMS 265 Radio Production</td>
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<tr>
<td>COMS 266 Basic Web Design</td>
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<tr>
<td>Research Sequence (13 credits)</td>
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<tr>
<td>PSY 385 Statistical Methods</td>
<td>4</td>
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<tr>
<td>SOC 382 Research Design*</td>
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<tr>
<td>COMS 409 Senior Capstone</td>
<td></td>
</tr>
<tr>
<td>COMS 410 Senior Capstone*</td>
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<tr>
<td>TOTAL CREDITS</td>
<td>52</td>
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</tbody>
</table>

*Students must achieve a grade of “C” or better in COMS 130, COMS 230, and COMS 382 before they can register for COMS 409 or 419 Senior Capstone.
COMMUNICATION STUDIES CONCENTRATIONS

One 12-credit concentration required

Advertising & Public Relations (12 credits)*
COMS 275 Intro. to Public Relations 3
COMS 280 Intro. to Advertising 3
COMS 375 Public Relations Campaigns 3
COMS 380 Advertising Campaigns 3

Broadcasting (12 credits)**
COMS 317 Broadcast News Production
(prerequisites COMS 217, 260) 3
COMS 360 Advanced Video
(prerequisite COMS 260) 3
COMS 367 Television Workshop
(prerequisites COMS 217, 260) 3
COMS 395 Editing Film & Video 3

Film Studies (12 credits)***
COMS 251 Film Analysis 3
COMS 295 Directing Film & Video 3
COMS 360 Advanced Video (prerequisite COMS 260) 3
COMS 395 Editing Film & Video 3

Graphic Design (12 credits)****
COMS 264 Layout & Design 3
COMS 360 Advanced Video 3
COMS 364 Computer Graphics 3
COMS 368 Interactive Video 3

Speech and Human Communication (12 credits)
COMS 290 Interpersonal and Small Group Communication 3
COMS 390 Organizational Communication 3
PHIL 105 Intro. to Logic 3

*Advertising and public relations concentrations must take COMS 277 as one of their two writing core classes.

**Broadcasting concentrations must take COMS 217 as one of their two writing core classes and COMS 260 as one of their two studio core classes.

***Film studies concentrations must take COMS 260 as one of their two studio core classes.

****Graphic design concentrations must take COMS 260 as one of their two studio core classes.

COMMUNICATION STUDIES MINOR

A total of 21 semester hours, including COMS 130, COMS 180, COMS 213, COMS 230; one of the following production courses: COMS 260, COMS 262, COMS 264, COMS 265, COMS 266; and two or more COMS nonproduction courses.

CURRICULUM—COMMUNICATION STUDIES Credits

Freshman Fall ..................................................... 16.5
ENGL 101 Composition & Critical Thinking or Free Elective 3
SOC 105 Intro. to Sociology 3
PSY 105 Intro. to Psychology 3
COMS 130 Mass Media & Society 3
FRS 101 Freshman Seminar 1
Humanities Elective 3
Physical Education Elective 0.5

Freshman Spring .............................................. 15.5
ENGL 102 Advanced Composition & Literature 3
Humanities Elective 3
Math Requirement 3
COMS 213 Visual Literacy 3
Free Elective or MATH 101 3
Physical Education Elective 0.5

Sophomore Fall .............................................. 15
COMS 180 Public Speaking & Presentation 3
Writing Core 3
Studio Core 3
Humanities Elective 3
Math/Science Elective 3

Sophomore Spring ........................................... 16
COMS 230 Communication Theory 3
Writing Core 3
Studio Core 3
Humanities Elective 3
Science w/ Lab 4

Junior Fall .................................................... 16
COMS 220 Media Law & Ethics 3
PSY 385 Statistical Methods for the Social Sciences 4
Concentration Course 3
Math/Science Elective 3
Free Elective 3

Junior Spring ................................................. 15
COMS 382 Research Design 3
Concentration Course 3
Advanced Communication Studies Elective 3
Free Electives 6

Senior Fall .................................................... 15
COMS 409 Senior Capstone I 3
Concentration Course 3
Advanced Communication Studies Elective 3
ASC 400 Values Seminar 3
Free Elective 3

Senior Spring .................................................. 12
COMS 410 Senior Capstone II 3
Concentration Course 3
Free Electives 6

TOTAL CREDITS 121
**CRIMINAL JUSTICE**

The criminal justice major is intended to prepare students for careers in corrections, the court system, probation, police work, and other law-related professions. The program is also intended as a good preparation for graduate work in law, public and criminal justice system administration, and the social sciences in general.

The major provides a solid understanding of theory and research related to the criminal justice system at local, state, and federal levels. The curriculum emphasizes the development of analytical and research skills, which prepare criminal justice graduates to effectively meet the challenges of administering justice in applied settings. Coursework is designed to enable students to appreciate the interrelations between theory, research, and practice.

The major is broad-based, emphasizing the study of crime and the criminal justice system within the context of the social and behavioral sciences.

**REQUIREMENTS—CRIMINAL JUSTICE MAJOR**  
Credits

<table>
<thead>
<tr>
<th>Course Type</th>
<th>Course Code</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Introductory Courses (9 credits)</td>
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<tr>
<td>GP 101 American Government</td>
<td>3</td>
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<tr>
<td>PSY 105 Intro. to Psychology</td>
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<tr>
<td>SOC 105 Intro. to Sociology</td>
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<tr>
<td><strong>Criminal Justice Core (30 credits)</strong></td>
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<td>SOC 201 Criminology</td>
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<tr>
<td>CJ 105 Intro. to the Criminal Justice System</td>
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<tr>
<td>CJ 205 Law Enforcement</td>
<td>3</td>
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<tr>
<td>CJ 210 Criminal Courts</td>
<td>3</td>
<td></td>
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<tr>
<td>CJ 215 The Correctional System</td>
<td>3</td>
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<tr>
<td>CJ 315 Juvenile Delinquency</td>
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<tr>
<td>CJ 325 Criminal Law and Procedure</td>
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<tr>
<td>CJ 405 Ethics in Criminal Justice</td>
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<tr>
<td>Two CJ Electives</td>
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<tr>
<td><strong>Sociological Foundations (6 credits)</strong></td>
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<tr>
<td>One sociology elective from SOC 235, 266, and 315</td>
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<tr>
<td>One sociology elective from SOC 307, 355, and 405</td>
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<tr>
<td><strong>Law and the Judicial System (3 credits)</strong></td>
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<tr>
<td>One government and politics elective from GP 218, 319, and 320</td>
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<tr>
<td><strong>Government and Public Policy (3 credits)</strong></td>
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<tr>
<td>One government and politics elective from GP 205, 206, 315, and 321</td>
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<tr>
<td><strong>Research sequence (13 credits)</strong></td>
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<tr>
<td>PSY 385 Statistical Methods; CJ 382 Research Methods</td>
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<tr>
<td>CJ 409–410 Senior Research</td>
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<tr>
<td><strong>Internship (6 credits)</strong></td>
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<tr>
<td>CJ 423 Criminal Justice Internship</td>
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<td><strong>TOTAL CREDITS</strong></td>
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<td>70</td>
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</table>

*Students must achieve a grade of C or better in these courses.*

**CRIMINAL JUSTICE MINOR**

A total of 24 semester hours: CJ 105, CJ 205, CJ 210, CJ 215, CJ 315, CJ 325, SOC 201, and one additional CJ elective.

**CURRICULUM—CRIMINAL JUSTICE**  
Credits

<table>
<thead>
<tr>
<th>Term</th>
<th>Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Freshman Fall</strong></td>
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<tr>
<td>CJ 105</td>
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<tr>
<td>SOC 105</td>
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<tr>
<td>ENGL 101</td>
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<tr>
<td>Humanities Elective</td>
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<tr>
<td>Science Elective</td>
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<td>PE</td>
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<tr>
<td><strong>Freshman Spring</strong></td>
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<td>CJ Core Requirement</td>
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<td>GP 101</td>
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<td>PSY 105</td>
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<td>Lab Science</td>
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<td>PE</td>
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<tr>
<td><strong>Sophomore Fall</strong></td>
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<td>15</td>
</tr>
<tr>
<td>CJ Core Requirement</td>
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<td></td>
</tr>
<tr>
<td>SOC Elective</td>
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<td></td>
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<tr>
<td>Law/Judicial Systems Elective</td>
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<tr>
<td>Humanities Elective</td>
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<td></td>
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<tr>
<td>Science Elective</td>
<td>3</td>
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<tr>
<td><strong>Sophomore Spring</strong></td>
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<td>15</td>
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<tr>
<td>CJ Core Requirement</td>
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<tr>
<td>Gov/Public Policy Elective</td>
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<tr>
<td>PSY 385 Statistical Methods</td>
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<td>Free Electives</td>
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<td><strong>Junior Fall</strong></td>
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<td>CJ Core Requirement</td>
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<td>CJ 382 Methods</td>
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<td>Free Elective(s)</td>
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<td><strong>Senior Fall</strong></td>
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<td>CJ 405 Criminal Justice Ethics</td>
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<td>CJ 409 Senior Research I</td>
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<td>Values Seminar</td>
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<tr>
<td>CJ Internship</td>
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<td>CJ Elective</td>
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<tr>
<td><strong>Senior Spring</strong></td>
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<tr>
<td>CJ 410 Senior Research II</td>
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<td>CJ Elective</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Free Electives</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL CREDITS</strong></td>
<td></td>
<td>121</td>
</tr>
</tbody>
</table>

**CERTIFICATE IN ACCOUNTING FOR CRIMINAL JUSTICE MAJORS**

The purpose of the certificate in accounting is to provide non-SBA students who are majoring in criminal justice with an opportunity to obtain additional exposure to accounting and business law. Courses in this program provide, in varying degrees, the background needed to pursue professional certification in such areas as management accounting (certified management accountant) and internal auditing (certified internal auditor). The total number of accounting credits needed to earn a certificate is 12 credits. Three credits of business law are also required. In addition, there are non-SBA requirements.
**GOVERNMENT AND POLITICS**

The government and politics major focuses on the way the “rules of the game” are established for conflict resolution and the processes by which conflicts in decision making are resolved or lead to forceful confrontation. Various forms of political institutions are examined with respect to making binding rules (legislation), applying them to ongoing activities (executive and administrative action), and settling disputes about the application of rules (adjudication).

Strong preparation in government and politics can lead to graduate study in political science, law, international affairs, public administration, urban government, city planning, community affairs, and policy analysis. The field can also lead to careers in the administration of business, government, hospitals, and other types of nonprofit organizations. The major is good preparation for journalism and for other public service-oriented professions.

**PRE-LAW OPTION**

Government and politics is one of the majors traditionally chosen by students interested in going to law school. By special arrangement with Widener’s School of Law, government and politics majors may choose a “three-three” option whereby they use the first year at Widener Law School to complete the last year of their Widener undergraduate degree in government and politics. Eligibility for participation in the three-three program is based upon high school record and SAT scores. Students considering this option should speak with Dr. Gordon Henderson, pre-law advisor for the College of Arts and Sciences.

Government and politics students considering the study of law should pursue the legal studies and analysis minor offered by the College of Arts and Sciences. Students seeking further information on these programs and on preparation for law school admissions should contact pre-law advisor Professor Gordon Henderson (Arts and Sciences) or Professor Greg Cermignano.

**CREDIT FOR GRADUATE COURSEWORK**

Undergraduate government and politics majors may petition the MPA Advisory Committee of the government and politics faculty to take a maximum of two 500-level public administration courses. Students must have senior standing and must file a written petition with the government and politics faculty. Students will receive undergraduate government and politics credit as well as credit toward completion of the graduate MPA program for each MPA course they successfully complete.

**REQUIREMENTS—GOVERNMENT & POLITICS**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>GP 101</td>
<td>American Government &amp; Politics</td>
<td>3</td>
</tr>
<tr>
<td>GP 102</td>
<td>Foreign Governments &amp; Politics</td>
<td>3</td>
</tr>
<tr>
<td>GP 221</td>
<td>International Relations</td>
<td>3</td>
</tr>
<tr>
<td>EC 201</td>
<td>Principals of Macroeconomics</td>
<td>3</td>
</tr>
<tr>
<td>GP 205</td>
<td>Public Policy</td>
<td>3</td>
</tr>
<tr>
<td>GP 306</td>
<td>Western Political Theory</td>
<td>3</td>
</tr>
<tr>
<td>GP 310</td>
<td>Empirical Political Analysis</td>
<td>4</td>
</tr>
<tr>
<td>GP 206</td>
<td>Two courses from the “American Politics” series</td>
<td>6</td>
</tr>
<tr>
<td>GP 204</td>
<td>Two courses from the “International Relations” series</td>
<td>6</td>
</tr>
<tr>
<td>GP 410/411</td>
<td>Three electives in government and politics</td>
<td>9</td>
</tr>
<tr>
<td>GP 410/411</td>
<td>Senior Research</td>
<td>6</td>
</tr>
</tbody>
</table>

**TOTAL CREDITS**

49

Students interested in law school should consider the dual major in government and politics and criminal justice on page 45.
### CURRICULUM—GOVERNMENT AND POLITICS

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>Freshman Fall</td>
<td>15.5</td>
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<tr>
<td>GP 101 American Government &amp; Politics</td>
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<tr>
<td>ENGL 101 Composition &amp; Critical Thought</td>
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<td>Science Elective</td>
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<td>Humanities Elective</td>
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<td>Free Elective</td>
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<td>Physical Education Elective</td>
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<td><strong>Freshman Spring</strong></td>
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<td>GP102 Foreign Government &amp; Politics</td>
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<tr>
<td>American Politics Elective</td>
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<td>Humanities Elective</td>
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<tr>
<td>Science Elective</td>
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<td>Free Elective</td>
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<tr>
<td>Physical Education Elective</td>
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<td><strong>Sophomore Fall</strong></td>
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<tr>
<td>GP 221 Introduction to International Relations</td>
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<td>International relations Elective</td>
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<tr>
<td>Lab Science Elective</td>
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<tr>
<td>Free Elective</td>
<td>3</td>
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<td><strong>Sophomore Spring</strong></td>
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<tr>
<td>EC 201 Macroeconomics</td>
<td>3</td>
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<tr>
<td>GP 205 Public Policy</td>
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<td>Humanities Elective</td>
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<td>Math Requirement</td>
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<td>Free Elective</td>
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<td><strong>Junior Fall</strong></td>
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<tr>
<td>GP 306 Western Political Theory</td>
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<tr>
<td>Government &amp; Politics Electives</td>
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<tr>
<td>Free Electives</td>
<td>6</td>
</tr>
<tr>
<td><strong>Junior Spring</strong></td>
<td>16</td>
</tr>
<tr>
<td>GP 310 Empirical Political Analysis</td>
<td>4</td>
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<tr>
<td>American Politics Elective</td>
<td>3</td>
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<tr>
<td>Government &amp; Politics Elective</td>
<td>3</td>
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<tr>
<td>Free Electives</td>
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<tr>
<td><strong>Senior Fall</strong></td>
<td>15</td>
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<tr>
<td>International Relations Elective</td>
<td>3</td>
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<tr>
<td>Free Electives</td>
<td>6</td>
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<tr>
<td>GP 410 Senior Research</td>
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<td>ASC 400</td>
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<td><strong>Senior Spring</strong></td>
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<tr>
<td>GP 411</td>
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<tr>
<td><strong>TOTAL CREDITS</strong></td>
<td>121</td>
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</tbody>
</table>

### GOVERNMENT AND POLITICS MINOR

A total of 24 semester hours: GP 101, 102, 205, 221, 306, plus any three courses in government and politics.

### INTERNATIONAL RELATIONS

International relations is an interdisciplinary major that leads to careers or graduate study in government, law, international business and finance, communications, and diplomacy. Graduates can also seek employment with nonprofit international institutions, such as the United Nations or the World Bank.

In their coursework, international relations majors not only draw heavily on government and politics courses, but also select courses in anthropology, economics, modern languages, history, and psychology. Working with their academic advisor, students fashion a concentration in such areas as diplomacy, international business, national security studies, and the history and culture of a geographic region. Students must study a foreign language, and study abroad is encouraged.

### REQUIREMENTS—INTERNATIONAL RELATIONS MAJOR*

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Credits</th>
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<tbody>
<tr>
<td><strong>Required Courses (31 credits)</strong></td>
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<tr>
<td>ANTH 105 Cultural Anthropology</td>
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<tr>
<td>EC 201 Macroeconomics</td>
<td>3</td>
</tr>
<tr>
<td>GP 101 American Government and Politics</td>
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</tr>
<tr>
<td>GP 102 Foreign Governments and Politics</td>
<td>3</td>
</tr>
<tr>
<td>GP 221 International Relations</td>
<td>3</td>
</tr>
<tr>
<td>GP 306 Western Political Theory</td>
<td>3</td>
</tr>
<tr>
<td>GP 307 Theories of International Relations (GP 221)</td>
<td>3</td>
</tr>
<tr>
<td>GP 310 Empirical Political Analysis</td>
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</tr>
<tr>
<td>GP 410/411 Senior Research</td>
<td>6</td>
</tr>
<tr>
<td><strong>Language Requirement (6 credits)</strong></td>
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</tr>
<tr>
<td>A minimum of two three-credit courses (at or above the 200 level) in a single modern language.</td>
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</tr>
<tr>
<td><strong>Electives (12 credits)</strong></td>
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</tr>
<tr>
<td>Select four of the following (or any other course approved in writing by the IR major advisors):</td>
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<tr>
<td>ANTH 243 Anthropology of the Middle East</td>
<td></td>
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<tr>
<td>EC 202 Principles of Microeconomics</td>
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<tr>
<td>EC 310 Comparative Economic Systems (EC 101, 102)</td>
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<tr>
<td>EC 408 International Economics (EC 101, 102)</td>
<td></td>
</tr>
<tr>
<td>FREN 304 French Civilization &amp; Culture (FREN 301, 302)</td>
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<tr>
<td>FREN 305 French Civilization (FREN 301, 302)</td>
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<tr>
<td>GP 222 American Foreign Policy</td>
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<tr>
<td>GP 226 The Third World</td>
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<td>GP 228 Politics of European Integration</td>
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<tr>
<td>GP 241 China</td>
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<tr>
<td>GP 242 Japan</td>
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<tr>
<td>GP 247 Post Soviet Politics</td>
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<tr>
<td>GP 250 Vietnam</td>
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<tr>
<td>GP 235 Latin America</td>
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</tr>
<tr>
<td>GP 330 Current Issues in Democratic Consolidation</td>
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</tr>
<tr>
<td>GP 335 Eastern European Politics after Communism</td>
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<tr>
<td>GP 337 Politics of the Middle East (GP 102)</td>
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<tr>
<td>GP 384 Arms Control (GP 221 or 222)</td>
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<tr>
<td>GP 385 Strategic Intelligence (GP 221 or 222)</td>
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<tr>
<td>GRMN 304 German Civilization &amp; Culture (GRMN 202)</td>
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<tr>
<td>HIST 332 Germany Since 1871</td>
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<tr>
<td>HIST 334 Russia in the 18th and 19th Centuries</td>
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<tr>
<td>HIST 335 Russia in the 20th Century</td>
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<tr>
<td>HIST 336 Russia’s Holocaust</td>
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</tr>
<tr>
<td>HIST 343 European Diplomacy, 1871–1945</td>
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<tr>
<td>HIST 344 European Diplomacy, 1945–Present</td>
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<tr>
<td>HUM 211 French Civilization and Culture</td>
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<tr>
<td>HUM 212 Contemporary French Civilization</td>
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<tr>
<td>ITAL 304 Italian Civilization &amp; Culture (ITAL 301)</td>
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<tr>
<td>PSY 310 Cross-Cultural Psychology (PSY 105)</td>
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<tr>
<td>SPAN 304 Spanish Civilization &amp; Culture (SPAN 202)</td>
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<tr>
<td>SPAN 305 Latin American Culture (SPAN 202)</td>
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</tr>
</tbody>
</table>

**TOTAL CREDITS** 49

*Students are encouraged to study abroad for one semester. Credits from pre-approved, overseas programs will be considered for transfer. If students wish to study abroad, they should plan to do so either in the summer or during the fall of their senior year.

### INTERNATIONAL RELATIONS MINOR

A total of 30 semester hours. Required basic courses: EC 201, GP 101, 102, 221 (12 credit hours). Two three-credit modern language courses at or above the 200 level; courses must be in the same language (6 credit hours). Four courses at 200 level or above from among the elective or required courses for international relations major (12 credit hours).
**PSYCHOLOGY**

Psychology is the scientific study of human behavior and mental processes. Students may choose to study this field out of personal interest, as preparation for graduate study, or as preparation for careers in fields such as mental health counseling, child guidance, or personnel management.

Psychology majors may qualify for certification as early childhood, elementary, and comprehensive secondary education social studies teachers.

A number of students double major in psychology and social work. See page 102 for the curriculum ladder for double majors.

**REQUIREMENTS—PSYCHOLOGY MAJOR**

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Introductory Course (3 credits)</td>
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</tr>
<tr>
<td>PSY 105 Introduction to Psychology</td>
<td>3</td>
</tr>
<tr>
<td>Core Requirements (21 credits)</td>
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</tr>
<tr>
<td>Capstone course (one from the following)</td>
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<tr>
<td>PSY 330 Current Issues in Psychology</td>
<td></td>
</tr>
<tr>
<td>PSY 377 History and Systems of Psychology</td>
<td></td>
</tr>
<tr>
<td>Advanced electives—six courses, with two from each of</td>
<td></td>
</tr>
<tr>
<td>the following categories; one of the advanced</td>
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<tr>
<td>electives must be a 4-credit laboratory course</td>
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<tr>
<td>(not including PSY 385, 387)</td>
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<tr>
<td>Experimental advanced electives (two from following)</td>
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<tr>
<td>PSY 230 Cognition*</td>
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<tr>
<td>PSY 235 Forensic Psychology</td>
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<tr>
<td>PSY 255 Sensation &amp; Perception</td>
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<tr>
<td>PSY 260 Paranormal Psychology</td>
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<tr>
<td>PSY 265 Evolutionary Psychology</td>
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<tr>
<td>PSY 291 Cognition with Lab (4 credits)*</td>
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<tr>
<td>PSY 355 Biological Psychology</td>
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<tr>
<td>Professional/applied advanced electives (two from</td>
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<tr>
<td>following)</td>
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<tr>
<td>PSY 200 Industrial/Organizational Psychology</td>
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<tr>
<td>PSY 201 Educational Psychology</td>
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<tr>
<td>PSY 203 Consumer Behavior &amp; Advertising</td>
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<tr>
<td>PSY 215 Multicultural Psychology</td>
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<tr>
<td>PSY 216 Community Psychology</td>
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<tr>
<td>PSY 225 Abnormal Psychology</td>
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<tr>
<td>PSY 240 Health Psychology</td>
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<tr>
<td>PSY 250 Effective Instructional Practices &amp; Delivery</td>
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<tr>
<td>Methods for All Levels of Special Education</td>
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</tr>
<tr>
<td>PSY 278 Problem Behavior in Children: Assessment &amp;</td>
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<tr>
<td>Therapy</td>
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<td>PSY 375 Counseling &amp; Psychotherapy</td>
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<td>PSY 376 Educational &amp; Psychological Tests</td>
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<tr>
<td>Social/development advanced electives (two from</td>
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<td>following)</td>
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<tr>
<td>PSY 202 Child Development**</td>
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<td>PSY 204 Social Psychology</td>
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<td>PSY 205 Personality</td>
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<td>PSY 206 Psychology of Women</td>
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<td>PSY 210 Cross-Cultural Social Psychology</td>
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<tr>
<td>PSY 211 Human Growth &amp; Development I**</td>
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<tr>
<td>PSY 212 Human Growth &amp; Development II</td>
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<tr>
<td>PSY 213 Early Adolescent Psychology</td>
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<tr>
<td>PSY 245 Group Dynamics</td>
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<tr>
<td>PSY 292 Human Growth &amp; Development I w/ Lab (4 credits)**</td>
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<tr>
<td>Research Sequence (14 credits)</td>
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<tr>
<td>PSY 385, 387 Statistical Methods &amp; Research Design***</td>
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<tr>
<td>PSY 409-410 or PSY 419 Senior Research</td>
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<tr>
<td>Related Fields (6 credits)</td>
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<tr>
<td>Any two courses from anthropology, biology, CJ 105, CJ</td>
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<tr>
<td>230, CJ 315, sociology, WS 101,</td>
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<tr>
<td>or specified social work courses</td>
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<tr>
<td>TOTAL CREDITS</td>
<td>45</td>
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</table>

*Students may take PSY 230 or 291, not both.

**Students may take only one from the following: PSY 202, 211, 292.

***Students must achieve a grade of C or better in these courses.

**PRE-PHYSICAL THERAPY**

Psychology majors wishing to pursue a pre-physical therapy curriculum that will enable them to apply for early admission to Widener’s graduate Physical Therapy Program during their junior year should consult the pre-physical therapy curriculum ladders in this Catalog.

**CURRICULUM—PSYCHOLOGY**

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Freshman Fall</td>
<td>15.5</td>
</tr>
<tr>
<td>PSY 105 Introduction to Psychology</td>
<td>3</td>
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<td>ENGL 101 Composition &amp; Critical Thought</td>
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<td>Humanities Elective</td>
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<td>Science Elective</td>
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<td>Related Fields Elective</td>
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<tr>
<td>Physical Education Elective</td>
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<tr>
<td>Freshman Spring</td>
<td>15.5</td>
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<tr>
<td>Psychology Advanced Electives</td>
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<td>Humanities Elective</td>
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<td>Math Requirement</td>
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<td>Physical Education Elective</td>
<td>0.5</td>
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<td>Sophomore Fall</td>
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<tr>
<td>Psychology Advanced Electives*</td>
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<tr>
<td>Humanities Elective</td>
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<tr>
<td>Lab Science</td>
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<td>Free Elective</td>
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<tr>
<td>Sophomore Spring</td>
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<tr>
<td>Psychology Advanced Elective</td>
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<tr>
<td>Humanities Elective</td>
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<tr>
<td>Science Elective*</td>
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<td>Free Electives</td>
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<td>Junior Fall</td>
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<tr>
<td>Psychology Capstone Course</td>
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<td>PSY 385 Statistical Methods w/ Lab</td>
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<td>Free Electives</td>
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<td>Junior Spring</td>
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<tr>
<td>PSY 387 Research Design &amp; Lab for Psychology</td>
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<tr>
<td>Psychology Advanced Elective*</td>
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<td>Free Electives</td>
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<td>Senior Fall</td>
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<td>ASC 400 Values Seminar</td>
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<td>PSY 409 Senior Research I</td>
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<td>Free Electives</td>
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<td>Senior Spring</td>
<td>14</td>
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<tr>
<td>PSY 410 Senior Research II</td>
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<td>Free Electives</td>
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<tr>
<td>TOTAL CREDITS</td>
<td>121</td>
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</tbody>
</table>

*PSY 355 Biological Psychology counts as a psychology and a science elective.

**PSYCHOLOGY MINOR**

A total of 24 semester hours: PSY 105, PSY 381 or 385, plus any six advanced courses (200-level or above) in psychology (excluding PSY 382, 384, 409, 410).
SOCIOLGY
Sociology is the study of society, human behavior, and social interaction. The focus of study is the application of critical thought to social processes and social issues. Specific areas of interest include social institutions, symbolic meaning, bureaucratic organizations, socialization, deviance, political systems, class society, social interaction, the family, gender, minority relations, social movements, and social change.

A degree in sociology prepares the student for policy, research, and supervisory work in the public and private sectors, including such diverse fields as government agencies, advocacy groups, the criminal justice system, educational institutions, social services, counseling, business management, office administration, mass media, and the political arena.

Students majoring in sociology may choose either the Social Research track or the Social Practice track.

PRE-PHYSICAL THERAPY
Sociology majors wishing to pursue a pre-physical therapy curriculum that will enable them to apply for admission to Widener’s graduate Physical Therapy program during their junior year should consult the pre-physical therapy curriculum ladders on pages 103–110.

SOCIAL RESEARCH TRACK
The Social Research Track is the traditional sociology major, used for a wide variety of job opportunities and graduate school preparation in most degree programs as well as law school. Combined with a research sequence, this degree also prepares students for understanding and doing basic research projects and to critically examine research articles. Students may elect to double major in sociology and criminal justice or another social science major within their four-year undergraduate curriculum.

REQUIREMENTS—SOCIOLGY MAJOR WITH SOCIAL RESEARCH TRACK Credits

Introductory Course (3 credits)
SOC 105 Introduction to Sociology 3

Core Requirements (21 credits)
SOC 355 Social Theory 3
SOC 405 Sociology Seminar 3
Any five sociology advanced electives 15

Research Sequence (13 credits)
PSY 385 Statistics with Computer Lab 4
SOC 382 Research Design 3
SOC 409–410 Senior Research 6

Related Fields (9 credits)
Any three courses from the following: anthropology, communication studies (non-technical), criminal justice, economics, government and politics, history, philosophy, psychology, social work, women’s studies 9

TOTAL CREDITS 46

SOCIAL PRACTICE TRACK
The social practice track prepares students for a diversity of work opportunities especially in education, the political arena, advocacy groups, and social agency work. The track begins with an introductory course, and requires the Social Theory and Research Design courses. In addition, students must take The Social Self, two sociology service learning courses, and complete a 200-hour internship that provides an experiential learning opportunity designed to develop students as both professionals and citizens. The social practice track, taken in the senior year, culminates in a capstone Sociology Seminar that provides students an opportunity to reflect on a particular sociological topic.

REQUIREMENTS—SOCIOLGY MAJOR WITH SOCIAL PRACTICE TRACK Credits

Introductory Course (3 credits)
SOC 105 Introduction to Sociology 3

Core Requirements (27 credits)
SOC 207 The Social Self 3
SOC 355 Social Theory 3
SOC 382 Research Design 3
SOC 405 Sociology Seminar 3
Any five sociology advanced electives 15

Computer Literacy (3 credits)
CSCI 101 Introduction to Computers 3

Internship (6 credits)
SOC 423 Internship 6

Related Fields (9 credits)
Select three courses from the following: anthropology, nontechnical communication studies, criminal justice, EC 201, 202, ED 201, 250, government and politics, HIST 100, 101, 102, 121, 122, PHIL 105, 115, 215, psychology, social work, women’s studies 9

TOTAL CREDITS 48

* Two of these electives must be service learning courses.

SOCIOLGY MINOR
A total of 21 semester hours: SOC 105, SOC 355, plus any five advanced courses (200-level or above) in sociology.

EDUCATIONAL OPTIONS FOR INDIVIDUALIZED CURRICULA FOR SOCIAL SCIENCE MAJORS

DUAL MAJORS
Students wishing to earn dual majors may do so by meeting the requirements for each major. Only one senior project is required. Students wishing to dual major should meet with their advisors to discuss which dual majors would be appropriate.

MINORS
Social science majors may wish to minor in another social science or take one of the minors offered by the humanities or the science division.

BILINGUAL CERTIFICATE IN SPANISH
Students who are interested in careers requiring proficiency in a foreign language can obtain a bilingual certificate by completing the following 27 semester hours in Spanish in addition to the requirements for their major: ML 281–282 and seven 300-level courses.

TEACHER CERTIFICATIONS
Social science majors may seek certification in social studies, early childhood education, elementary education, and special education. These certifications are described in the Center for Education section of this Catalog.
**CURRICULUM—SOCIOMETRY**

<table>
<thead>
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<th>Course</th>
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<tr>
<td>SOC 105 Introduction to Sociology</td>
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<td>ENGL 101 Composition &amp; Critical Thought</td>
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<tr>
<td>Humanities Elective</td>
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<td>Related Fields Elective</td>
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<td>SOC 410 Senior Research (Social Research)</td>
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<tr>
<td><strong>TOTAL CREDITS</strong></td>
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</table>

* Students are encouraged to take a sociology service learning course.

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**THE SCIENCES**

The curricula ladders for biochemistry, biology, chemistry, computer science, environmental science, environmental science/biology, mathematics, physics, science administration, and science education appear on the pages that follow.

The major programs in the sciences are designed to prepare the student for further study at the graduate level or in professional schools; for employment in hospitals, industry, research institutions, and governmental agencies; or for teaching at the secondary level. For those who wish to be certified to teach science in Pennsylvania secondary schools, Widener offers certification in biology, chemistry, earth and space science, mathematics, physics, and comprehensive general science.

All courses of study present opportunities for the student to investigate the areas of the humanities, social sciences, and economics, and all students are encouraged to take a course in computer science during their first year. Students pursuing a major in the sciences are awarded the bachelor of science (BS) degree upon completion of all graduation requirements. Biology offers a bachelor of arts (BA) in addition to the BS.

The minor programs in the sciences offer students from other disciplines the opportunity to pursue a sub-specialization of interest in an orderly fashion. Most of the major programs offer minors, and minors in experimental science and natural science are also available.

All students completing a major or minor in science are required to have a 2.0 GPA in all science courses and a 2.0 GPA in their major and minor to be eligible for graduation. Students must also satisfy the general education requirements of the College of Arts and Sciences listed at the beginning of this section.

**PRE-MEDICINE**

Students preparing for careers in medicine, dentistry, veterinary medicine, or other healing professions may major in any discipline so long as they meet the basic course requirements of the professional school of interest. To ensure proper course selection, pre-professional students should register with the health professions advisor early in the first year and indicate their goals to their academic advisors.

**PRE-MEDICAL CONCENTRATION**

The Pre-Medical Committee of the College of Arts and Sciences has approved a concentration of courses to assist students preparing for the study of medicine, optometry, dentistry, podiatric medicine, and veterinary medicine. Students in any major are encouraged to consult with the pre-medical advisor to plan their programs.

The courses listed as foundation courses (see page 35) satisfy the entrance requirements of most health professions schools. To be competitive, a student should have a cumulative average of 3.5 or better overall and in the sciences at the end of junior year. Most medical schools and other schools of the doctoral health professions minimally require two courses in biology, four courses in chemistry, two courses in physics, two courses in English, and two courses in mathematics.

**ACCELERATED PROGRAM IN OSTEOPATHIC MEDICINE**

To address the national need for more primary care physicians, Widener and Philadelphia College of Osteopathic Medicine (PCOM) have established a joint undergraduate-professional program of education. This seven-year program leads to the degrees of bachelor of science (biology) and doctor of osteopathy. PCOM has agreed to provide up to 15 places in its first-year classes for qualified Widener students.
The three years of undergraduate study at Widener proceed at the normal pace, following the curriculum ladder for biology majors, including all of the general education requirements of the College of Arts and Sciences. The bachelor of science will be awarded from Widener after successful completion of the first year of medical school.

ACCELERATED PROGRAMS IN DENTISTRY, OPTOMETRY, AND PODIATRIC MEDICINE
Widener offers seven-year programs leading to the degrees of bachelor of science and doctor of dental medicine, doctor of optometry, or doctor of podiatric medicine. The programs provide for six semesters of pre-professional study at Widener and four years of professional study at Kornberg School of Dentistry, Pennsylvania College of Optometry, or Temple University School of Podiatric Medicine.

The three years of undergraduate study at Widener proceed at the normal pace, following the curriculum ladder for biology majors, including all of the general education requirements of the College of Arts and Sciences. The bachelor of science degree will be awarded by Widener after successful completion of the first year at the professional school.

PRE-PHYSICAL THERAPY
Students wishing to pursue a pre-physical therapy curriculum that will enable them to apply for admission to Widener’s graduate physical therapy program during their junior year should consult the pre-physical therapy information on pages 103–110.

ALLIED HEALTH
University College of Widener University offers a BS in allied health. For course descriptions, track options, and requirements, see Widener University’s University College Catalog.

BIOCHEMISTRY
The biochemistry major is designed to provide a solid foundation in the sciences. In addition, it allows students the flexibility to focus their attentions on the chemical or biological aspects of the discipline. The curriculum emphasizes the molecular, analytical, and quantitative aspects of living systems and incorporates a research component that trains students to formulate questions, analyze data, and derive answers. The biochemistry curriculum prepares students for careers in academia, government, or industry or graduate education in the life sciences. The biochemistry major is open to those incoming freshmen who meet the following criteria: minimum math and verbal SAT score of 1100 (with math score greater than 600) or GPA of at least 3.5 on a 4.0 scale. Transfer students should consult the biochemistry chair.

REQUIREMENTS—BIOCHEMISTRY MINOR
This minor requires a total of 44–47 semester hours and is most suitable for biology, chemistry, and chemical engineering majors.

CURRICULUM—BIOCHEMISTRY

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<tr>
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<td>ENGL 101 Composition &amp; Critical Thought</td>
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<td>BCH 102 Biochemistry Seminar II</td>
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<td>CHEM 146 General Chemistry II</td>
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<td>ENGL 102 Advanced Composition &amp; Literature</td>
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<tr>
<td>BIOL 261 Biological Concepts III</td>
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<tr>
<td>CHEM 255 Organic Chemistry I</td>
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<td>CHEM 257 Organic Chemistry I Lab</td>
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<td>PHYS 161 Physics I</td>
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<tr>
<td>BIOL 262 Principles of Modern Genetic Analysis</td>
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<tr>
<td>BIOL 299 Research Methods</td>
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<td>CHEM 256 Organic Chemistry II</td>
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<td>PHYS 162 Physics II</td>
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<td>BCH 301 Biochemistry Seminar III</td>
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<td>CHEM 385 Physical Chemistry I</td>
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TOTAL CREDITS
123–127

*Three must be upper-division electives from the following with at least one from biology and one from chemistry: CHEM 365/367 (Analytical Chemistry), 366/368 (Instrumental Analysis), and 461/463 (Advanced Synthesis and Spectroscopy); BIOL 306 (Developmental Biology), 314 (Developmental Neurobiology), 319 (Microbiology), and 320 (Immunology).
BIOLOGY
The Department of Biology offers two degrees: a bachelor of science (BS) and a bachelor of arts (BA). The BS in biology is a traditional biology degree program that prepares students for graduate study in the biological sciences and for admission to medical school. The BA in biology is designed for students with a desire to study both biology and another field related to their post-graduation ambitions. The first three semesters of the BA and BS programs are identical and allow flexibility in the choice of major.

BS IN BIOLOGY
The BS in biology program is designed to provide a solid foundation in the sciences. In addition, it incorporates a flexible selection of biology electives that permits students to design biology curricula tailored to their individual academic interests and career goals. Through appropriate selection of courses, curricula can be designed to prepare students:

- For entrance into professional schools of medicine, dentistry, optometry, podiatric medicine, and other branches of the healing arts.
- For graduate education in various fields of the life sciences such as biochemistry, molecular biology, plant or animal physiology, environmental science, genetic engineering, or microbiology.
- For post-baccalaureate education in careers in the allied health fields such as physical therapy (Note: the BA in biology is an alternative preparation for allied health careers).
- For careers in academic or industrial research, governmental agencies, or technical sales.

BA IN BIOLOGY
The BA in biology program is designed to allow students to seek training in biology and in another field. Careers and graduate programs benefiting from this cross-disciplinary approach include physical therapy, genetic counseling, law, technical writing, and management in the biomedical sciences. Students pursuing the BA will design a curriculum of 18–24 credits in some area of specialization outside of biology that supports their professional goals. This coursework must be approved by the biology faculty and should include at least 12 credits at an advanced (200 or above) level. Suggestions for achieving this objective are to minor in areas such as a modern language, anthropology or sociology (pre-PT), psychology (pre-PT, counseling), legal studies and analysis (pre-law), professional writing, and economics. Student-designed curricula are strongly encouraged. To facilitate this increase in course requirements, BA students have reduced requirements in their science coursework. Coursework satisfying the BA in biology coursework category may also satisfy social science or humanities general education requirements.

HONORS IN BIOLOGY
The Honors in Biology program is for students who wish to extend their studies beyond the requirements for a BS in biology. Students wishing to graduate with “Honors in Biology” must complete a senior thesis. The senior thesis is intended to provide an opportunity for students to participate in an independent, investigative research project with recognition of their commitment and their motivation to exceed the requirements of the bachelor in science degree in biology. The students will carry out novel laboratory or field research in the biological sciences. The program includes a three-semester sequence (BIOL 408, 409, and 410). Students must defend their theses before a committee and earn a minimum grade of “A” in BIOL 409 and 410 to receive the honors designation.

CURRICULUM—BIOLOGY WITH A PRE-MEDICAL STUDIES CONCENTRATION
Biology majors will enhance their credentials for medical schools by following these guidelines for upper-division electives:

- Three courses in biochemistry and cellular/molecular biology (300 level or above)
- Two courses in chemistry (300 level or above)

TEACHING CERTIFICATION IN BIOLOGY
Students majoring in biology can seek secondary certification in biology by completing the appropriate science and education courses. However, students may choose instead to major in science education—biology certification as described under “Science Education” later in this Catalog.

REQUIREMENTS—BIOLOGY MINOR
A minimum of 23 semester hours in biology, including BIOL 161, 162, 261, and 262, plus courses from at least two of the categories A, B, and C. In addition to the biology courses listed above, CHEM 145, 146, 147, 148, 255, and 257 are required.
## CURRICULUM—BS IN BIOLOGY

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<tr>
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<td>CHEM 145 General Chemistry I</td>
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<td>CHEM 147 General Chemistry Lab I</td>
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<td>Physical Education Elective</td>
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</table>

*Seven biology electives are required and must include at least one from each of the following lists of courses:*

C. Interorganismal Biology: 301, 313, 401, 419.

Students with a Science GPA of at least 2.3 may take BIOL 499 (at least 3 semester hours) as one of their four unspecified biology electives. BCH 451/453 may also be taken as unspecified biology electives. For students with a strong interest in biology, it is recommended that additional advanced biology courses be considered for free electives.*

## CURRICULUM—BA IN BIOLOGY

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<th>Courses</th>
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<td>BIOL 161 Biological Concepts I</td>
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<td>CHEM 145 General Chemistry I</td>
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<td></td>
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<td><strong>Total Credits</strong></td>
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</table>

*Coursework (18–24 credits) must be approved by the biology faculty. This coursework should serve the student’s educational objectives and include at least 12 credits at an advanced (200 or above) level. Student-designed curricula are strongly encouraged. Coursework satisfying the BA in biology coursework category may also satisfy social science or humanities general education requirements.*

*Six biology electives are required and must include at least one from each of the following lists of courses:*

C. Interorganismal Biology: 301, 313, 340/432, 401, 419.

Students with a Science GPA of at least 2.3 may take BIOL 499 (at least 3 semester hours) as one of their four unspecified biology electives. BCH 451/453 may also be taken as unspecified biology electives. For students with a strong interest in biology, it is recommended that additional advanced biology courses be considered for free electives.*
CHEMISTRY

A degree in chemistry can lead to a variety of professional opportunities. Many of our graduates choose careers in chemistry; others pursue careers in biochemistry, material science, medicine, dentistry, education, pharmacology, toxicology, and patent law.

Chemistry majors can choose from two options that lead to a bachelor of science in chemistry. The first option is designed to meet the needs of students who want a strong foundation in chemistry, but who do not necessarily wish to pursue a traditional career in chemistry. This program offers more flexibility in its curriculum by including more free electives and fewer required mathematics and chemistry courses. This flexibility allows students to tailor the degree to their particular interdisciplinary interests.

As a second option, students who want more extensive coursework in chemistry and mathematics may choose to earn a bachelor of science with American Chemical Society (ACS) certification. The ACS has approved the chemistry program at Widener since 1968.

Special Academic Policies for the Major and Minor

To be accepted in the major or minor, all chemistry courses must be successfully completed with a grade of C or better. For entry into the major in the junior year, completion of freshman and sophomore science requirements with a cumulative GPA of 2.0 is required. Chemistry courses may be attempted no more than two times. Enrollment and subsequent withdrawal from a course is considered one attempt. A senior chemistry major will not be approved for graduation if he or she has more than two outstanding grades of D+ or less in courses required for the major.

CHEMISTRY MINOR

A total of 27 to 32 semester hours: CHEM 145, 146, 147, 148, 255, 256, 257, 258, and three courses with one accompanying lab chosen from CHEM 332, 365, 366, 375, 385, 396, 399 (3 credits), 475, 499 (3 credits), and BCH 451 and 452.

TEACHING CERTIFICATION IN CHEMISTRY

Students majoring in chemistry can seek secondary certification in chemistry by completing the appropriate science and education courses. However, students may choose instead to major in science education—chemistry certification as described under “Science Education” later in this Catalog.

DOUBLE MAJOR—CHEMISTRY/CHEMICAL ENGINEERING

Offered in conjunction with School of Engineering—see page 83. Students must maintain a minimum 3.0 GPA to continue in the double major.

CHEMISTRY WITH A
FORENSIC CHEMISTRY CONCENTRATION

To prepare for a career or graduate work in forensic chemistry, chemistry majors need the following courses in addition to the major courses: CHEM 125, CHEM 425, CHEM 427, BIO 261, BCH 451, BCH 453, CJ 105, CJ 225, ANTH 204, and ANTH 308.

CHEMISTRY WITH A
PRE-MEDICAL STUDIES CONCENTRATION

To satisfy the entrance requirements for most health professions schools, chemistry majors need the following courses in addition to the major courses: ENGL 102, BIOL 261, and BIOL 262.

Chemistry majors will also enhance their credentials for medical school applications by taking the following courses as advanced chemistry electives or free electives: BCH 451/453 and BCH 452/454, and at least two of the following: BIO 302, 303, 306, 307, 309, 310, 319, 320, 325, and 327.

CURRICULUM—CHEMISTRY

<table>
<thead>
<tr>
<th>Credits</th>
<th>CURRICULUM—CHEMISTRY</th>
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<tbody>
<tr>
<td>Freshman Fall</td>
<td>CHEM 145 General Chemistry I 3</td>
</tr>
<tr>
<td></td>
<td>CHEM 147 General Chemistry I Lab 1</td>
</tr>
<tr>
<td></td>
<td>MATH 131 Calculus w/ Review I 3</td>
</tr>
<tr>
<td></td>
<td>ENGL 101 Composition &amp; Critical Thought 3</td>
</tr>
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<td></td>
<td>HUM/SSCI Elective 3</td>
</tr>
<tr>
<td></td>
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<tr>
<td>Freshman Spring</td>
<td>CHEM 146 General Chemistry II 3</td>
</tr>
<tr>
<td></td>
<td>CHEM 148 General Chemistry II Lab 1</td>
</tr>
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<td></td>
<td>MATH 132 Calculus w/ Review II 3</td>
</tr>
<tr>
<td></td>
<td>PHYS 161 Physics I 3</td>
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<tr>
<td></td>
<td>PHYS 163 Physics I Lab 1</td>
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<td>HUM/SSCI Elective 3</td>
</tr>
<tr>
<td></td>
<td>Physical Education Elective 0.5</td>
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<tr>
<td>Sophomore Fall</td>
<td>CHEM 255 Organic Chemistry I 4</td>
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<tr>
<td></td>
<td>CHEM 257 Organic Chemistry I Lab 1</td>
</tr>
<tr>
<td></td>
<td>MATH 133 Calculus w/ Review III 3</td>
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<td>PHYS 162 Physics II 3</td>
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<td>PHYS 164 Physics II Lab 1</td>
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<td>HUM/SSCI Elective 3</td>
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<tr>
<td>Sophomore Spring</td>
<td>CHEM 256 Organic Chemistry II 4</td>
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<td></td>
<td>CHEM 258 Organic Chemistry II Lab 1</td>
</tr>
<tr>
<td></td>
<td>CHEM 375 Inorganic Chemistry 4</td>
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<td></td>
<td>CHEM 390 Chemical Literature 1</td>
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<td>HUM/SSCI Elective 3</td>
</tr>
<tr>
<td></td>
<td>Elective 3</td>
</tr>
<tr>
<td>Junior Fall</td>
<td>CHEM 365 Analytical Chemistry 3</td>
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<td></td>
<td>CHEM 367 Analytical Chemistry Lab 1</td>
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<tr>
<td></td>
<td>CHEM 385 Physical Chemistry I 4</td>
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<td></td>
<td>HUM/SSCI Elective 3</td>
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<td>Electives 6</td>
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<td>Junior Spring</td>
<td>CHEM 366 Instrumental Analysis 3</td>
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<td></td>
<td>CHEM 368 Instrumental Analysis Lab 1</td>
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<td></td>
<td>CHEM 386 Physical Chemistry II 4</td>
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<td>CHEM 389 Physical Chemistry II Lab 1</td>
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<td>HUM/SSCI Elective 3</td>
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<td></td>
<td>Elective 3</td>
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<td>Senior Fall</td>
<td>CHEM 461 Synthesis &amp; Spectroscopy 1</td>
</tr>
<tr>
<td></td>
<td>CHEM 463 Synthesis &amp; Spectroscopy Lab 2</td>
</tr>
<tr>
<td></td>
<td>CHEM 499 Research Experience* 1</td>
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<td>HUM/SSCI Elective 3</td>
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<td></td>
<td>Advanced CHEM Elective*** 3</td>
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<td></td>
<td>Science Elective** 3/4</td>
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<td>Senior Spring</td>
<td>CHEM 499 Research Experience* 2</td>
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<td></td>
<td>ASC 400 Values Seminar 3</td>
</tr>
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<td></td>
<td>HUM/SSCI Elective 3</td>
</tr>
<tr>
<td></td>
<td>Electives 6/7</td>
</tr>
<tr>
<td>TOTAL CREDITS</td>
<td>121</td>
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</table>

* A minimum of three semester hours of CHEM 499 must be completed prior to graduation. Students should consult with their advisors as soon as possible about scheduling.

** At the 200 level or above. Students are encouraged to declare their track—ACS certified or not—early in their program, and no later than the end of their sophomore year. Electives should be designated. Students are encouraged to select courses removed from the physical sciences and attend chemistry seminars. Pre-medical students should take appropriate courses in biology in the freshman and sophomore years.

***BCH 451/453, BCH 452/454, CHEM 425/427, CHEM 475, or CHEM 488.
**CURRICULUM—CHEMISTRY WITH ACS CERTIFICATION**

<table>
<thead>
<tr>
<th>Freshman Fall</th>
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<tr>
<td>CHEM 145 General Chemistry I</td>
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<td>CHEM 147 General Chemistry Lab I</td>
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</tr>
<tr>
<td>MATH 141 Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 101 Composition &amp; Critical Thought</td>
<td>3</td>
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<tr>
<td>HUM/SSCI Elective</td>
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<thead>
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<tr>
<td>CHEM 146 General Chemistry II</td>
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<tr>
<td>MATH 142 Calculus II</td>
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<tr>
<td>PHYS 161 Physics I</td>
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<td>PHYS 163 Physics Lab I</td>
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</tr>
<tr>
<td>HUM/SSCI Elective</td>
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<td>Physical Education Elective</td>
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<tbody>
<tr>
<td>CHEM 255 Organic Chemistry I</td>
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</tr>
<tr>
<td>CHEM 257 Organic Chemistry Lab I</td>
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<tr>
<td>MATH 241 Multivariable Calculus</td>
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<th>Credits</th>
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<tr>
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<td>CHEM 375 Inorganic Chemistry</td>
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<tr>
<td>CHEM 390 Chemical Literature</td>
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<tr>
<td>BCH 451 Biochemistry I</td>
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<td>HUM/SSCI Elective</td>
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<table>
<thead>
<tr>
<th>Junior Spring</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CHEM 366 Instrumental Analysis</td>
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<td>CHEM 368 Instrumental Analysis Lab</td>
<td>1</td>
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<td>CHEM 386 Physical Chemistry II</td>
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<td>CHEM 389 Physical Chemistry Lab II</td>
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<thead>
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<th>Credits</th>
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<tbody>
<tr>
<td>CHEM 409 Senior Thesis I</td>
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</tr>
<tr>
<td>CHEM 461 Synthesis &amp; Spectroscopy</td>
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<td>CHEM 463 Synthesis &amp; Spectroscopy Lab</td>
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<td>Electives</td>
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<th>Senior Spring</th>
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<tbody>
<tr>
<td>CHEM 410 Senior Thesis II</td>
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<td>Advanced CHEM Elective*</td>
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<td>HUM/SSCI Elective</td>
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</tr>
<tr>
<td>Elective</td>
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</tr>
</tbody>
</table>

**TOTAL CREDITS** 121

*BCH 452/454, CHEM 423/427, CHEM 475, or CHEM 488.

**COMPUTER SCIENCE**

The computer science program at Widener consists of a sequence of core courses and a set of technical elective courses. The core courses cover fundamental principles. The upper-level courses include two full-year course sequences and provide in-depth exploration of chosen areas in computer science or related areas in mathematics, physics, or engineering. The program prepares students for graduate study or for employment as computer scientists.

**COMPUTING FACILITIES**

A separate computing facility supports computer science majors, independent of the facilities that serve the computing needs of all university students. This computer science laboratory is housed in Kirkbride Hall and is run by students majoring in computer science or computer information systems under the supervision of the faculty. Students are hired as managers and consultants for this laboratory. The computing facility consists of a network of late-model Intel-based machines, including SMP machines, and HP LaserJet printers. A rich assortment of software is available, including translators for C, C++, Pascal, LISP, Prolog, FORTRAN, Python, and Java. Several operating systems are installed, including Windows XP and Linux. The database software used is Oracle.

**REQUIREMENTS—COMPUTER SCIENCE MINOR**

A total of 39 semester hours: MATH 141, 142, 151, and 152 (or 322); CSCI 151, 152, 247, 248, 264, and one CSCI elective approved by the minor advisor.

**COOPERATIVE COMPUTER SCIENCE PROGRAM**

Computer science majors with at least a 2.5 grade-point average may enroll in the cooperative program. This program gives students the opportunity to work and study on a year-round basis. At the end of four years, a student will have a year of experience on the job in addition to the BS degree in computer science.

**COURSE SEQUENCE: COOPERATIVE COMPUTER SCIENCE PROGRAM**

<table>
<thead>
<tr>
<th>Freshman Fall</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CSCI 151, MATH 151, ENGL 101, HUM/SSCI elective, Physical Education Elective</td>
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<table>
<thead>
<tr>
<th>Freshman Spring</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CSCI 152, MATH 152, three HUM/SSCI electives, Physical Education Elective</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Freshman Summer</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CSCI 247, MATH 141, PHIL 120, PHYS 111, HUM/SSCI elective</td>
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</tr>
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</table>

<table>
<thead>
<tr>
<th>Sophomore Fall</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>Industry period (four months)</td>
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<table>
<thead>
<tr>
<th>Sophomore Spring</th>
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<tbody>
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<td>CSCI 248, CSCI 264, MATH 142, HUM/SSCI elective</td>
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<thead>
<tr>
<th>Sophomore Summer</th>
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<tbody>
<tr>
<td>CSCI 373, CSCI 388, CSCI 434, MATH 241 or MATH 242, two HUM/SSCI electives</td>
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<th>Junior Fall</th>
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<td>CSCI 347, MATH 273, technical elective, two free electives</td>
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<th>Junior Spring and Summer</th>
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<td>Industry period (eight months)</td>
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<td>CSCI 408, CSCI 451, PHYS 231, two technical electives</td>
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<tbody>
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<td>CSCI 409, PHYS 232, ASC 400, two technical electives</td>
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**CURRICULUM—COMPUTER SCIENCE**

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<tr>
<td>MATH 151 Introduction to Discrete Mathematics I</td>
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<td>ENGL 101 Composition &amp; Critical Thought</td>
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<td>Physical Education Elective</td>
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<td><strong>Freshman Spring</strong></td>
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<tr>
<td>CSCI 152 Introduction to Computer Science II*</td>
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<tr>
<td>MATH 152 Introduction to Discrete Mathematics II</td>
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<td>Physical Education Elective</td>
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<td><strong>Sophomore Fall</strong></td>
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<tr>
<td>CSCI 247 Data Structures &amp; Algorithms I</td>
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<td>MATH 141 Calculus I**</td>
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<td>PHIL 120 Symbolic Logic</td>
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<td>PHYS 111 Digital Circuits &amp; Information</td>
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<td>CSCI 248 Data Structures &amp; Algorithms II</td>
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<td>CSCI 264 Assembly Language</td>
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<td>CSCI 347 Computer Architecture I</td>
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<tr>
<td>CSCI 451 Operating Systems I</td>
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<td>PHYS 161 Physics I</td>
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<td>PHYS 163 Physics I Lab</td>
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<tr>
<td>MATH 273 Introduction to Probability Theory</td>
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<td>Technical Elective †</td>
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<td><strong>Junior Spring</strong></td>
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<tr>
<td>CSCI 373 Software Engineering</td>
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<td>HUM/SSCI Elective</td>
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<tr>
<td>MATH Elective ††</td>
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<td>CSCI 408 Senior Project I</td>
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<td>CSCI 409 Senior Project II</td>
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<td>Technical Electives †‡</td>
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<tr>
<td><strong>TOTAL CREDITS</strong></td>
<td>123–124</td>
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*†Technical electives must be selected from the following: Any 300-level or 400-level CSCI course not in the core, ENGR 219 & 223, 220 & 224; EE 230, 336, 337, 338; MATH 361; PHYS 315, 316; or PHIL 320. Three of the technical electives must be 300-level or 400-level CSCI courses. Additionally, technical electives must include two of the following second semester courses: CSCI 348, 364, 382, 433, 452, 462.

**‡‡MATH 241, 242, 331, 332, 373.**

Note that some of the selections for the technical and science electives require 3 and some 4 or 5 credit hours.

The timing of courses in the above ladder is recommended; it may vary, subject to individual course prerequisites.

**COMPUTER INFORMATION SYSTEMS**

The computer information systems major is a combination of the computer science major in the College of Arts and Sciences and the management MIS (management information systems) option in the School of Business Administration. The major provides a less theoretical and more applied curriculum than the computer science major, taking advantage of some applied courses in MIS.

The first two years of the curriculum are similar to the computer science major. The last two years of the curriculum introduce the student to advanced MIS courses and allow the student to focus on a number of areas in information systems through the CSCI/MIS electives.

The major prepares students to design, build, and maintain computer information systems. Graduates of the major can gain employment as systems and network analysts and database and network administrators. Please refer to the computer science curriculum on page 55 for a detailed description of the computing facilities.

**COMPUTER INFORMATION SYSTEMS MINOR**

A total of 33 semester hours: MATH 117, 118, 151, 152; CSCI 151, 152, 247, 248; MIS 290, 329; and a CSCI/MIS elective.

**COOPERATIVE COMPUTER INFORMATION SYSTEMS PROGRAM**

Computer information systems majors with at least a 2.5 GPA may enroll in the cooperative program. This program gives students an opportunity to work and study on a year-round basis. At the end of four years, a student will have a year of experience on the job in addition to the BS in computer information systems.

**COURSE SEQUENCE: COOPERATIVE COMPUTER INFORMATION SYSTEMS PROGRAM**

| Freshman Fall | CSCI 151, ENGL 101, MATH 117, SSCI elective, PE 101 |
| Freshman Spring | CSCI 152, ENGL 102, MATH 118, HIST/AH elective, Physical Education Elective |
| Freshman Summer | CSCI 247, QA 251, MATH 151, MGT 210, MIS 290 |
| Sophomore Fall | Industry period (four months) |
| Sophomore Spring | ANTH 105, CSCI 248, QA 252, MATH 152, MIS 358 |
| Sophomore Summer | CSCI 373, CSCI elective, EC 201 or 202, SSCI elective, two free electives |
| Junior Fall | PHIL 215, PHIL 120, OPM 352, MIS 441, CSCI/MIS elective |
| Junior Spring and Summer | Industry period (eight months) |
| Senior Fall | CSCI 408, CSCI 434, CSCI 451, CSCI/MIS elective, PHIL 352 |
| Senior Spring | ASC 400, CSCI 409, MIS 461, CSCI/MIS elective, two free electives |
### CURRICULUM—COMPUTER INFORMATION SYSTEMS

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>Freshman Fall</td>
<td>13.5</td>
</tr>
<tr>
<td>CSCI 151 Introduction to Computer Science I</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 101 Composition &amp; Critical Thought</td>
<td>3</td>
</tr>
<tr>
<td>MATH 117* Elementary Functions</td>
<td>3</td>
</tr>
<tr>
<td>SSCI Elective</td>
<td>3</td>
</tr>
<tr>
<td>Physical Education Elective</td>
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**Freshman Spring**

<table>
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<th>Course</th>
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<tbody>
<tr>
<td>CSCI 152 Introduction to Computer Science II</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 102 Advanced Composition &amp; Literature</td>
<td>3</td>
</tr>
<tr>
<td>MATH 118* Elementary Calculus I</td>
<td>3</td>
</tr>
<tr>
<td>History/Art History Elective</td>
<td>3</td>
</tr>
<tr>
<td>Physical Education Elective</td>
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**Sophomore Fall**

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>CSCI 247 Data Structures &amp; Algorithms I</td>
<td>4</td>
</tr>
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<td>QA 251 Elementary Statistical Analysis</td>
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<tr>
<td>MATH 151 Introduction to Discrete Mathematics I</td>
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</tr>
<tr>
<td>MGT 210 Foundations of Management</td>
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<td>PHIL 120 Symbolic Logic</td>
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<td><strong>Total Credits</strong></td>
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**Sophomore Spring**

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>CSCI 248 Data Structures &amp; Algorithms II</td>
<td>4</td>
</tr>
<tr>
<td>EC 201 or 202 Principles of Macro/Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>QA 252 Intermediate Statistical Analysis</td>
<td>3</td>
</tr>
<tr>
<td>MATH 152 Introduction to Discrete Mathematics II</td>
<td>3</td>
</tr>
<tr>
<td>MIS 290 Management Information Systems</td>
<td>3</td>
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<td><strong>Total Credits</strong></td>
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**Junior Fall**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ANTH 105 Cultural Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>PRWR 215 Effective Communication</td>
<td>3</td>
</tr>
<tr>
<td>MIS 329 Structured Systems Analysis Design***</td>
<td>3</td>
</tr>
<tr>
<td>MIS 441 Business Expert Systems</td>
<td>3</td>
</tr>
<tr>
<td>CSCI Elective</td>
<td>3</td>
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<td><strong>Total Credits</strong></td>
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**Junior Spring**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MIS 358 Database Management Systems</td>
<td>3</td>
</tr>
<tr>
<td>MIS 461 Data Communications</td>
<td>3</td>
</tr>
<tr>
<td>CSCI/MIS Elective**</td>
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<tr>
<td>SSCI Elective, 200 level</td>
<td>3</td>
</tr>
<tr>
<td>Free Elective†</td>
<td>3</td>
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**Senior Fall**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSCI 408 Senior Project I</td>
<td>2</td>
</tr>
<tr>
<td>CSCI 434 Database Systems I</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 451 Operating Systems I</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 352 Business Ethics</td>
<td>3</td>
</tr>
<tr>
<td>CSCI Elective</td>
<td>3</td>
</tr>
<tr>
<td>Free Elective†</td>
<td>3</td>
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<td><strong>Total Credits</strong></td>
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**Senior Spring**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CSCI 409 Senior Project II</td>
<td>2</td>
</tr>
<tr>
<td>ASC 400 Values Seminar</td>
<td>3</td>
</tr>
<tr>
<td>CSCI/MIS Electives**</td>
<td>6</td>
</tr>
<tr>
<td>Free Electives†</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>17</strong></td>
</tr>
</tbody>
</table>

**TOTAL CREDITS**

123

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*Students may substitute MATH 131 & 132 or MATH 141 & 142 for MATH 117 & 118.

**MIS and CSCI electives must be at the 300 level or above.

***Students may substitute CSCI 373 for MIS 329.

†No more than 10 courses should be taken within the School of Business Administration, excluding EC 201, 202, 251, and 252.

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### ENVIRONMENTAL SCIENCE

The environmental science major addresses the growing need in our society for persons possessing both a broad scientific background and an understanding of environmental relationships. The curriculum is founded solidly on the traditional sciences of biology, chemistry, geology, mathematics, and physics, yet provides considerable breadth of experience in environmental science areas. Required electives are taken in any of the sciences or in civil engineering so students can emphasize an area of particular interest. Since the major does not have a narrow focus, students are prepared for a wide range of jobs or graduate study.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>Freshman Fall</td>
<td>14.5/15.5</td>
</tr>
<tr>
<td>BIOL 161 Biological Concepts I</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 145 General Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 147 General Chemistry Lab I</td>
<td>1</td>
</tr>
<tr>
<td>ENGL 101 Composition &amp; Critical Thought</td>
<td>3</td>
</tr>
<tr>
<td>ENV 200 &amp; 210 or HUM/SSCI Elective</td>
<td>4/3</td>
</tr>
<tr>
<td>Physical Education Elective</td>
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<td><strong>Total Credits</strong></td>
<td><strong>14.5/15.5</strong></td>
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**Freshman Spring**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 162 Biological Concepts II</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 146 General Chemistry II</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 148 General Chemistry Lab II</td>
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</tr>
<tr>
<td>ENGL 102 Advanced Composition &amp; Literature</td>
<td>3</td>
</tr>
<tr>
<td>ENV 201 Environmental Geology</td>
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<tr>
<td>Physical Education Elective</td>
<td>0.5</td>
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<td><strong>Total Credits</strong></td>
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**Sophomore Fall**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BIOL 261 Biological Concepts III</td>
<td>4</td>
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<tr>
<td>CHEM 255 Organic Chemistry I</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 257 Organic Chemistry Lab I</td>
<td>1</td>
</tr>
<tr>
<td>MATH 131 Calculus I with Review</td>
<td>4</td>
</tr>
<tr>
<td>HUM/SSCI Elective or ENV 200 &amp; 210</td>
<td>3/4</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>16/17</strong></td>
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**Sophomore Spring**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ENV 209 Meteorology</td>
<td>4</td>
</tr>
<tr>
<td>ENV 261 Geographic Information Systems</td>
<td>4</td>
</tr>
<tr>
<td>ENV 299 Research Methods &amp; Analysis</td>
<td>3</td>
</tr>
<tr>
<td>MATH 132 Calculus II with Review</td>
<td>4</td>
</tr>
<tr>
<td>HUM/SSCI Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
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**Junior Fall**

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>ENVR 207 Oceanography</td>
<td>4</td>
</tr>
<tr>
<td>ENVR 301 Introductory Ecology*</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 141 College Physics I</td>
<td>5</td>
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<tr>
<td>HUM/SSCI Elective</td>
<td>3</td>
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<td><strong>Total Credits</strong></td>
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**Junior Spring**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ENVR Elective*</td>
<td>3/4</td>
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<tr>
<td>ENVR 303 Environmental Analysis</td>
<td>4</td>
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<tr>
<td>PHYS 142 College Physics II</td>
<td>5</td>
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<td>HUM/SSCI Elective</td>
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**Senior Fall**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BIOL 319 Principles of Microbiology</td>
<td>4</td>
</tr>
<tr>
<td>ENVR 304 Environmental Pollution</td>
<td>4</td>
</tr>
<tr>
<td>ENVR Elective*</td>
<td>3/4</td>
</tr>
<tr>
<td>HUM/SSCI Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
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**Senior Spring**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>Two ENVR Electives*</td>
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<tr>
<td>Free Elective</td>
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<td>ASC 400 Values Seminar</td>
<td>3</td>
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<tr>
<td>HUM/SSCI Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>15/17</strong></td>
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</table>

**TOTAL CREDITS**

124.5–127.5

*Any 300– or 400-level ENVR course, or CE 305, 348, 440, 457, or CHE 430. At least two of these must contain a lab component.

+ENVR 301 is only taught in the fall of even-numbered years.
### CURRICULUM—ENVIRONMENTAL SCIENCE BACCALAUREATE PROGRAM CURRICULUM—ENVIRONMENTAL SCIENCE/BIOLOGY DOUBLE MAJOR

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BIOL 161 Biological Concepts I</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 162 Biological Concepts II</td>
<td></td>
</tr>
<tr>
<td>CHEM 145 General Chemistry I</td>
<td>3</td>
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<tr>
<td>CHEM 146 General Chemistry II</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 148 General Chemistry II Lab</td>
<td>1</td>
</tr>
<tr>
<td>ENGL 102 Advanced Composition &amp; Literature</td>
<td>3</td>
</tr>
<tr>
<td>ENVL 200 &amp; 210</td>
<td>4</td>
</tr>
<tr>
<td>Physical Education Elective</td>
<td>0.5</td>
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<tr>
<td><strong>Freshman Spring</strong></td>
<td><strong>14.5</strong></td>
</tr>
<tr>
<td>BIOL 162 Biological Concepts II</td>
<td></td>
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<tr>
<td>CHEM 145 General Chemistry I</td>
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<td>CHEM 146 General Chemistry II</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 148 General Chemistry II Lab</td>
<td>1</td>
</tr>
<tr>
<td>ENVL 101 Composition &amp; Critical Thought</td>
<td>3</td>
</tr>
<tr>
<td>HUM/SCSI Elective</td>
<td>3</td>
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<tr>
<td>Physical Education Elective</td>
<td>0.5</td>
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<tr>
<td><strong>Sophomore Fall</strong></td>
<td><strong>16</strong></td>
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<tr>
<td>BIOL 261 Biological Concepts III</td>
<td>4</td>
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<td>CHEM 255 Organic Chemistry I</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 257 Organic Chemistry I Lab</td>
<td>1</td>
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<tr>
<td>MATH 131 Calculus I with Review</td>
<td>4</td>
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<tr>
<td>HUM/SCSI Elective</td>
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<td><strong>Sophomore Spring</strong></td>
<td><strong>16</strong></td>
</tr>
<tr>
<td>BIOL/ENVR Elective***</td>
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<tr>
<td>CHEM 256 Organic Chemistry II</td>
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<td>CHEM 258 Organic Chemistry II Lab</td>
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<tr>
<td>MATH 132 Calculus II with Review</td>
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<td>BIOL 299 Research Methods &amp; Analysis</td>
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<td>HUM/SCSI Elective</td>
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<td><strong>Summer Session 1</strong></td>
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<tr>
<td>HUM/SCSI Elective</td>
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<tr>
<td><strong>Junior Fall</strong></td>
<td><strong>16</strong></td>
</tr>
<tr>
<td>BIOL 301* Introductory Ecology</td>
<td>4</td>
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<tr>
<td>ENVL 207 Oceanography</td>
<td>4</td>
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<td>HUM/SCSI Elective</td>
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<tr>
<td>PHYS 231 University Physics I</td>
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<td><strong>Junior Spring</strong></td>
<td><strong>17</strong></td>
</tr>
<tr>
<td>ENVL 201 Environmental Geology</td>
<td>4</td>
</tr>
<tr>
<td>ENVL 209 Meteorology</td>
<td>4</td>
</tr>
<tr>
<td>ENVL 303 Environmental Analysis</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 232 University Physics II</td>
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<td><strong>Senior Fall</strong></td>
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<tr>
<td>BIOL 319 Microbiology</td>
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<tr>
<td>or ENVL 419 Applied &amp; Environmental Microbiology</td>
<td>4</td>
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<tr>
<td>ENVL 304 Environmental Pollution</td>
<td>4</td>
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<tr>
<td>BIOL/ENVR Elective***</td>
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<tr>
<td>HUM/SCSI Elective</td>
<td>6</td>
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<tr>
<td><strong>Senior Spring</strong></td>
<td><strong>15</strong></td>
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<tr>
<td>BIOL Elective***</td>
<td>4</td>
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<tr>
<td>BIOL 262 Principles of Modern Genetic Analysis</td>
<td>4</td>
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<tr>
<td>BIOL/ENVR Elective***</td>
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<tr>
<td>ASC 400 Values Seminar</td>
<td>3</td>
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</tbody>
</table>

**TOTAL CREDITS** 138

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### REQUIREMENTS—ENVIRONMENTAL SCIENCE MINOR

The following courses are required; minimum of 27 semester hours: ENVR 200/210, 201, 209, and one other 200-level or above ENVR course; BIOL 101, 161 or 162, and 301; CHEM 105–106 or 145–147.

### MATHEMATICS

The mathematics major at Widener studies both pure and applied mathematics. This double thrust of the program gives the student knowledge of abstract mathematics and the ability to apply it to the various fields where mathematics are used. The study of mathematics may be profitably combined with the study of some aspects of computer science, engineering, physical science, operations research, accounting, economics, management, social and life sciences, or education. Students who wish to major in mathematics with a concentration in actuarial science should include MATH 273 (Intro. to Probability) and MATH 373 (Mathematical Statistics) among their electives.

### REQUIREMENTS—MATHEMATICS MAJOR

1. There is no minimum SAT requirement for entering students; however, a combined score of at least 1100 is recommended.
2. The first course taken from the following requires the minimum grade listed:
   a. MATH 120 requires an A
   b. MATH 131 requires a B
   c. Any other core calculus course (MATH 132, 133, 141, 142, 241) requires a C
3. A student who fails to meet the initial course grade requirement will be placed on probation beginning the next semester. Withdrawal from the course counts as failure to meet the requirement. To be taken off of probation, a student can retake the course and satisfy the minimum grade requirement above, or elect to take the next course in the sequence and achieve the minimum grade requirement for that course instead. If this option is elected and the new minimum grade is not met, then the student must repeat one of the courses until the minimum grade requirement is met.
4. In the core calculus classes—MATH 131, 132, 133, 141, 142, 241—a maximum of one D grade is permitted. A student who has more than one D will need to repeat the appropriate course(s) to remove all but one D before being permitted to move on to 300-level MATH courses.
5. A student having more than one D or an F or a W in the core calculus classes at the beginning of a semester will be placed on probation that semester.
6. For students on the Mathematics: Secondary Education track, an overall GPA of 3.0 is required for entry into the junior year.
7. All students are required to meet the minimum standards for academic progress (see page 17 for more details).

If a student is on probation for more than two semesters, the Mathematics Department recommends consideration of another major for that student.

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*CSCI 101 may substitute; but, CSCI 131 is strongly recommended.

**BIOL elective is to be selected from the list provided under the biology curriculum ladder.

***BIOL/ENVR elective is to be selected from the following co-listed courses: BIOL/ENVR 401, 419, 499 (209; ME 499) or BIOL 302, 303, 306, 307, 308, 309, 310, 311, 313, 317, 320, 327, 405.

# 57
<table>
<thead>
<tr>
<th>COURICULUM—MATHMATICS: TRADITIONAL TRACK</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Freshman Fall</strong></td>
<td>14.5</td>
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<tr>
<td>MATH 141 Calculus I</td>
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<tr>
<td>ENGL 101 Composition &amp; Critical Thought</td>
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<td>HUM/SSCI Elective</td>
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<td>HUM/SSCI Electives</td>
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<td>MATH 241 Multivariable Calculus</td>
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<tr>
<td>PHYS 161 Physics I</td>
<td>3</td>
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<tr>
<td>PHYS 163 Physics I Lab</td>
<td>3</td>
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<td>HUM/SSCI Elective</td>
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<td>MATH 242 Elementary Differential Equations</td>
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<tr>
<td>MATH 331 Linear Algebra</td>
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<tr>
<td>MATH 300-Level Elective*</td>
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<td>MATH 341 Advanced Calculus I</td>
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<td>MATH 300-level Electives*</td>
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</table>

**TOTAL CREDITS 121**

*Any 300-level MATH course not already taken.

**Chosen from BIOL 161 or above, CHEM 145 or above, CSCI 152 or above, PHYS 162 or above, or ENVR 200 or above.

** REQUIREMENTS—MATHEMATICS MINOR **

Required courses: MATH 141, 142, or 131-132-133; two courses from among MATH 241, 242, or 273; any two 300-level courses in mathematics. Total credits required: 22–27.

** TEACHING CERTIFICATION IN MATHEMATICS **

Students majoring in mathematics can obtain secondary certification in mathematics by completing the secondary education track. Students must also follow the instructions and requirements in the Center for Education section on pages 93–95 and 98.
### Mathematics/Computer Science Dual Major

Students who complete the curriculum ladder below receive a BS in mathematics and computer science.

**Curriculum—Mathematics and Computer Science**

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<tr>
<th>Term</th>
<th>Courses</th>
<th>Credits</th>
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<td>Freshman Fall</td>
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<tr>
<td></td>
<td>CSCI 151 Introduction to Computer Science I</td>
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<td>ENGL 101 Composition &amp; Critical Thought</td>
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<td>HUM/SSCI Elective System</td>
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<td>MATH 142 Calculus II</td>
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<td></td>
<td>CSCI 152 Introduction to Computer Science II</td>
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<tr>
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<td>PHIL 120 Symbolic Logic</td>
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<td></td>
<td>Physical Education Elective</td>
<td>0.5</td>
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<td>MATH 151 Introduction to Discrete Mathematics I*</td>
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<td>MATH 241 Multivariable Calculus</td>
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<tr>
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<td>CSCI 247 Data Structures &amp; Algorithms I</td>
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<td></td>
<td>PHYS 161 Physics I</td>
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<td></td>
<td>PHYS 163 Physics I Lab</td>
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<td>MATH 152 Introduction to Discrete Mathematics II*</td>
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<td>MATH 242 Elementary Differential Equations</td>
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<td>CSCI 264 Assembly Language</td>
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<td>Junior Fall</td>
<td>MATH 273 Introduction to Probability</td>
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<td>MATH 331 Linear Algebra</td>
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<td></td>
<td>CSCI 347 Computer Architecture I</td>
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<td>Junior Spring</td>
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<td>CSCI Elective***</td>
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<td></td>
<td>CSCI 408 or MATH 408 Senior Project I†</td>
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<td>ASC 400 Values Seminar</td>
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<tr>
<td></td>
<td>CSCI 409 or MATH 409 Senior Project II†</td>
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<tr>
<td><strong>TOTAL CREDITS</strong></td>
<td></td>
<td>123</td>
</tr>
</tbody>
</table>

*^Math 322 can be substituted for MATH 151 & 152.  
**Any 300-level MATH course except MATH 331 & 322.  
***Either CSCI 408/409 sequence or MATH 408/409 sequence.

### Physics

The physics major curriculum provides a basic understanding of the various subdisciplines of physics and acquaints the student with the methods of measurement and mathematical and computer analysis. In addition, students receive a broad background in the liberal arts appropriate to the educated person in today’s culture.

The main research interests of the faculty are in quantum optics, low temperature physics, and astronomy and astrophysics. Widener is a member of the National Undergraduate Research Observatory (NURO) consortium, which maintains an observatory in Flagstaff, Arizona, exclusively for use by undergraduate students. Widener faculty and interested students travel to the observatory twice yearly for a week of observations using the 31-inch telescope and CCD detector. Data is analyzed year-round on campus.

Physics majors may attain a minor in astronomy by taking PHYS 278 and selecting PHYS 310 and 311 as the two PHYS electives in the physics curriculum ladder. The astronomy minor may also be pursued by students in the School of Engineering by taking the appropriate and upper-level physics courses, while substituting several engineering courses for corresponding physics courses.

Students who plan to pursue graduate studies in fields allied to physics (e.g., biophysics) may pursue a program of reduced loads in physics with additional coursework in the allied field.

### Requirements—Physics Minor

A physics minor is an appropriate option for students majoring in disciplines such as engineering, mathematics, computer science, and chemistry. The requirements for a minor in physics are MATH 141/142 (or the 131/132/133 sequence), 241, 242; PHYS 161, 162, 163, 164, 261/263 (or PHYS 231/232); two from PHYS 271, 272, 323, 326; and two 300- or 400-level physics lecture courses (only one of PHYS 310 or 311 may count toward this requirement).

### Requirements—Astronomy Minor

The astronomy minor requirements are designed to provide an introduction to the field of astronomy and astrophysics. The requirements for a minor in astronomy are MATH 141/142 (or the 131/132/133 sequence), 241, 242; PHYS 161, 162, 163, 164, 261/263 (or PHYS 231/232); PHYS 208, 278, 310, 311, 313 (ENGR 213 & 214, or ME 315 may substitute for PHYS 313).

### Physics/Electrical Engineering Double Major

A special curriculum allows students to major in electrical engineering and in physics. Details of the curriculum can be obtained from the chair of electrical engineering or the associate dean of science.

### Physics/Mechanical Engineering Double Major

A special curriculum allows students to major in mechanical engineering and in physics. Details of the curriculum can be obtained from the chair of mechanical engineering or the associate dean of science.

### Teaching Certification in Physics

Students majoring in physics can seek secondary certification in physics by completing the appropriate education courses. However, students may choose to major in science education—physics certification as described under “Science Education” later in this Catalog.
### CURRICULUM—PHYSICS

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>PHYS 161/163 Physics I w/ Lab</td>
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<tr>
<td>MATH 141 Calculus I</td>
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</tr>
<tr>
<td>CHEM 145/147 General Chemistry I w/ Lab</td>
<td>4</td>
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<tr>
<td>ENGL 101 Composition &amp; Critical Thought</td>
<td>3</td>
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<tr>
<td>Physical Education Elective</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>Freshman Spring</strong></td>
<td>15.5</td>
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<tr>
<td>PHYS 162/164 Physics II w/ Lab</td>
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</tr>
<tr>
<td>MATH 142 Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 146/148 General Chemistry II w/ Lab</td>
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<tr>
<td>CSCI 143 Programming in C</td>
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<tr>
<td>PHYS 208 Astronomy &amp; Astrophysics</td>
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<tr>
<td>MATH 241 Multivariable Calculus</td>
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<tr>
<td>ENGR 219/223 Electric Circuits w/ Lab</td>
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<td><strong>Sophomore Spring</strong></td>
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<td>PHYS 261/263 Physics III w/ Lab</td>
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<td>MATH 242 Differential Equations</td>
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<tr>
<td>ENGL 102 Advanced Composition &amp; Literature</td>
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<tr>
<td>HUM/SSCI Electives (2)</td>
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<tr>
<td>PHYS 271 Computational Methods in Physics</td>
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<td>PHYS 316 Mathematical Methods of Physics</td>
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<td>PHYS 315 Electromagnetic Theory††</td>
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<td>PHYS Elective*</td>
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<td>HUM/SSCI Elective</td>
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<tr>
<td>Free Elective</td>
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<tr>
<td><strong>Junior Spring</strong></td>
<td>15</td>
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<tr>
<td>PHYS 272 Experimental Methods of Physics</td>
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<tr>
<td>PHYS 316 Optics &amp; Wave Motion†</td>
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<tr>
<td>PHYS 326 Optics Lab†</td>
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<td>PHYS 413 Quantum Mechanics†</td>
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<tr>
<td>PHYS 313/323 Classical Mechanics w/ Lab††</td>
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<tr>
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<tr>
<td>PHYS 314 Thermodynamics†</td>
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<tr>
<td>PHYS 492 Senior Seminar†</td>
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<td>ASC 400 Values Seminar</td>
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<td>Technical Elective**</td>
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<td>Free Elective</td>
<td>3</td>
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</tbody>
</table>

**TOTAL CREDITS** 123

†PHYS 316, 326, 413; and PHYS 314, 492 are taught in the spring semester alternate years.
‡‡ PHYS 315 and PHYS 313, 323 are taught in the fall semester alternate years.

*Choose physics electives from the following (one offered each fall): PHYS 310 Theoretical Astrophysics, PHYS 311 Methods of Observational Astronomy, PHYS 317 Relativity and Advanced Topics, PHYS 318 Solid State Physics, PHYS 319 Laser Physics, PHYS 333 Advanced Mechanics II, PHYS 388 Special Topics, PHYS 414 Advanced Quantum Mechanics.

**Technical elective is to be chosen from the following: Any 200-level or above CSCI course, MATH 273 or any 300-level MATH course, any ENGR or EE course approved by the physics advisor.

### SCIENCE ADMINISTRATION

The science administration program combines a broad basic science background with advanced study in the areas of accounting, economics, and management. The graduate is thus prepared for an administrative position in a research organization, medical facility, environmental company, or other industry.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 101 Composition &amp; Critical Thought</td>
<td>3</td>
</tr>
<tr>
<td>MATH 131 Calculus I with review</td>
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</tr>
<tr>
<td>CHEM 145 General Chemistry I</td>
<td>3</td>
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<tr>
<td>CHEM 147 General Chemistry Lab I</td>
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<tr>
<td>BIOL 161 Biological Concepts I</td>
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<tr>
<td>MIS 180 Computing &amp; Spreadsheets</td>
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<td>ENVR 200 Introduction to Environmental Science</td>
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<td>MATH 132 Calculus II with review</td>
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<td>EC 201 Principles of Microeconomics</td>
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<td>ACCT 204 Financial Accounting</td>
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<td>BIOL 261 Biological Concepts III</td>
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<td>EC 202 Principles of Macroeconomics</td>
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<td>BIOL 301 Introductory Ecology</td>
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<td>BLAW 150 Legal and Ethical Envr. of Business</td>
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<td>BIOL 299 Research Methods</td>
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<td>MKT 300 Marketing Principles</td>
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<td>12/14</td>
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<td>ASC 400 Values Seminar</td>
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<tr>
<td>Free Elective</td>
<td>3</td>
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</tbody>
</table>

**TOTAL CREDITS** 127–131†

*Science electives must be distributed between only two sciences or concentrated entirely in environmental science/earth and space science at the 200 level or above. The total science elective credits must sum to at least 12, by a combination of three or more courses.

**Management elective may be selected from any 300- or 400-level course in the School of Business Administration.

†A minimum of 127–131 credits depending on science electives.
**SCIENCE EDUCATION**

The science education major is designed for students seeking secondary teaching certification in biology, physics, chemistry, earth and space science, and general science. The courses required for certification are prescribed in the following curriculum ladders. Students must also follow the instructions and requirements in the Center for Education section on pages 93–95 and 98. Students may seek certification in more than one field; however, this usually requires more than eight semesters. Students who wish to become certified in more than one area should work closely with their faculty advisor when planning course schedules.

**CURRICULUM—SCIENCE EDUCATION:**

**BIOLOGY CERTIFICATION**

<table>
<thead>
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<th>Semester</th>
<th>Credits</th>
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<td><strong>Freshman Fall</strong></td>
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<tr>
<td>BIOL 161 Biological Concepts I</td>
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<td>CHEM 145 General Chemistry I</td>
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<td>CHEM 147 General Chemistry Lab I</td>
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<td>ED 101 Introduction to Teaching†</td>
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<tr>
<td>ED 102 Introduction to Educational Technology</td>
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<td>MATH 142 Calculus II*</td>
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<td>ED 1423 Collaboration &amp; Inclusion</td>
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</tbody>
</table>

**TOTAL CREDITS** 126–129

†Students must have current criminal record checks, FBI clearances, and child abuse clearances. See page 94 for details.

*Students may substitute MATH 131–132 for MATH 141–142.

**One advanced science elective must be from the following list: BIOL 303, 305, 306, 307, 313, 317, and one must be BIOL 302, BIOL 310, BIOL 319, or BCH 451.

**CURRICULUM—SCIENCE EDUCATION:**

**CHEMISTRY CERTIFICATION**

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<th>Semester</th>
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<td>ED 1423 Collaboration &amp; Inclusion</td>
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</tbody>
</table>

**TOTAL CREDITS** 126–128

†Students must have current criminal record checks, FBI clearances, and child abuse clearances. See page 94 for details.

‡Students must take a minimum of 6 credits of science electives. In the spring of their junior year or the fall of their senior year, they must select a course from the following: BCH 451/452, CHEM 386/389, CHEM 425/427, CHEM 461/463, CHEM 475, CHEM 488, or ENVR 304. The additional science elective can be any BIOL, BCH, CHEM, MATH, CSCI, PHYS, ENVR, or ESSC course at the 200 level or above.
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<th>Credits</th>
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<td>CHEM 145 General Chemistry I</td>
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<td>MATH 141 Calculus I*</td>
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<td>Free Electives</td>
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<td><strong>TOTAL CREDITS</strong></td>
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1 Students must have current criminal record checks, FBI clearances, and child abuse clearances. See page 94 for details.

*Student may substitute MATH 131–132 for MATH 141–142.

**ENVR electives must include ESSC/ENVR 207 and two other courses from the following list: ESSC 202+212, ESSC 203, ESSC 205, ESSC 206, ESSC 220.

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<td>Physical Education Elective</td>
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<td>ASC 400 Values Seminar</td>
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<td><strong>TOTAL CREDITS</strong></td>
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</tr>
</tbody>
</table>

1 Students must have current criminal record checks, FBI clearances, and child abuse clearances. See page 94 for details.

*Student may substitute MATH 131–132 for MATH 141–142.

The certification in general science is frequently taken by students along with another area of certification such as earth and space science. The general science certification permits students to teach many comprehensive science courses offered in junior high schools and middle schools.
CURRICULUM—SCIENCE EDUCATION:

PHYSICS CERTIFICATION

Freshman Fall .................................................. 15.5
PHYS 161 Physics I ...................................... 3
PHYS 163 Physics I Lab .................................. 1
MATH 141 Calculus I ........................................ 4
ED 101 Introduction to Teaching† ...................... 3
ED 102 Introduction to Educational Technology .... 1
ENGL 101 Composition & Critical Thought ........ 3
Physical Education Elective ................................. 0.5

Freshman Spring ............................................... 14.5
PHYS 162 Physics II ........................................ 3
PHYS 164 Physics II Lab ..................................... 1
MATH 142 Calculus II ....................................... 4
HUM Elective ................................................... 3
ENGL 102 Advanced Composition & Literature .... 3
Physical Education Elective ................................. 0.5

Sophomore Fall ................................................. 17
PHYS 208 Astronomy & Astrophysics .................... 3
MATH 241 Multivariable Calculus ......................... 4
CHEM 145 General Chemistry I .......................... 3
CHEM 147 General Chemistry I Lab ...................... 1
PSY 105 Introduction to Psychology ...................... 3
Free Elective ..................................................... 3

Sophomore Spring .............................................. 17
PHYS 261 Physics III ......................................... 3
PHYS 263 Physics III Lab ..................................... 1
MATH 242 Differential Equations ......................... 3
CHEM 146 General Chemistry II ......................... 3
CHEM 148 General Chemistry II Lab ..................... 1
ED/PSY 201 Educational Psychology ................... 3
ED 1422 Teaching English Language Learners ....... 3

Junior Fall ......................................................... 17
PHYS 271 Computational Methods of Physics .......... 1
PHYS 309 Mathematical Methods of Physics* ........ 3
PHYS 315 Electromagnetic Theory* ..................... 3
BIOL 101 Principles of Biological Systems .......... 4
ED/PSY 250 Effective Instructional Practices & Delivery
Methods for All Levels of Special Education Support . 3
ED 309 Methods: Secondary Science ................... 3

Junior Spring ....................................................... 15
PHYS 314/316 Thermodynamics or Optics** ........... 3
PHYS 272 Experimental Methods of Physics .......... 1
PHYS 278 Astronomy & Astrophysics Lab ............... 1
PHYS 413 Quantum Mechanics** ....................... 4
ED 1421 Literacy Intervention in the Content Areas
for Learners with Disabilities ............................. 3
HUM Elective ..................................................... 3

Senior Fall ......................................................... 18
PHYS 313 Classical Mechanics I* ......................... 3
ASC 400 Values Seminar .................................... 3
PHYS 492 Senior Seminar .................................. 3
HUM Elective ..................................................... 3
SSCI Elective ........................................................ 3
Free Elective ..................................................... 3

Senior Spring ..................................................... 12
ED 1412 Student Teaching .................................. 9
ED 1423 Collaboration & Inclusion ...................... 3

TOTAL CREDITS ................................................. 126

†Students must have current criminal record checks, FBI clearances,
and child abuse clearances. See page 94 for details.

*PHYS 309, 315 and PHYS 313, 323 are taught in the fall semester alternate years.
**PHYS 316, 326, 413 and PHYS 314, 492 are taught in the spring semester alternate years.

REQUIREMENTS—NATURAL SCIENCE MINOR

The natural science minor is intended for nonscience majors only.

Any two 100-level BIOL courses (at least 1 with a lab) ............ 7/8
Any two 100-level ESSC courses (at least 1 with a lab) ............ 7/8
Either ENVR 100 and any 200 level ESSC or ENVR course
with a lab, or ENVR 200/210 and any 200-level ESSC or
ENVR course* .................................................. 7/8
Any 100-level CHEM/PHYS course ................................ 3/4

TOTAL CREDITS .................................................. 24–28

*Note: One cannot obtain credit in this minor for both ENVR 100 and ENVR 200.

REQUIREMENTS—EXPERIMENTAL SCIENCE MINOR

This minor requires a total of 32 semester hours. Courses: BIOL
161, BIOL 308 or BIOL 309 (or 499 with lab or field experience);
CHEM 145, 146, 147, 148; MATH 141, 142 or MATH 131, 132;
PHYS 161, 162, 163, 164 (or 231–232). NOTE: The experimental
science minor may not be awarded to biology majors.

INTERDISCIPLINARY MAJORS

MILITARY SCIENCE (ARMY ROTC)

Widener students are eligible to participate in the U.S. Army
Reserve Officers’ Training Corps (ROTC) program at the university.
Army ROTC offers students the opportunity to graduate
with a college degree and a commission in the U.S. Army, Army
National Guard, or the U.S. Army Reserve.

There is no commitment or obligation to enroll in ROTC.
The military science courses offered are electives that students
can register for or withdraw from just like any other elective.
Students do not major in ROTC, and they cannot be pulled out of
college to participate in military operations. Although cadets wear
Army uniforms to class once a week, they do not enter the Army
until after they graduate and are commissioned as officers.

Army ROTC is a four-year program consisting of a Basic Course
taken during the freshman and sophomore years, and an
Advanced Course taken during the junior and senior years.
Successful completion of the Basic Course is required before
placement into the Advanced Course. If a student is considering
ROTC but has already completed one or two years of college,
the Basic Course requirement can be satisfied through prior
military service or attendance of the four-week Army ROTC
Leader’s Training Course at the end of the sophomore year.

The military science curriculum focuses on leadership develop-
ment with the goal of preparing cadets for commissioning as sec-
ond lieutenants following graduation. ROTC produces 70 percent
of the Army’s Officer Corps and over 90 percent of all Army
Nurses. Activities are conducted on- and off-campus through
tours, battlefield staff rides, social functions, and field training exercises.
Hands-on training is given in land navigation, first aid, rifle marks-
manship, rappeling, small unit tactics, drill and ceremony, physical
training, and other basic military skills.

Army ROTC offers four-, three-, and two-year 100% tuition
scholarships, plus $1,200 per year for books and a $300–500 per
month tax-free stipend. All scholarship winners receive free
room and board. For more information, see the “ROTC Scholar-
ship” section of this Catalog and contact the Widener University
Department of Military Science at 610-499-4098.


### BASIC COURSE

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students may enroll in the Basic Course to explore and evaluate the ROTC program without incurring any military or financial obligation and may withdraw at any time, subject to Widener course withdrawal requirements.</td>
<td></td>
</tr>
</tbody>
</table>

**Freshman Year**

- MS 101 Leadership & Personal Development ................. 1
- MS 102 Introduction to Tactical Leadership ............... 1
- Enroll in PE 107B ........................................... 0.5
- Participate in leadership development program.

**Sophomore Year**

- MS 201 Innovative Team Leadership .......................... 2
- MS 202 Foundations of Tactical Leadership ................. 2
- Participate in leadership development program.

**TOTAL CREDITS** 6.5

### ADVANCED COURSE

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Junior Year</td>
<td></td>
</tr>
</tbody>
</table>
- MS 301 Adaptive Tactical Leadership ............................ 3
- MS 302 Leadership in Changing Environments .............. 3
- Attend five-week Leadership Development & Assessment Course at Fort Lewis, Washington.
- Nursing students can also volunteer for a three-week clinical at an Army hospital.
- Participate in leadership development program.

**Senior Year**

- MS 401 Developing Adaptive Leaders ......................... 3
- MS 402 Leadership in a Complex World .......................... 3
- MS 499 Independent Study .................................... 1–3
- Participate and complete the leadership development program.

**TOTAL CREDITS** 13–15

### COMMISSIONING REQUIREMENTS

Eligibility for commissioning in the U.S. Army, U.S. Army Reserve, and the Army National Guard through the ROTC program is contingent upon successful completion of the Leader Development and Assessment Course as well as academic courses required by Widener and the U.S. Army. The required Professional Military Education (PME) course is one American military history course from the following: HIST 321, 377, 388, or MS 400. Math reasoning and human behavior courses are recommended but not required.

### WOMEN’S STUDIES

Women’s studies creates a critical thinking framework for a systematic re-examination of the historical, economic, political, social, and cultural experiences of women. The components of both the major and the minor include interdisciplinary core courses that survey feminist research methods and scholarship, and a selection of elective courses drawn from a variety of disciplines. Courses in women’s studies address one or more of the following issues: (1) examination of the lives, achievements, and perspectives of women in the past and present; (2) exploration of gender roles as cultural and cross-cultural concepts; (3) awareness of living in a gendered environment, both in the public and private realm; (4) examination of the impact of gender on social structures and stratification systems.

The purpose of the women’s studies major is to facilitate exploration of the rapidly expanding interdisciplinary scholarship in women’s studies, thereby enriching Widener’s current undergraduate curricula. Students’ ability to articulate what they have learned about interdisciplinary scholarship as it pertains to the intersection of gender, race, ethnicity, sexuality, and class will enhance their potential for success in their professions.

Students may pursue just the women’s studies major or a dual major with women’s studies and another discipline. A number of students dual major in women’s studies and social work (see page 102 for the curriculum ladder).

### REQUIREMENTS—WOMEN’S STUDIES MAJOR

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Required Courses (12 credits)</strong></td>
<td></td>
</tr>
</tbody>
</table>
- WS 101 Introduction to Women’s Studies** .................. 3
- WS 355 Feminist Theories and Methodology .................. 3
- WS 394 Women’s Studies Practicum .......................... 3
- WS 409 Senior Capstone .................................... 3

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Electives (21 credits)</strong></td>
<td></td>
</tr>
</tbody>
</table>
- Students select seven cross-listed courses from the following list. At least three courses must be from humanities, and three courses must be from the social sciences; two of the courses from humanities and all courses from social sciences must be upper-level courses.

- WS 104/HIST 104 Women in the Western Tradition
- WS 130/ENG 130/HUM 130 Literature of the Non-Western World
- WS 146/ENG 146 Women Writers: 1800 to the Present
- WS 147/ENG 147 Literature of the American Minority
- WS 188 Special Topics in Women’s Studies
- WS 203/SOC 203 Sociology of Youth
- WS 205/ANTH 205 Human Sexuality in Cross-Cultural Context
- WS 206/PSY 206 Psychology of Women
- WS 215/SOC 215 The Family
- WS 225/SW 225 Women’s Issues Across the Life Span
- WS 230/CJ 230 Domestic Violence & the Justice System
- WS 240/SOC 240 Gender & International Development
- WS M241 Women & the Criminal Justice System
- WS 245/CJ 245 Women & Criminal Justice
- WS 270/SW 270 Human Sexuality
- WS 275/SOC 275 African & African American Women in Society
- WS 288 Special Topics in Women’s Studies
- WS 305/PSY 305 Psychology of Women, Men, & Work
- WS 313/HUM 313 Selected Topics in Literature & Film
- WS 315/ECS 315 Women, Men, & Work
- WS 317/SOC 317 Sociology of Sex & Gender
- WS 326/HIST 326 Gender in European History
- WS 350/AH 350 Women & Art
- WS 351/HIST 351 History of Women in America to 1870
- WS 352/HIST 352 History of Women in America Since 1870
- WS 367/SOC 367 Social Movements & Social Change
- WS 371/HIST 371 Women & Work in 20th-Century United States
- WS 388 Special Topics in Women’s Studies
- WS 499 Independent Study
- WS M950/HUM M950 The Legacy of Eve

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Related Fields (9 credits)</strong></td>
<td></td>
</tr>
</tbody>
</table>
- Three courses from related disciplines to be determined in consultation with the director of women’s studies.

**TOTAL CREDITS** 42

*Core women’s studies courses will periodically be offered in the evening for both day and evening students.

**Counts for general education distribution credit.

***All women’s studies courses that are cross-listed with humanities courses count for general education humanities credit. Those cross-listed with science courses count for general education science credit. Those cross-listed with social science courses count for general education social science credit.

### WOMEN’S STUDIES MINOR

A total of 18 semester hours. Required courses are WS 101 Introduction to Women’s Studies and five elective women’s studies courses. A minimum of two courses must be selected from humanities, and a minimum of two courses must be selected from social sciences. At least two courses are required at the upper-division level.
School of Business Administration

All programs accredited by AACSB International—
The Association to Advance Collegiate Schools of Business

PHILOSOPHY AND PURPOSE OF PROGRAM

The role of the School of Business Administration has expanded significantly in recent years in response to demands upon our nation’s energies and scarce resources. Men and women who aspire to positions of leadership in industry or government must enter their professional fields with a knowledge of the cultural environment and the societal values that provide the rationale for managerial and entrepreneurial activity.

The faculty of the School of Business Administration has developed major programs to prepare graduates to assume the responsibilities of leadership in their chosen career fields. Each major curriculum provides a balance of liberal and professional studies to develop technical competence and social sensitivity.

Business students are taught applications of quantitative and scientific methods in both basic and advanced courses. Behavioral issues related to the role of business, business ethics, the future of capitalism, corporate social responsibility, economic power, and the significance of value premises in decision making are integral parts of each curriculum. Management is studied as an open system interacting with political, social, and economic institutions in a dynamic global environment.

All majors provide a common body of knowledge through a core program of basic courses considered vital to the professional, manager, or entrepreneur. The core program provides the foundation for continuing professional growth and development. It consists of 17 courses, which are listed in the Curricula Section. In addition to the customary majors in accounting, economics, international business, and management, students may pursue double majors, minors, or specialized concentrations. Outstanding students may undertake independent study programs and special projects, and participate in internships and co-op.

The widespread application of management principles in all types of not-for-profit organizations points out the utility of coursework in this field for students majoring in other disciplines. For students in the College of Arts and Sciences, special programs leading to a minor in business are available.

The students are the primary focus of the School of Business Administration; thus, all aspects of the mission reflect a commitment to students’ growth and development.

VISION

Widener University School of Business Administration’s vision is to be a premier business school in the region recognized for challenging, trend-setting programs for educating future business leaders.

MISSION

At the Widener University School of Business Administration, we prepare students for successful careers and leadership positions in business. We provide a challenging educational environment that promotes lifelong professional and personal growth through experiential and service learning. Our commitment to ethics and to diversity of thought, experience, and background inspires our students, faculty, and staff to become proactive and socially responsible citizens. As teacher-scholars, we value scholarship and generate knowledge that is valuable to our profession and the business community. We embrace the interests of our stakeholders and engage them in our programs and activities.

STRATEGIC GOALS

Goal 1: Create a challenging undergraduate program that motivates students to learn, inspires them to be responsible citizens, and develops their career potential through a rigorous classroom experience and experiential learning opportunities.

Goal 2: Develop a high quality graduate program that enhances students’ job performance and career advancement through state-of-the-art courses offered in flexible delivery modes.

Goal 3: Increase the school’s graduate student enrollment while maintaining desirable levels of diversity and quality in the student body.

Goal 4: Engage all School of Business Administration faculty in high quality research, the pursuit of teaching excellence, and active participation in the school’s and the university’s programs and events.

Goal 5: Create an organizational environment at the School of Business Administration that will stimulate and reward innovative and provide for efficient development and implementation of new programs and other competitive initiatives.

Goal 6: Create mutually beneficial partnerships with regional businesses that will increase our visibility and recognition, contribute to faculty development, and provide career and experiential learning opportunities for our students.

Goal 7: Develop lifelong learning and career enhancement initiatives.

LEARNING GOALS

To assist the School of Business Administration in monitoring how well the educational mission of the school is being achieved, student learning goals were developed. The learning goals for students graduating from the School of Business Administration’s undergraduate program are as follows:

- Students will be competent in core business concepts.
- Students will be proficient in discipline-specific knowledge and skills pertaining to their major.
- Students will have an interdisciplinary perspective on problem solving and decision-making.
- Students will be effective communicators.
- Students will have effective interpersonal skills.
- Students will have effective critical thinking skills.
- Students will identify and consider the ethical and social responsibility implications of decisions made in the business environment.

ACADEMIC ENRICHMENT

WRITING ENRICHED COURSES

A writing enriched course is one that has three or more writing assignments that include student editing and revision of corrected drafts so that students learn to identify and correct their writing errors. The multiple writing assignments, including revisions, must total at least 25 pages. In addition to ENGL 101, students must take at least four writing enriched courses, preferably one during each year of their four years. Students in the School of Business Administration typically take ENGL 102, PRWR 215, PHIL 352, and MGT 452 at Widener University to meet this requirement. Any course taken to satisfy the writing enriched requirement may not be taken on a pass/no pass basis.
HONORS PROGRAM
The School of Business Administration Honors Program is experientially focused and intended to attract and challenge students who are interested in pursuing traditional business topics at a more intense level and/or studying current topics in more depth than allowed in the traditional business curriculum. Students are admitted to the SBA Honors Program at two points: as first-semester freshman (based on high school rank and SAT scores) and at the end of freshman year (based on GPA). Students accepted into the SBA Honors Program are required to take a minimum of three SBA honors courses, which may include honors sections of required courses and courses designed just for the Honors Program. SBA honors students are expected to maintain a minimum 3.25 GPA and attend at least four SBA enrichment activities, which may include the SBA Honors Banquet, the Speaker Series, or professional meetings.

COOPERATIVE EDUCATION
The Cooperative Education (co-op) program provides students with a well-balanced combination of classroom study and work experience. The opportunity for practical application in a career-related job complements the classroom learning. Widener’s program allows students to gain up to twelve months of full-time work experience through two separate placements, while maintaining a four-year graduation timeline. Students earn, on average, $28,000 over the two co-op terms. Please contact the director of cooperative education for more information.

INTERNSHIPS
Students interested in gaining practical experience while pursuing their academic degree are urged to perform an internship in their junior or senior year. It is strongly recommended that students enrolled in the sport management concentration complete an internship. Internships may be paid or unpaid, and are usually completed during an academic semester. Some internships may qualify for academic credit for use as a free elective. Please see the School of Business Administration’s director of experiential education for more information.

SERVICE LEARNING
The School of Business Administration provides opportunities for students to serve the community while learning business concepts. These opportunities range from class projects and assignments with local nonprofit organizations to assisting entrepreneurial start-up operations in the area and preparing income tax returns for low-income taxpayers. Students interested in engaging in discipline-specific community service activities will be appropriately trained and placed in structured experiences that include a reflective component such as a journal or group discussion.

SAP CERTIFICATE OF RECOGNITION
The SAP Certificate of Recognition is awarded to students who have completed three courses designated as SAP approved. This recognition is made possible through Widener’s alliance with SAP AG, a German-based software solutions company specializing in enterprise systems.

PRE-LAW PREPARATION
Law schools consider a variety of factors in making final decisions on who will be admitted; however, the applicant’s cumulative average and the Law School Admissions Test (LSAT) score are two very important indicators.

The concept of a “pre-law” program or curriculum is very flexible. Law schools do not suggest any single curriculum path as an ideal preparation for law school. Therefore, to say that a student is in a pre-law program simply means that the student intends to apply to law school in the future.

Law schools do not specify what academic major will increase a student’s prospects for admission. They want students who can think, read, write, and have some understanding of the forces that have shaped human experience and society. Often courses in law school involve the study of a business and the legal environment that surrounds it. A student pursuing a major in the School of Business Administration with a well-organized selection of electives in the College of Arts and Sciences will be well-prepared for law school.

Widener University School of Law offers a special admittance program for Widener undergraduates. Students who are in the top 50 percent of their class and score in the top 50 percent on the LSAT are guaranteed a seat in the Widener Law School program. Two final stipulations are that students apply no later than December 1 in the year before they plan to attend and can meet standards for ethical conduct.

PRE-LAW ADVISING
A School of Business Administration Pre-Law Advising Committee consisting of Professors Gregory P. Cermignano (JD), Sandra K. Miller (JD, LLM), and Kenn B. Tacchino (JD, LLM), all bar admitted attorneys, is available to provide students with access to current information concerning preparation for and admission to law school.

ACCELERATED BS/MBA AND BS/MS PROGRAM
For outstanding students in the School of Business Administration undergraduate programs, this is an accelerated path to obtaining a bachelor degree and a master’s degree. Outstanding students in their junior year may apply for acceptance to the program. In most instances, this allows a student to complete the BS and MS in five years. This applies to the MS in Information Systems, Human Resource and Organizational Leadership, and Taxation and Financial Planning programs.

• All foundation courses should be completed in the bachelor’s degree program.
• The GMAT must be taken before graduate courses can be started (i.e., junior year).
• Upon acceptance, two graduate courses can be taken in the senior year to complete the bachelor’s degree and be counted toward the MS degree.
• First contact your undergraduate advisor and, after determining your eligibility, contact the department head and Office of Graduate Business Programs.
• In an effort to comply with the AICPA’s and Pennsylvania’s 150-credit hour requirement, qualified accounting majors may count two of the graduate courses completed in the bachelor’s program toward the MS in taxation and financial planning degree or one course toward the MS in information systems or MBA degree.

THE CURRICULA

BASIC CURRICULA IN ACCOUNTING, ECONOMICS, INTERNATIONAL BUSINESS, AND MANAGEMENT

 Majors in the School of Business Administration must complete all courses listed below. All students are urged to elect a second year of mathematics particularly if they plan to pursue graduate studies. Entering students should complete BLAW 150, BUS 110, MATH 117–118, MIS 180, ANTH 105, and ENGL 101–102 in the freshman year to gain the prerequisites for many subsequent courses. For all SBA students, MATH 118 is a prerequisite for taking SBA core junior (300 level) business courses.

Students should declare majors, concentrations, and minors prior to preregistration for the junior year. Coursework in the chosen area(s) of specialization should begin no later than the first semester of the junior year.
Transfer students may receive credit for required courses taken at other accredited institutions but must complete a minimum of 50 percent of their major program at Widener and meet the university’s academic residency requirement.

NOTE: Students outside the School of Business Administration are not permitted to take more than eight School of Business Administration courses (24 credits).

CLASS STANDING REQUIREMENTS

<table>
<thead>
<tr>
<th>Class year</th>
<th>Completed credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman</td>
<td>0-27.99</td>
</tr>
<tr>
<td>Sophomore</td>
<td>28-56.99</td>
</tr>
<tr>
<td>Junior</td>
<td>57-88.99</td>
</tr>
<tr>
<td>Senior</td>
<td>89 or more</td>
</tr>
</tbody>
</table>

ACADEMIC REGULATIONS

Students must maintain a minimum cumulative GPA of 2.0 in SBA courses and an overall cumulative GPA of 2.0 to maintain academic good standing. Both are required for graduation.

BUSINESS ADMINISTRATION REQUIREMENTS

Core Business Curriculum—(49 credits)

BUS 110 Introduction to Business Concepts
BLAW 150 Legal & Ethical Environment of Business
MIS 180 Computing & Spreadsheets
ACCT 204-ACCT 205 Financial/Managerial Accounting
EC 201-202 Macro- and Microeconomics (Social Sciences)
QA 251-252 Elementary / Intermediate Statistics
MG 210 Foundations of Management
MIS 290 Management Information Systems
EC Elective (300 level or above)
FIN 303 Financial Management
OPM 352 Operations Management
MG 365 International Business
MKT 300 Marketing Principles
MG 452 Management Policy & Strategy

Field of Specialization

Accounting 26 credits (see p. 69)
Economics 21–27 credits based upon concentration (see p. 70)
International Business 18 credits (see p. 72)
Management 21 credits (see p. 73)

General Education

ENGL 101 Composition & Critical Thought
ENGL 102 Advanced Composition & Literature (Humanities)
ANTH 105 Cultural Anthropology
MATH 117 Elementary Functions (Math/Science)
MATH 118 Elementary Calculus I (Math/Science)
PRWR 215 Effective Communication
PHIL 352 Business Ethics (Humanities)
Humanities Electives (6 credits)**
Social Science Electives (6 credits, one at 200+ level)**
Math/Science Electives (6 credits)
Non-SBA Electives (credits vary by major/concentration)**
Free Electives (credits vary by major/concentration)**
Physical Education Electives

TOTAL CREDITS 122*

*Accounting majors require 124 credits for the bachelor of science in business administration.

**Major/concentration may specify courses.

ACCOUNTING

The accounting curriculum meets both the short- and long-range needs of students who wish to enter the accounting profession. The program will prepare the student for entry into corporate, institutional (e.g., government and not-for-profit), or public accounting. The program is also designed to meet the needs of those who plan to extend their formal education at the graduate level and those who wish to pursue the 150-hour program.

In addition to the School of Business Administration’s requirements, accounting majors must take the following courses (26 credits):

- ACCT 308 Intermediate Accounting I (4 credits)
- ACCT 309 Intermediate Accounting II (4 credits)
- ACCT 330 Accounting Information Systems
- ACCT 402 Advanced Accounting Concepts
- ACCT 405 Federal Income Taxation
- or ACCT 407 Corporate Federal Income Taxation
- ACCT 415 Auditing & Professional Responsibility
- or ACCT 417 Internal Auditing
- ACCT 451 Accounting Seminar
- ACCT Elective (300 level or higher)

NOTE: In an effort to comply with the AICPA’s 150-credit hour requirement, qualified accounting majors who meet the entrance requirements may count two of the graduate courses completed in the bachelor’s program toward the MS in taxation and financial planning degree or one course toward the MS in information systems or MBA degree.

See also “Cooperative Programs in Accounting, Economics, International Business, and Management” on page 74.

FORENSIC ACCOUNTING MINOR

This minor is designed exclusively for accounting majors who wish to develop expertise in the area of financial fraud examination, detection, and prevention. It is an advanced specialty within the accounting major. The minor is interdisciplinary in nature and includes courses from computer science and criminal justice.

REQUIREMENTS: FORENSIC ACCOUNTING MINOR

Prerequisites are in parentheses.

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 307 Fraud Examination</td>
<td>3</td>
</tr>
<tr>
<td>(ACCT 204, 205, junior standing)</td>
<td></td>
</tr>
<tr>
<td>ACCT 415 Auditing, Attestation, and Professional Responsibility (ACCT 308 or 309, junior standing)</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 130 Introduction to Computer Forensics</td>
<td>3</td>
</tr>
<tr>
<td>CJ 320 White Collar Crime</td>
<td>3</td>
</tr>
</tbody>
</table>

Elective Courses

Select two of the following: 6

- ACCT 304 Case Studies in Financial Reporting and Analysis (ACCT 204, 205)
- ACCT 314 Advanced Managerial Accounting (ACCT 204, 205)
- ACCT 414 Case Studies in Managerial Accounting (ACCT 204, 205)
- ACCT 417 Internal Auditing (ACCT 204, 205)
- MIS 441 Decision Support Systems (MIS 290)
MINORS IN ACCOUNTING

Designed for non-accounting students in the School of Business Administration. Courses will provide, in varying degrees, the requisite background needed to pursue professional certification in areas such as management accounting (certified management accountant), and internal auditing (certified internal auditor). The minor consists of three courses beyond ACCT 204 and ACCT 205. Prerequisites must be met. Students may select from the following:

- ACCT 304 Case Studies in Financial Reporting & Analysis
- ACCT 306 Taxation & Accounting for Small & Family-Owned Businesses
- ACCT 307 Fraud Examination
- ACCT 308 Intermediate Accounting I*
- ACCT 309 Intermediate Accounting II*
- ACCT 314 Advanced Managerial Accounting
- ACCT 330 Accounting Information Systems
- ACCT 400 Taxation for the Business Manager
- ACCT 401 Accounting & Taxation in the Sport Industry
- ACCT 402 Advanced Accounting Concepts
- ACCT 404 International Accounting & Reporting
- ACCT 405 Federal Income Taxation
- ACCT 407 Corporate Federal Income Tax
- ACCT 408 Principles of Estate Planning
- ACCT 409 Pensions & Retirement
- ACCT 410 Not-for-Profit & Governmental Accounting
- ACCT 414 Case Studies in Managerial Accounting
- ACCT 415 Auditing & Professional Responsibility
- ACCT 417 Internal Auditing
- ACCT 420 Accounting & Taxation of Mutual Funds
- ACCT 435 Advanced Accounting Information Systems
- ACCT 450 Selected Advanced Accounting Topics
- ACCT 451 Accounting Seminar

*Students must achieve at least a C+ (2.3) in both ACCT 204 and 205 or receive permission from the head of the Department of Accounting and Information Management to enroll in ACCT 308 or 309.

Note: Students should be sure to satisfy prerequisite requirements for selected courses.

CURRICULUM—ACCOUNTING

<table>
<thead>
<tr>
<th>Freshman Fall</th>
<th>16.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANT 105 and 1 Elective; or 2 Electives†</td>
<td>6</td>
</tr>
<tr>
<td>BUS 110 Introduction to Business Concepts†‡</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 102 Advanced Composition &amp; Literature</td>
<td>3</td>
</tr>
<tr>
<td>MATH 118 Elementary Calculus I*</td>
<td>3</td>
</tr>
<tr>
<td>Physical Education Elective</td>
<td>0.5</td>
</tr>
<tr>
<td>TO TAL CR E DITS</td>
<td>124</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Freshman Spring</th>
<th>15.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 204 Financial Accounting**</td>
<td>3</td>
</tr>
<tr>
<td>EC 201 Principles of Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>EC 202 Principles of Macroeconomics††</td>
<td>3</td>
</tr>
<tr>
<td>Elective†</td>
<td>3</td>
</tr>
<tr>
<td>TO TAL CR E DITS</td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sophomore Fall</th>
<th>15</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 205 Managerial Accounting***</td>
<td>3</td>
</tr>
<tr>
<td>EC 300- or 400-level Elective</td>
<td>3</td>
</tr>
<tr>
<td>MGT 300 Marketing Principles††</td>
<td>3</td>
</tr>
<tr>
<td>OPM 352 Operations Management††</td>
<td>3</td>
</tr>
<tr>
<td>TO TAL CR E DITS</td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sophomore Spring</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 309 Intermediate Accounting II***</td>
<td>4</td>
</tr>
<tr>
<td>MGT 365 International Business††</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 352 Business Ethics††</td>
<td>3</td>
</tr>
<tr>
<td>Elective†</td>
<td>3</td>
</tr>
<tr>
<td>TO TAL CR E DITS</td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Junior Fall</th>
<th>15</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 314 Auditing &amp; Professional Responsibility††</td>
<td>3</td>
</tr>
<tr>
<td>or ACCT 417 Internal Auditing</td>
<td>3</td>
</tr>
<tr>
<td>EC 300- or 400-level Elective</td>
<td>3</td>
</tr>
<tr>
<td>MGT 452 Management Policy &amp; Strategy</td>
<td>3</td>
</tr>
<tr>
<td>2 Electives†</td>
<td>6</td>
</tr>
<tr>
<td>TO TAL CR E DITS</td>
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</table>

<table>
<thead>
<tr>
<th>Junior Spring</th>
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<tbody>
<tr>
<td>ACCT 451 Accounting Seminar††</td>
<td>3</td>
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<tr>
<td>4 Electives††</td>
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<td>TO TAL CR E DITS</td>
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</table>

*Qualified students are urged to substitute MATH 141-142.
**Students must achieve at least a C+ (2.3) in both ACCT 204 and 205 or receive permission from the head of the Department of Accounting and Information Management to enroll in ACCT 308 or 309.
†Accounting majors must complete two humanities electives, two social science electives (one at the 200+ level), two science/math electives, one non-SBA elective, and two free electives. Accounting students who plan to sit for the CPA exam are encouraged to take BLAW 260. The completion of two business law courses (e.g., BLAW 150 and 260) and/or two finance courses is a CPA requirement in some states. Students should examine individual state requirements. For more information, contact the Department of Accounting and Information Management or write to the applicable state CPA Board.
††Course may be taken in either fall or spring semester.
CERTIFICATE IN ACCOUNTING FOR CRIMINAL JUSTICE MAJORS

The purpose of the certificate in accounting is to provide non-SBA students who are majoring in criminal justice with an opportunity to obtain additional exposure to accounting and business law. Courses in this program will provide, in varying degrees, the background needed to pursue professional certification in such areas as management accounting (certified management accountant), and internal auditing (certified internal auditor). The total number of accounting credits needed to earn a certificate is 12 credits. Three credits of business law are also required. There are also non-SBA requirements.

CERTIFICATE IN ACCOUNTING

Required SBA Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ACCT 204 Financial Accounting</td>
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</tr>
<tr>
<td>ACCT 205 Managerial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BLAW 260 Business Law or BLAW 288 Business Law for Students of Criminal Justice or BLAW 280</td>
<td></td>
</tr>
<tr>
<td>Sports &amp; the Law</td>
<td>3</td>
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<tr>
<td>Choose any two of the following courses:</td>
<td>6</td>
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<tr>
<td>ACCT 304 Case Studies in Financial Reporting &amp; Analysis</td>
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</tr>
<tr>
<td>ACCT 306 Taxation &amp; Accounting for Small &amp; Family Owned Businesses</td>
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<tr>
<td>ACCT 307 Fraud Examination</td>
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</tr>
<tr>
<td>ACCT 314 Advanced Managerial Accounting</td>
<td></td>
</tr>
<tr>
<td>ACCT 330 Accounting Information Systems</td>
<td></td>
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<tr>
<td>ACCT 417 Internal Auditing</td>
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Non-SBA Requirements

<table>
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<tr>
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<tr>
<td>MATH 117 (science elective)</td>
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<tr>
<td>CJ 320 White Collar Crime (CJ elective)</td>
<td></td>
</tr>
<tr>
<td>Computer proficiency (determined by the department head of Accounting and Information Management)</td>
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Other Recommended Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MATH 118 (science elective)</td>
<td></td>
</tr>
<tr>
<td>PHIL 352 (humanities elective)</td>
<td></td>
</tr>
<tr>
<td>CSCI 101 or MIS 180 or IS 101</td>
<td></td>
</tr>
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</table>

150-CREDIT HOUR

REQUIREMENT IN PENNSYLVANIA

Students aspiring to be CPAs in the Commonwealth of Pennsylvania in the year 2012 and beyond are required to have 150 credit hours of qualifying education. The SBA and the Department of Accounting and Information Management have designed several options to meet this requirement. Options include earning a master's degree (5-year option) or meeting the requirement at the undergraduate level (4-year option). For questions concerning the 150-credit hour requirement and the options available at Widener, please contact the department head of Accounting and Information Management.

ECONOMICS

The general economics curriculum prepares students for professional careers in business, government, law, and teaching, as well as for graduate study in economics and related disciplines.

In addition to the core curriculum, economics majors are required to complete the following courses (21 credits):

- EC 311 Microeconomic Theory
- EC 312 Macroeconomic Theory
- EC 401 Money and Financial Institutions
- EC 451 Economics Seminar
- International SBA elective
- Two economics electives

See also “Cooperative Programs in Accounting, Economics, International Business, and Management” on page 74.

CURRICULUM—ECONOMICS

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Freshman Fall</td>
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<tr>
<td>ANTH 105 Cultural Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>BLAW 150 Legal &amp; Ethical Environment of Business**</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 101 Composition &amp; Critical Thought</td>
<td>3</td>
</tr>
<tr>
<td>MATH 117 Elementary Functions*</td>
<td>3</td>
</tr>
<tr>
<td>MIS 180 Computing &amp; Spreadsheets**</td>
<td>1</td>
</tr>
<tr>
<td>1 Elective†</td>
<td>3</td>
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<tr>
<td>Physical Education Elective</td>
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</tr>
<tr>
<td>Freshman Spring</td>
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</tr>
<tr>
<td>ENGL 102 Advanced Composition &amp; Literature</td>
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<tr>
<td>MATH 118 Elementary Calculus I*</td>
<td>3</td>
</tr>
<tr>
<td>BUS 110 Introduction to Business Concepts**</td>
<td>3</td>
</tr>
<tr>
<td>2 Electives†</td>
<td>6</td>
</tr>
<tr>
<td>Physical Education Elective</td>
<td>0.5</td>
</tr>
<tr>
<td>Sophomore Fall</td>
<td>15</td>
</tr>
<tr>
<td>ACCT 204 Financial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>EC 201 Principles of Macroeconomics**</td>
<td>3</td>
</tr>
<tr>
<td>PRWR 215 Effective Communication**</td>
<td>3</td>
</tr>
<tr>
<td>QA 251 Elementary Statistical Analysis</td>
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<td>1 Elective†</td>
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<td>ACCT 205 Managerial Accounting</td>
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<td>EC 202 Principles of Microeconomics**</td>
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<td>MIS 290 Management Information Systems**</td>
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<tr>
<td>QA 252 Intermediate Statistical Analysis</td>
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<td>Elective†</td>
<td>3</td>
</tr>
<tr>
<td>Junior Fall</td>
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</tr>
<tr>
<td>EC 311 Microeconomic Theory</td>
<td>3</td>
</tr>
<tr>
<td>FIN 303 Financial Management**</td>
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</tr>
<tr>
<td>MGT 210 Foundations of Management**</td>
<td>3</td>
</tr>
<tr>
<td>EC Elective</td>
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</tr>
<tr>
<td>Elective†</td>
<td>3</td>
</tr>
<tr>
<td>Junior Spring</td>
<td>15</td>
</tr>
<tr>
<td>EC 312 Macroeconomic Theory</td>
<td>3</td>
</tr>
<tr>
<td>EC 401 Money &amp; Financial Institutions</td>
<td>3</td>
</tr>
<tr>
<td>MGT 365 International Business**</td>
<td>3</td>
</tr>
<tr>
<td>MKT 300 Marketing Principles**</td>
<td>3</td>
</tr>
<tr>
<td>OPM 352 Operations Management**</td>
<td>3</td>
</tr>
<tr>
<td>Senior Fall</td>
<td>15</td>
</tr>
<tr>
<td>MGT 452 Management Policy &amp; Strategy</td>
<td>3</td>
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<tr>
<td>PHIL 352 Business Ethics</td>
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<tr>
<td>International SBA Elective</td>
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<tr>
<td>EC Elective</td>
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<tr>
<td>1 Elective†</td>
<td>3</td>
</tr>
<tr>
<td>Senior Spring</td>
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<tr>
<td>EC 451 Economics Seminar</td>
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<td>EC Elective</td>
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<tr>
<td>3 Electives†</td>
<td>9</td>
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</table>

TOTAL CREDITS: 122

*Qualified students are urged to substitute MATH 141, 142.
**Course may be taken in either the fall or spring semester.
†Economics majors must complete two humanities electives, two social science electives (one at the 200+ level), two science/math electives, one non-SBA elective, and three free electives.
MINOR IN ECONOMICS
The economics minor is designed for students who are majoring in accounting, international business, or management and who have an interest in economics, including the economic aspects of public policy issues. This minor enables such students to further pursue their intellectual interests and receive recognition that they have completed a minor field of study. The electives chosen to fulfill the economics minor will broaden students’ knowledge of economic matters, as well as strengthen their powers of reasoning and analytical skills. This minor will enhance student employment opportunities and their professional development, including preparation for graduate school.

Students may earn a minor by completing the SBA core requirement 300-level or above economics elective, as well as three more 300-level or above economics electives.

FINANCIAL SERVICES TRACK
The Financial Services track provides students with a bachelor of science in business administration with an economics major, an accounting minor, and upper-level finance coursework that prepares students to also pursue a minor in finance.

The coursework required for the degree is approved for registration by the Certified Financial Planner Board of Standards, Inc.® Such registration would permit students who complete the degree to sit for the Certified Financial Planner (CFP®) exam.

Courses in the Financial Services track include:
- EC 408 (Instead of economics elective)
- EC 311 Microeconomic Theory
- EC 312 Macroeconomic Theory
- EC 401* Money and Financial Institutions
- FIN 305* Investments
- FIN 320* Risk Management and Finance
- ACCT 405* Federal Income Tax
- ACCT 408* Principles of Estate Planning
- ACCT 409* Pensions and Retirement
- EC 453* Financial Services Seminar

*Courses meet the CFP® course content requirements.

See also “Cooperative Programs in Accounting, Economics, International Business, and Management.”

Certified Financial Planner Board of Standards, Inc., (CFP Board) has registered specified curriculum, offered by Widener University, that enables students who complete the prescribed curriculum to sit for the CFP® Certification Examination. Successful completion of the exam, along with other requirements, allows the candidate to use the CFP marks.

CFP®, Certified Financial Planner™, and CFP [with flame logo]® are certification marks owned by Certified Financial Planner Board of Standards. These marks are awarded to individuals who successfully complete CFP Board’s initial and ongoing certification requirements.

Widener University does not certify individuals to use the CFP®, Certified Financial Planner™, and CFP [with flame logo]® certification marks. CFP certification is solely granted by Certified Financial Planner Board of Standards, Inc., to those persons who, in addition to completing the educational requirement such as this CFP Board-registered program, have met its ethics, experience, and examination requirements.

CURRICULUM—ECONOMICS/ FINANCIAL SERVICES TRACK Credits

Freshman Fall ......................................................... 16.5
ANTH 105 Cultural Anthropology* .......................... 3
BLAW 150 Legal & Ethical Environment of Business* .... 3
ENGL 101 Composition & Critical Thought ............... 3
MATH 117 Elementary Functions ............................... 3
MIS 180 Computing & Spreadsheets* ....................... 1
1 Elective† ............................................................ 3
Physical Education Elective ................................. 0.5

Freshman Spring .................................................... 15.5
BUS 110 Introduction to Business Concepts* ............. 3
ENGL 102 Advanced Composition & Literature .......... 3
MATH 118 Elementary Calculus I ......................... 3
2 Electives† .......................................................... 6
Physical Education Elective ................................. 0.5

Sophomore Fall ...................................................... 15
ACCT 204 Financial Accounting .............................. 3
EC 201 Principles of Macroeconomics** .................. 3
PRWR 215 Effective Communication .................... 3
QA 251 Elementary Statistical Analysis ................. 3
1 Elective† ............................................................ 3

Sophomore Spring .................................................. 15
ACCT 205 Managerial Accounting ....................... 3
EC 202 Principles of Microeconomics** ................. 3
MIS 290 Management Information Systems ........... 3
QA 252 Intermediate Statistical Analysis ............... 3
1 Elective† ............................................................ 3

Junior Fall ........................................................... 15
EC 311 Microeconomic Theory ............................... 3
EC 408 International Economics or EC 401 Money & Financial Institutions .................. 3
FIN 303 Financial Management ......................... 3
MGT 210 Foundations of Management ................. 3
PHIL 352 Business Ethics* ................................. 3

Junior Spring ........................................................ 15
EC 312 Macroeconomic Theory ......................... 3
FIN 320 Risk Management & Insurance Planning ...... 3
MGT 365 International Business* ......................... 3
MKT 300 Marketing Principles* ............................. 3
OPM 352 Operations Management ...................... 3

Senior Fall ........................................................... 15
ACCT 405 Federal Income Tax .............................. 3
ACCT 408 Principles of Estate Planning ............... 3
EC 401 Money & Financial Institutions or EC 408 International Economics .......... 3
FIN 305 Investments .............................................. 3
1 Elective† ............................................................ 3

Senior Spring ........................................................ 15
ACCT 409 Pension & Retirement Planning ............. 3
EC 453 Economic Seminar in Financial Services .... 3
MGT 452 Management Policy & Strategy .............. 3
2 Electives† .......................................................... 6

TOTAL CREDITS .................................................. 122

*Course may be taken in the fall or spring semester.

**Economics/financial services majors must complete two humanities electives, two social science electives (one at the 200+ level), two science/math electives, one non-SBA elective, and one free elective.

Students may choose to enroll in a finance course as a free elective (dependent upon course availability) to complete a finance minor.
INTERNATIONAL BUSINESS

As the world business community continues to move toward a global economy, the demand for people skilled in international business rises. Therefore, it is the objective for the international business major to provide students with an opportunity to enhance their business administration background with intensive knowledge and skills in international business.

This major is particularly useful for students pursuing careers in which knowledge of other cultures is beneficial. Students develop knowledge and skills in areas such as international relations, foreign languages, and the history, politics, language, and culture of particular geographic regions, as well as understanding the global business environment. The interdisciplinary approach exposes students to a variety of perspectives, which provides for a more well-rounded international education.

In addition to the core curriculum, international business majors are required to complete the following courses:

EC 408 International Economics
FIN 423 International Finance
MHR 465 International Human Resource Mgt
MKT 410 International Marketing
MGT 451 Management Seminar
OM 445 Management of Tech., Productivity, & Change
Modern Language (6 credits)

See also “Cooperative Programs in Accounting, Economics, Economics/Financial Services, International Business, and Management” on page 74.

CURRICULUM—INTERNATIONAL BUSINESS

<table>
<thead>
<tr>
<th>Freshman Fall</th>
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<tbody>
<tr>
<td>ANTH 105 Cultural Anthropology</td>
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<tr>
<td>BLAW 150 Legal &amp; Ethical Environment of Business</td>
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<td>ENGL 101 Composition and Critical Thought</td>
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<td>MATH 117 Elementary Functions</td>
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</tr>
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<td>MIS 180 Computing &amp; Spreadsheets</td>
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<tr>
<td>Modern Language Elective</td>
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<td>Physical Education Elective</td>
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<tr>
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<tbody>
<tr>
<td>BUS 110 Introduction to Business Concepts</td>
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<tr>
<td>ENGL 102 Advanced Composition &amp; Literature</td>
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<tbody>
<tr>
<td>ACCT 204 Financial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>EC 201 Principles of Macroeconomics</td>
<td>3</td>
</tr>
<tr>
<td>MGT 210 Foundations of Management</td>
<td>3</td>
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<tr>
<td>PRWR 215 Effective Communication</td>
<td>3</td>
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<td>QA 251 Elementary Statistical Analysis</td>
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<tbody>
<tr>
<td>ACCT 205 Managerial Accounting</td>
<td>3</td>
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<tr>
<td>EC 202 Principles of Microeconomics</td>
<td>3</td>
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<tr>
<td>GP 222 American Foreign Policy</td>
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<td>MIS 290 Management Information Systems</td>
<td>3</td>
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<td>QA 252 Intermediate Statistical Analysis</td>
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<thead>
<tr>
<th>Junior Fall</th>
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<tbody>
<tr>
<td>GP 102 Foreign Governments</td>
<td>3</td>
</tr>
<tr>
<td>GP 221 Introduction to International Relations</td>
<td>3</td>
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<td>GP 352 International Business</td>
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<thead>
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<th>Junior Spring</th>
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<tr>
<td>MHR 465 International Human Resource Management</td>
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<td>MGT 300 Marketing Principles</td>
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<td>OM 352 Operations Management</td>
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<td>PHIL 352 Business Ethics</td>
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<th>Senior Fall</th>
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<tbody>
<tr>
<td>EC 408 International Economics</td>
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<td>FIN 423 International Finance</td>
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<td>MGT 451 Management Seminar</td>
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<td>MGT Elective</td>
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<tbody>
<tr>
<td>MGT 452 Management Policy &amp; Strategy</td>
<td>3</td>
</tr>
<tr>
<td>MKT 410 International Marketing</td>
<td>3</td>
</tr>
<tr>
<td>OM 445 Management of Tech., Productivity, &amp; Change</td>
<td>3</td>
</tr>
<tr>
<td>Two Electives</td>
<td>6</td>
</tr>
</tbody>
</table>

TOTAL CREDITS 122

*Qualified students are urged to substitute MATH 141, 142.
†International business majors must complete two science/math electives and four free electives.
††Course may be taken in either the fall or spring semester.
MANAGEMENT

The management program provides a sound preparation for careers in the functional areas of management within the private or public sectors and the pursuit of graduate studies in management and related areas. Students may concentrate their electives so as to attain an adequate level of specialization in functional fields such as management information systems, human resources, marketing and advertising, finance, operations management, or sport management. In addition to the core curriculum, management majors are required to complete the following courses:

- MGT 451 Management Seminar
- OPM 445 Management of Tech., Productivity, & Change
- Management electives (12 credits)

See also “Cooperative Programs in Accounting, Economics, International Business, and Management” on page 74.

PROGRAM CONCENTRATIONS IN MANAGEMENT

Students interested in specialization within the management program should complete at least 12 credit hours of upper-level (300- or 400-level) coursework as specified in any of the concentrations listed below. Those seeking a broader education in management may follow the general management track.

General Management Concentration

This concentration is available to students desiring a broad-based program of study, or who wish to combine courses to satisfy individual interests. Requirements: all required courses for management majors plus any four upper-level (300- or 400-level) management electives.

Financial Management Concentration

This concentration is intended for students whose interests lie in the field of finance, insurance, real estate, financial planning, or investments. Courses in the financial management concentration include:

- FIN 305 Investments
- FIN 307 Capital Budgeting
- FIN 320 Risk Management and Insurance Planning
- FIN 406 Portfolio Theory and Management
- FIN 408 Investing in Mutual Funds
- FIN 423 International Financial Management
- FIN 424 Case Studies in Finance

Human Resource Management Concentration

This concentration is designed for students who strive for careers in personnel relations, industrial relations, human resource planning, and related fields. Courses in the human resource concentration include:

- EC 315 Women, Men, and Work
- MHR 316 Introduction to Human Resource Management
- MHR 325 Managing Diversity in the Workplace
- MHR 465 International Human Resource Management

Management Information Systems (MIS) Concentration

The MIS concentration offers courses designed to prepare students for careers in computer programming, systems analysis and design, and information management. Courses in the MIS concentration include:

- MIS 329 Structured Systems and Analysis*
- MIS 358 Database Management Systems*
- MIS 363 Object-Oriented Design and Development*
- MIS 421 Information Technology Solutions in Business
- MIS 425 Special Topics in Information Technology
- MIS 430 ERP Systems and Workflow Management
- MIS 440 Web Design
- MIS 441 Decision Support Systems
- MIS 461 Data Communications

*All three 300-level MIS courses must be taken as part of the MIS concentration.

Marketing Management Concentration

This concentration is designed for students interested in careers in sales, distribution, advertising, and related fields. Courses in the marketing management concentration include:

- MKT 320 Event Planning and Sport Marketing
- MKT 400 Consumer and Business Buyer Behavior
- MKT 402 Marketing Management
- MKT 403 Professional Personal Selling
- MKT 405 Sales Management
- MKT 406 Marketing Research
- MKT 409 Customer Relationship Management
- MKT 410 International Marketing
- MKT 412 Advertising

Operations Management Concentration

Business competitiveness is highly driven by effective management of operations. This concentration is designed for students interested in management careers in service and/or manufacturing operations. This includes for-profit, as well as nonprofit organizations. Courses in the operations management concentration include:

- MGT 409 Senior Project
- MIS 430 ERP Systems & Workflow Management*
- MKT 409 Customer Relationship Management*
- OPM 375 Global Operations Management
- OPM 380 Introduction to Management Science
- OPM 460 Supply Chain Management*

*Upon graduation, students who have completed these three courses will earn a SAP Certificate of Recognition.

Sport Management Concentration

This concentration is designed for those students who would like to pursue careers in management of professional sports, intercollegiate sports, interscholastic sports, health/sports facilities, and community recreation, as well as in marketing of sports-related products and programs. In addition to the core curriculum, the following courses are required in this concentration:

- BLAW 280 Sports and the Law
- COMS 130 Mass Media & Society (SSCI elective)
- MHR 316 Intro. to Human Res. Mgmt. (MGT elective)
- PE 206 Org. & Adm. of Athletic Coaching
- or PE 215 Med. Aspects of Athletic Coaching (A&S elective)
- PSY 105 Introduction to Psychology (SSCI elective)
- SMGT 300 Sport Mgmt. & Admin. (MGT elective)
- SMGT 340 Sport Sales & Marketing (MGT elective)
- SMGT 451 Sem. in Sport Mgmt. (replaces MGT 451)
- SMGT Elective

MINORS IN MANAGEMENT

Students pursuing a major in the School of Business Administration may earn a minor in finance, human resource management, marketing management, or operations management by completing three 300-level or above elective courses in the appropriate field. To earn a minor in MIS, students must take MIS 329, MIS 358, and one 300-level or above MIS course.
<table>
<thead>
<tr>
<th>CURRICULUM—MANAGEMENT:</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FIN, MHR, MKT, MIS, OPM, GEN, MGT††</strong></td>
<td>122</td>
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**Freshman Fall** 16.5
- ANTH 105 Cultural Anthropology 3
- BUS 110 Introduction to Business Concepts** 3
- ENGL 101 Composition & Critical Thought 3
- MATH 117 Elementary Functions* 3
- MIS 180 Computing & Spreadsheets** 1
- Elective† 3
- Physical Education Elective 0.5

**Freshman Spring** 15.5
- BLAW 150 Legal & Ethical Environment of Business** 3
- ENGL 102 Advanced Composition & Literature 3
- MATH 118 Elementary Calculus I* 3
- 2 Electives† 6
- Physical Education Elective 0.5

**Sophomore Fall** 15
- ACCT 204 Financial Accounting 3
- EC 201 Principles of Macroeconomics** 3
- MGT 210 Foundations of Management** 3
- QA 251 Elementary Statistical Analysis 3
- Elective† 3

**Sophomore Spring** 15
- ACCT 205 Managerial Accounting 3
- EC 202 Principles of Microeconomics** 3
- MIS 290 Management Information Systems** 3
- PRWR 215 Effective Communication** 3
- QA 252 Intermediate Statistical Analysis 3

**Junior Fall** 15
- FIN 303 Financial Management** 3
- MGT 365 International Business** 3
- MKT 300 Marketing Principles* 3
- MGT Elective † 3
- Elective† 3

**Junior Spring** 15
- OPM 352 Operations Management** 3
- PHIL 352 Business Ethics 3
- EC Elective** 3
- MGT Elective† 3
- Elective† 3

**Senior Fall** 15
- OPM 445 Management of Tech., Prod., & Change** 3
- MGT 451 Management Seminar** 3
- International SBA Elective 3
- 2 Electives† 6

**Senior Spring** 15
- MGT 452 Management Policy & Strategy** 3
- 2 MGT Electives** 6
- 2 Electives† 6

**TOTAL CREDITS** 122

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**CURRICULUM—MANAGEMENT: SPORT MANAGEMENT**

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<tr>
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<tr>
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<tr>
<td>BUS 110 Introduction to Business Concepts** 3</td>
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<tr>
<td>ENGL 101 Composition &amp; Critical Thought 3</td>
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<tr>
<td>MATH 117 Elementary Functions* 3</td>
</tr>
<tr>
<td>MIS 180 Computing &amp; Spreadsheets** 1</td>
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<tr>
<td>PSY 105 Introduction to Psychology 3</td>
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<td>Physical Education Elective 0.5</td>
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- Elective† 3

**Freshman Spring** 15.5
- ANTH 105 Cultural Anthropology 3
- BLAW 150 Legal & Ethical Environment of Business** 3
- COMS 130 Mass Media & Society 3
- ENGL 102 Advanced Composition & Literature 3
- MATH 118 Elementary Calculus I* 3
- Physical Education Elective 0.5

**Sophomore Fall** 15
- ACCT 204 Financial Accounting 3
- EC 201 Principles of Macroeconomics** 3
- MGT 210 Foundations of Management** 3
- PRWR 215 Effective Communication** 3
- QA 251 Elementary Statistical Analysis 3

**Sophomore Spring** 15
- ACCT 205 Managerial Accounting 3
- BLAW 280 Sports & the Law 3
- EC 202 Principles of Microeconomics** 3
- MGT 365 International Business** 3
- MIS 290 Management Information Systems** 3
- QA 252 Intermediate Statistical Analysis 3

**Junior Fall** 15
- FIN 303 Financial Management** 3
- MGT 365 International Business** 3
- MKT 300 Marketing Principles** 3
- SMGT 300 Sport Management & Administration 3
- EC Elective** 3
- Elective† 3

**Junior Spring** 15
- OPM 352 Operations Management** 3
- MGT 365 International Business** 3
- PHIL 352 Business Ethics 3
- SMGT 451 Seminar in Sport Management 3
- Elective† 3

**Senior Fall** 15
- OPM 445 Management of Tech., Prod., & Change** 3
- MHR 316 Introduction to Human Resource Mgmt. 3
- SMGT 340 Sport Sales & Marketing 3
- SSCI Elective (upper level) 3
- Elective† 3

**Senior Spring** 15
- MGT 452 Management Policy & Strategy 3
- PE 206 Org & Adm of Coach or PE 215 Med Asp of Coach 3
- SMGT Elective 3
- 2 Electives† 6

**TOTAL CREDITS** 122

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*Qualified students are urged to take MATH 141, 142.
**Course may be taken in either the fall or spring semester.
†Management majors must complete two humanities electives, two social science electives (one at the 200+ level), two science/math electives, one non-SBA elective, and three free electives.
††Excluding sport management.
COOPERATIVE PROGRAMS IN ACCOUNTING, ECONOMICS, INTERNATIONAL BUSINESS, AND MANAGEMENT

The school’s cooperative education programs in business offer qualified students an optimum combination of theory and practice within a four-year time span. The opportunity for practical application in a productive job heightens students’ appreciation of their classroom instruction; plus, the salaries earned during a total of twelve months of work help defray college expenses.

Normally, students are employed in the surrounding Delaware Valley communities. Students may also arrange their own employment, subject to School of Business Administration approval, to meet individual preferences for employer and geographical location.

Participants in the cooperative education program must maintain a GPA of at least 2.5 in their major field of study and overall academic record at the conclusion of their second semester for sophomore assignments and at the end of the fifth semester for junior co-op assignments. Sophomore and junior assignments are four and eight months respectively. In addition, students must exhibit personal characteristics meeting their potential employers’ recruiting standards, and must perform satisfactorily in their working positions. Although the Office of Cooperative Education works with students during the job search process, it is the students’ responsibility to interview and qualify for the positions. A co-op student who falls short of these requirements but who meets the school’s other standards may, of course, continue studies at Widener according to the standard (non co-op) curriculum.

There is no guarantee that co-op students, upon graduation, will be offered permanent positions by their co-op employers, although this frequently occurs. In any event, their combined academic and practical experience should give them a distinct advantage in seeking employment and in identifying career alternatives.

CURRICULUM—ACCOUNTING: CO-OP

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<tr>
<th>Credits</th>
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<tr>
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<td>BLAW150 Legal &amp; Ethical Environment Business**</td>
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<td>ENGL 101 Composition &amp; Critical Thought</td>
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<td>MATH 117 Elementary Functions*</td>
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<td>MIS 180 Computing &amp; Spreadsheets**</td>
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<td>BUS 110 Introduction to Business Concepts††</td>
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<td>ENGL 102 Advanced Composition &amp; Literature</td>
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<td>MATH 118 Elementary Calculus†</td>
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<td>ACCT 204 Financial Accounting**</td>
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<td>ACCT 205 Managerial Accounting**</td>
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<td>ACCT 308 Intermediate Accounting I**</td>
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<td>ACCT 330 Accounting Information Systems</td>
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<td></td>
<td>QA 252 Intermediate Statistical Analysis</td>
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<td>Elective†</td>
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<table>
<thead>
<tr>
<th>Freshman Summer</th>
<th>Sophomore Fall (First work period (four months))</th>
<th>Sophomore Spring</th>
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<td>15</td>
<td>ACCT 205 Managerial Accounting**</td>
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<td></td>
<td>MGT 210 Foundations of Management</td>
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<td></td>
<td>MIS 290 Management Information Systems</td>
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<td></td>
<td>PRWR 215 Effective Communications</td>
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<td></td>
<td>QA 251 Elementary Statistical Analysis</td>
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<td>Elective†</td>
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<table>
<thead>
<tr>
<th>Sophomore Summer</th>
<th>Sophomore Fall (Second work period (eight months))</th>
<th>Senior Fall</th>
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<tr>
<td>16</td>
<td>ACCT 309 Intermediate Accounting II**</td>
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<td>ACCT 405 Federal Income Tax</td>
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<td>FIN 303 Financial Management</td>
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<td>MGT 365 International Business or OPM 352 Operations Mgmt</td>
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<td>OPW 352 Operations Management or MGT 365 Int’l Business</td>
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<td>PHIL 352 Business Ethics</td>
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<th>Junior Spring and Summer</th>
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<th>Junior Fall</th>
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<td>2nd work period (8 months)</td>
<td>ACCT 415 Auditing &amp; Professional Responsibility††</td>
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<td>or ACCT 417 Internal Auditing</td>
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<td>EC 300 or 400 level Elective</td>
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<td></td>
<td>MGT 452 Management Policy &amp; Strategy††</td>
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<td>2 Electives</td>
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<th>Senior Spring</th>
<th>Senior Fall</th>
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<td>ACCT 451 Accounting Seminar ††</td>
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<td></td>
<td>4 Electives†††</td>
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</tbody>
</table>

TOTAL CREDITS 124

*Qualified students are urged to substitute MATH 141–142.
**Students must achieve at least a C+ (2.3) in both ACCT 204 and 205 or receive permission from the head of the Department of Accounting and Information Management to enroll in ACCT 308 or 309.
†Accounting majors must complete two humanities electives, two social science electives (one at the 200+ level), two science/math electives, one non-SBA elective, and two free electives. Accounting students who plan to sit for the CPA exam are encouraged to take BLAW 260. The completion of two business law courses (e.g., BLAW 150 and 260) and/or two finance courses is a CPA requirement in some states. Students should examine individual state requirements. For more information, contact the Department of Accounting and Information Management or write to the applicable state CPA Board.
††Course may be taken in either the fall or spring semester.
<table>
<thead>
<tr>
<th>CURRICULUM—ECONOMICS: CO-OP</th>
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<td>ANTH 105 Cultural Anthropology</td>
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<td>BLAW 150 Legal &amp; Ethical Environment of Business</td>
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<tr>
<td>ENGL 101 Composition &amp; Critical Thought</td>
<td>3</td>
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<tr>
<td>MATH 117 Elementary Functions*</td>
<td>3</td>
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<tr>
<td>MIS 180 Computing &amp; Spreadsheets</td>
<td>1</td>
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<tr>
<td>Elective†</td>
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</tr>
<tr>
<td>Physical Education Elective</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>Freshman Spring</strong></td>
<td>15.5</td>
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<tr>
<td>ACCT 204 Financial Accounting</td>
<td>3</td>
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<tr>
<td>ENGL 102 Advanced Composition &amp; Literature</td>
<td>3</td>
</tr>
<tr>
<td>MATH 118 Elementary Calculus I†</td>
<td>3</td>
</tr>
<tr>
<td>BUS 110 Introduction to Business Concepts</td>
<td>3</td>
</tr>
<tr>
<td>Elective†</td>
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<tr>
<td>Physical Education Elective</td>
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<tr>
<td><strong>Freshman Summer</strong></td>
<td>15</td>
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<tr>
<td>ACCT 205 Managerial Accounting</td>
<td>3</td>
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<tr>
<td>QA 251 Elementary Statistical Analysis</td>
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<td>MGT 210 Foundations of Management</td>
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<tr>
<td>PRWR 215 Effective Communication</td>
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<td><strong>Sophomore Fall</strong></td>
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<tr>
<td>EC 202 Principles of Microeconomics**</td>
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<td>MIS 290 Management Information Systems</td>
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<td>QA 252 Intermediate Statistical Analysis</td>
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<tr>
<td>2 Electives†</td>
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<td><strong>Sophomore Summer</strong></td>
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<tr>
<td>FIN 303 Financial Management</td>
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<td>OPM 352 Operations Management</td>
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<tr>
<td>MKT 300 Marketing Principles</td>
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<td>2 Electives†</td>
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<tr>
<td><strong>Junior Fall</strong></td>
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<tr>
<td>EC 201 Principles of Macroeconomics**</td>
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<tr>
<td>EC 311 Microeconomic Theory</td>
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<tr>
<td>MGT 365 International Business</td>
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<tr>
<td>or PHIL 352 Business Ethics</td>
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<td>EC Elective</td>
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<td><strong>Junior Spring and Summer</strong></td>
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<tr>
<td>EC 312 Macroeconomic Theory</td>
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<tr>
<td>EC 451 Economics Seminar</td>
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<td>International SBA Elective</td>
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<td>2 Electives†</td>
<td>6</td>
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<tr>
<td><strong>Total Credits</strong></td>
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</table>

*Qualified students are urged to substitute MATH 141, 142.
**EC 201 or EC 202 may be offered in the summer or spring.
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<tr>
<th>CURRICULUM—ECONOMICS/ FINANCIAL SERVICES: CO-OP</th>
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<tr>
<td><strong>Freshman Fall</strong></td>
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<tr>
<td>ANTH 105 Cultural Anthropology</td>
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<td>BLAW 150 Legal &amp; Ethical Environment of Business*</td>
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<td>MATH 117 Elementary Functions</td>
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<tr>
<td>MIS 180 Computing &amp; Spreadsheets*</td>
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<td>Elective†</td>
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</tr>
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<td>Physical Education Elective</td>
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<tr>
<td><strong>Freshman Spring</strong></td>
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<tr>
<td>ACCT 204 Financial Accounting</td>
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<tr>
<td>BUS 110 Introduction to Business Concepts*</td>
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<tr>
<td>ENGL 102 Advanced Composition &amp; Literature</td>
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<td>MATH 118 Elementary Calculus I</td>
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<td>Elective†</td>
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<tr>
<td>Physical Education Elective</td>
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<tr>
<td><strong>Freshman Summer</strong></td>
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<td>ACCT 205 Managerial Accounting</td>
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<td>MGT 210 Foundations of Management</td>
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<td>PRWR 215 Effective Communication</td>
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<td>QA 251 Elementary Statistical Analysis</td>
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<td>EC 202 Principles of Microeconomics**</td>
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<td>EC 201 Principles of Macroeconomics**</td>
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<td>QA 252 Intermediate Statistical Analysis</td>
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<td>FIN 303 Financial Management</td>
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<td>ACCT 405 Federal Income Tax</td>
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<td>EC 311 Microeconomic Theory</td>
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<td>ACCT 409 Pension &amp; Retirement Planning</td>
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<td>EC 453 Economics Seminar in Financial Services</td>
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<td>ACCT 409 Pension &amp; Retirement Planning</td>
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<td>EC 453 Economics Seminar in Financial Services</td>
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<td>Elective† or FIN 320 Risk Management &amp; Insurance</td>
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<td><strong>Total Credits</strong></td>
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</table>

*Course may be taken in the fall or spring semester.
**EC 201 or EC 202 may be offered in the summer or spring.
†Economics/financial services majors must complete two humanities electives, two social science electives (one at the 200+ level), two science/math electives, one non-SBA elective, and one free elective.
Students may choose to enroll in a finance course as a free elective (dependent upon course availability) to complete a finance minor.
### CURRICULUM—INTERNATIONAL BUSINESS: CO-OP

<table>
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<td>BLAW 150 Legal &amp; Ethical Environment of Business**</td>
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<td>MATH 117 Elementary Functions*</td>
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<td>MIS 180 Computing &amp; Spreadsheets**</td>
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<tr>
<td>Modern Language Elective</td>
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<td>BUS 110 Introduction to Business Concepts**</td>
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</tr>
<tr>
<td>ENGL 102 Advanced Composition &amp; Literature</td>
<td>3</td>
</tr>
<tr>
<td>MATH 128 Elementary Calculus I*</td>
<td>3</td>
</tr>
<tr>
<td>Modern Language Elective</td>
<td>3</td>
</tr>
<tr>
<td>Physical Education Elective</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>Freshman Summer</strong></td>
<td>15</td>
</tr>
<tr>
<td>ACCT 205 Managerial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>MGT 210 Foundations of Management</td>
<td>3</td>
</tr>
<tr>
<td>MIS 290 MGT Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>PRWR 215 Effective Communication</td>
<td>3</td>
</tr>
<tr>
<td>QA 251 Elementary Statistical Analysis</td>
<td>3</td>
</tr>
<tr>
<td>Elective†</td>
<td>3</td>
</tr>
<tr>
<td><strong>Sophomore Fall</strong></td>
<td>First work period (4 months)</td>
</tr>
<tr>
<td>Sophomore Spring</td>
<td>15</td>
</tr>
<tr>
<td>EC 202 Principles of Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>GP 102 Foreign Government &amp; Politics</td>
<td>3</td>
</tr>
<tr>
<td>GP 222 American Foreign Policy</td>
<td>3</td>
</tr>
<tr>
<td>QA 252 Intermediate Statistical Analysis</td>
<td>3</td>
</tr>
<tr>
<td>Elective†</td>
<td>3</td>
</tr>
<tr>
<td><strong>Sophomore Summer</strong></td>
<td>15</td>
</tr>
<tr>
<td>FIN 303 Financial Management</td>
<td>3</td>
</tr>
<tr>
<td>MGT 365 International Business</td>
<td>3</td>
</tr>
<tr>
<td>MKT 300 Marketing Principles**</td>
<td>3</td>
</tr>
<tr>
<td>OPM 420 Operations Management</td>
<td>3</td>
</tr>
<tr>
<td>Elective†</td>
<td>3</td>
</tr>
<tr>
<td><strong>Junior Fall</strong></td>
<td>15</td>
</tr>
<tr>
<td>EC 201 Principles of Macroeconomics</td>
<td>3</td>
</tr>
<tr>
<td>GP 221 Introduction to International Relations</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 352 Business Ethics</td>
<td>3</td>
</tr>
<tr>
<td>2 Electives†</td>
<td>6</td>
</tr>
<tr>
<td><strong>Junior Spring and Summer</strong></td>
<td>Second work period (8 months)</td>
</tr>
<tr>
<td>Senior Fall</td>
<td>15</td>
</tr>
<tr>
<td>EC 408 International Economics</td>
<td>3</td>
</tr>
<tr>
<td>FIN 423 International Finance</td>
<td>3</td>
</tr>
<tr>
<td>MGT 451 Management Seminar**</td>
<td>3</td>
</tr>
<tr>
<td>MGT Elective</td>
<td>3</td>
</tr>
<tr>
<td>MHR 465 International Human Resource Mgt</td>
<td>3</td>
</tr>
<tr>
<td><strong>Senior Spring</strong></td>
<td>15</td>
</tr>
<tr>
<td>MGT 452 Management Strategy &amp; Policy**</td>
<td>3</td>
</tr>
<tr>
<td>MKT 410 International Marketing</td>
<td>3</td>
</tr>
<tr>
<td>OPM 445 Management of Tech., Prod., &amp; Change**</td>
<td>3</td>
</tr>
<tr>
<td>2 Electives†</td>
<td>6</td>
</tr>
<tr>
<td><strong>TOTAL CREDITS</strong></td>
<td>122</td>
</tr>
</tbody>
</table>

*Qualified students are urged to substitute MATH 141, 142.
**Course may be taken in the fall or spring semester.
†International business majors must complete two science/math electives and four free electives.

### CURRICULUM—MANAGEMENT: CO-OP

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Freshman Fall</strong></td>
<td>16.5</td>
</tr>
<tr>
<td>ANTH 105 Cultural Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>BUS 110 Introduction to Business Concepts**</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 101 Composition &amp; Critical Thought</td>
<td>3</td>
</tr>
<tr>
<td>MATH 117 Elementary Functions*</td>
<td>3</td>
</tr>
<tr>
<td>MIS 180 Computing and Spreadsheets**</td>
<td>1</td>
</tr>
<tr>
<td>Elective†</td>
<td>3</td>
</tr>
<tr>
<td>Physical Education Elective</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>Freshman Spring</strong></td>
<td>15.5</td>
</tr>
<tr>
<td>ACCT 204 Financial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BLAW 150 Legal and Ethical Env. of Business</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 102 Advanced Composition &amp; Literature</td>
<td>3</td>
</tr>
<tr>
<td>MATH 128 Elementary Calculus I*</td>
<td>3</td>
</tr>
<tr>
<td>Elective†</td>
<td>3</td>
</tr>
<tr>
<td>Physical Education Elective</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>Freshman Summer</strong></td>
<td>15</td>
</tr>
<tr>
<td>ACCT 205 Managerial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>MGT 210 Foundations of Management</td>
<td>3</td>
</tr>
<tr>
<td>MIS 290 Mgt Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>QA 251 Elementary Statistical Analysis</td>
<td>3</td>
</tr>
<tr>
<td>Elective†</td>
<td>3</td>
</tr>
<tr>
<td><strong>Sophomore Fall</strong></td>
<td>First work period (4 months)</td>
</tr>
<tr>
<td>Sophomore Spring</td>
<td>15</td>
</tr>
<tr>
<td>EC 202 Principles of Microeconomics</td>
<td>3</td>
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<td>3</td>
</tr>
<tr>
<td>Electives†</td>
<td>6</td>
</tr>
<tr>
<td><strong>Sophomore Summer</strong></td>
<td>15</td>
</tr>
<tr>
<td>FIN 303 Financial Management</td>
<td>3</td>
</tr>
<tr>
<td>MGT 365 International Business</td>
<td>3</td>
</tr>
<tr>
<td>MKT 300 Marketing Principles**</td>
<td>3</td>
</tr>
<tr>
<td>OPM 352 Operations Management</td>
<td>3</td>
</tr>
<tr>
<td>Elective†</td>
<td>3</td>
</tr>
<tr>
<td><strong>Junior Fall</strong></td>
<td>15</td>
</tr>
<tr>
<td>EC 201 Principles of Macroeconomics</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 352 Business Ethics</td>
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<td>6</td>
</tr>
<tr>
<td>Elective†</td>
<td>3</td>
</tr>
<tr>
<td><strong>Junior Spring and Summer</strong></td>
<td>Second work period (8 months)</td>
</tr>
<tr>
<td>Senior Fall</td>
<td>15</td>
</tr>
<tr>
<td>MGT 451 Management Seminar**</td>
<td>3</td>
</tr>
<tr>
<td>OPM 445 Management of Tech., Prod., &amp; Change**</td>
<td>3</td>
</tr>
<tr>
<td>Elective†</td>
<td>3</td>
</tr>
<tr>
<td><strong>Senior Spring</strong></td>
<td>15</td>
</tr>
<tr>
<td>MGT 452 Management Policy &amp; Strategy</td>
<td>3</td>
</tr>
<tr>
<td>MGT Elective</td>
<td>3</td>
</tr>
<tr>
<td>International SBA Elective</td>
<td>3</td>
</tr>
<tr>
<td>2 Electives†</td>
<td>6</td>
</tr>
<tr>
<td><strong>TOTAL CREDITS</strong></td>
<td>122</td>
</tr>
</tbody>
</table>

*Qualified students are urged to substitute MATH 141, 142.
**Course may be taken in either the fall or spring semester.
†Management majors must complete two humanities electives, two social science electives (one at the 200+ level), two science/math electives, one non-SBA elective, and three free electives.
GRADUATE PROGRAMS

The School of Business Administration offers the degrees of master of business administration, master of business administration in health care management, master of science in human resource and organizational leadership, master of science in information systems, and master of science in taxation and financial planning. Admission to these programs is open to all qualified college graduates. Classes meet during the evening hours and on weekends. For more information, consult the School of Business Administration Graduate Catalog of Widener University or see us online at www.widener.edu.

BUSINESS MINORS FOR MAJORS OUTSIDE OF SBA

MINORS IN SBA CURRICULUM

Students who are majoring in College of Arts and Sciences, School of Engineering, School of Hospitality Management, and University College programs may benefit from an opportunity to take a series of courses in business to enhance their academic programs. To provide this option, the School of Business Administration (SBA) has approved a series of structured minor programs that provide a sequence of courses that will enrich other disciplines, can be monitored by the administrative staff, and meet AACSB guidelines.

The following courses will compose a business minor for all programs outside of the School of Business Administration.

MINOR IN GENERAL BUSINESS

REQUIREMENTS: BUSINESS MINOR

Prerequisites are in parentheses.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC 201/202 Principles of Micro/Macroeconomics</td>
<td>6</td>
</tr>
<tr>
<td>MATH 117 Elementary Functions, or appropriate equivalent</td>
<td>3</td>
</tr>
</tbody>
</table>

Eight Required SBA Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 204–205 Financial/Managerial Accounting</td>
<td>6</td>
</tr>
<tr>
<td>QA 251 Principles of Statistics*</td>
<td>3</td>
</tr>
<tr>
<td>FIN 301 Financial Management (ACCT 205, junior standing)</td>
<td>3</td>
</tr>
<tr>
<td>MGT 210 Management Theory</td>
<td>3</td>
</tr>
<tr>
<td>MIS 180 Computing &amp; Spreadsheets*</td>
<td>1</td>
</tr>
<tr>
<td>MKT 300 Marketing Principles (EC 202, junior standing)</td>
<td>3</td>
</tr>
</tbody>
</table>

One course offered by School of Business Administration 200-level or above with appropriate prerequisites 3

TOTAL CREDITS 31

*Completion of CSCI 102 will waive MIS 180.

**Completion of PSY 381 will waive QA 251.

NOTE: Students outside the SBA may not take more than 24 credits in business (excluding EC 201–202, which count toward the general education requirement).

Students working toward a minor in business must take at least 15 credits from the SBA (residency requirement).

Students who complete the prescribed curriculum will have “Business Minor” noted on their transcript.

MINOR IN ACCOUNTING

Accounting is an exciting and dynamic field. This minor will provide students with broad-based knowledge in the functional areas of accounting. Students will obtain a better understanding of the role that accounting plays in corporate accountability and fiscal responsibility. Students minor in accounting may also obtain the requisite background to sit for professional examinations such as the Certified Management Accountant and Certified Internal Auditor exams.

REQUIREMENTS: ACCOUNTING MINOR

Prerequisites are in parentheses.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 204 Financial Accounting (sophomore standing)</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 205 Managerial Accounting (sophomore standing)</td>
<td>3</td>
</tr>
<tr>
<td>EC 201 Macroeconomics or EC 202 Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>FIN 303 Corporate Finance (ACCT 205, junior standing)</td>
<td>3</td>
</tr>
</tbody>
</table>

Elective Courses

Three upper (300 or 400) level accounting electives (see course requirements) 9

Recommended Courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 304 Case Studies in Financial Reporting &amp; Analysis</td>
<td></td>
</tr>
<tr>
<td>ACCT 306 Taxation &amp; Accounting for Small &amp; Family Owned Businesses</td>
<td></td>
</tr>
<tr>
<td>ACCT 307 Fraud Examination</td>
<td></td>
</tr>
<tr>
<td>ACCT 314 Advanced Managerial Accounting</td>
<td></td>
</tr>
<tr>
<td>ACCT 330 Accounting Information Systems or ACCT 417 Internal Auditing</td>
<td></td>
</tr>
<tr>
<td>ACCT 400 Taxation for the Business Manager or ACCT 405 Federal Income Taxation</td>
<td></td>
</tr>
</tbody>
</table>

Other 300- or 400-level accounting courses may be selected if prerequisites are met.

TOTAL CREDITS 21

MINOR IN ECONOMICS

The economics minor is designed for those non-SBA students who have an interest in economics, including the economic aspects of public policy issues. The electives chosen to fulfill the economics minor will broaden students’ knowledge of economic matters, as well as strengthen their analytical skills and powers of reasoning. This minor will also enhance student employment opportunities and professional development, including preparation for graduate school.

REQUIREMENTS: ECONOMICS MINOR

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC 201/202 Principles of Micro/Macroeconomics</td>
<td>6</td>
</tr>
<tr>
<td>MATH 117 Elementary Functions, or appropriate equivalent</td>
<td>3</td>
</tr>
<tr>
<td>Four 300-level and above economics electives</td>
<td>12</td>
</tr>
</tbody>
</table>

TOTAL CREDITS 21

MINOR IN FINANCE

A minor in finance will give students the opportunity to understand the dynamic nature of financial management. Students will learn how a successful financial manager is involved in raising funds in the financial markets, making merger and acquisition decisions, new product introduction decisions, etc., all in an attempt to maximize shareholders’ wealth. Students will also get an overview of how finance relates to other areas of business.
**MINOR IN INTERNATIONAL BUSINESS**

A minor in international business will help students understand and appreciate global business. It will help students understand the motivations for international business, and international risks and opportunities. It will add a very competitive set of skills to students’ resumes.

**REQUIREMENTS: INTERNATIONAL BUSINESS MINOR**

<table>
<thead>
<tr>
<th>Prerequisites are in parentheses.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required SBA Courses</td>
</tr>
<tr>
<td>ACCT 204 Financial Accounting</td>
</tr>
<tr>
<td>ACCT 205 Managerial Accounting*</td>
</tr>
<tr>
<td>FIN 303 Financial Management (ACCT 205, junior standing)*</td>
</tr>
<tr>
<td>Elective Courses</td>
</tr>
<tr>
<td>Choose three courses:</td>
</tr>
<tr>
<td>EC 201 Principles of Macroeconomics**</td>
</tr>
<tr>
<td>MGT 210 Foundations of Management</td>
</tr>
<tr>
<td>FIN 305 Investments (FIN 303)</td>
</tr>
<tr>
<td>FIN 307 Capital Budgeting (FIN 303)</td>
</tr>
<tr>
<td>FIN 320 Risk Management &amp; Insurance (FIN 303)</td>
</tr>
<tr>
<td>FIN 406 Portfolio Theory &amp; Management (FIN 303)</td>
</tr>
<tr>
<td>FIN 408 Investing in Mutual Funds (FIN 303)</td>
</tr>
<tr>
<td>FIN 423 International Financial Management (FIN 303)</td>
</tr>
<tr>
<td>FIN 424 Case Studies in Finance (FIN 303)</td>
</tr>
<tr>
<td><strong>TOTAL CREDITS 21</strong></td>
</tr>
</tbody>
</table>
| *Assumes a basic knowledge of spreadsheets. Otherwise, students will be required to take MIS 180.*  
**If not taken as part of a minor, it may be taken as a social science elective.**

**MINOR IN HUMAN RESOURCE MANAGEMENT (MHR)**

The MHR program focuses on creating and expanding the student’s ability to examine the contemporary challenges presented in human resources. This is accomplished by providing a comprehensive exposure to the areas and knowledge essential to the practice of sound human resource management. The MHR program also emphasizes the importance of professional networking and the building of professional relationships to further both the enhancement of one’s professional career and increasing the base of one’s knowledge and skills.

The creation of the minor in MHR is a recognition that often the combination of a major from one field and a minor in MHR can be an excellent marriage between the skills and abilities developed in both programs. The minor in MHR can often assist the student in applying his or her degree in a variety of areas in business and industry.

**REQUIREMENTS: HUMAN RESOURCE MANAGEMENT MINOR**

<table>
<thead>
<tr>
<th>Prerequisites are in parentheses.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required SBA Courses</td>
</tr>
<tr>
<td>MGT 210 Foundations of Management</td>
</tr>
<tr>
<td>MHR 316 Intro. to Human Resource Mgt. (MGT 210)</td>
</tr>
<tr>
<td>MIS 290 Management Information Systems (MIS 180)</td>
</tr>
<tr>
<td>Elective Courses</td>
</tr>
<tr>
<td>Choose one course:</td>
</tr>
<tr>
<td>BLAW 150 Legal &amp; Ethical Environment of Business</td>
</tr>
<tr>
<td>EC 202 Principles of Microeconomics*</td>
</tr>
<tr>
<td>Choose three courses:</td>
</tr>
<tr>
<td>EC 315 Women, Men, &amp; Work (EC 202)</td>
</tr>
<tr>
<td>MHR 325 Diversity in the Workplace (MGT 210)</td>
</tr>
<tr>
<td>MHR 420 Organizational Behavior (MGT 210)</td>
</tr>
<tr>
<td>MHR 465 International Hum. Res. Mgt. (MGT 210)</td>
</tr>
<tr>
<td><strong>TOTAL CREDITS 21</strong></td>
</tr>
</tbody>
</table>
| *If not taken as part of a minor, it may be taken as a social science elective.**

**MINOR IN MANAGEMENT**

A minor in management will give students a broad-based knowledge in the functional areas of business. Students may select their elective choices so as to attain an adequate level of exposure in the areas of finance, human resource management, management, management information systems, marketing, and sport management.

**REQUIREMENTS: MANAGEMENT MINOR**

<table>
<thead>
<tr>
<th>Prerequisites are in parentheses.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required SBA Courses</td>
</tr>
<tr>
<td>MGT 210 Foundations of Management</td>
</tr>
<tr>
<td>Elective Courses</td>
</tr>
<tr>
<td>Choose four courses:</td>
</tr>
<tr>
<td>ACCT 204 Financial Accounting</td>
</tr>
<tr>
<td>ACCT 205 Managerial Accounting*</td>
</tr>
<tr>
<td>EC 201 Principles of Macroeconomics**</td>
</tr>
<tr>
<td>or</td>
</tr>
<tr>
<td>EC 202 Principles of Microeconomics**</td>
</tr>
<tr>
<td>FIN 303 Financial Management (ACCT 205, junior standing)</td>
</tr>
<tr>
<td>OPM 352 Operations Management (QA 252, junior standing)</td>
</tr>
<tr>
<td>MHR 316 Intro. to Human Resource Mgt. (MGT 210)</td>
</tr>
<tr>
<td>MIS 290 Mgt. Information Systems (MIS 180)</td>
</tr>
<tr>
<td>MKT 300 Marketing Principles (EC 202, junior standing)</td>
</tr>
<tr>
<td>Choose two courses (300 level or higher) from:</td>
</tr>
<tr>
<td>Finance, human resource management, management, management information systems, marketing, and sport management areas.</td>
</tr>
<tr>
<td><strong>TOTAL CREDITS 21</strong></td>
</tr>
</tbody>
</table>
| *Assumes a basic knowledge of spreadsheets. Otherwise, students will be required to take MIS 180.*  
**If not taken as part of a minor, it may be taken as a social science elective.**
MINOR IN MANAGEMENT INFORMATION SYSTEMS
Management Information Systems (MIS) is a dynamic and challenging field. Its interdisciplinary nature provides opportunity for students to explore the roles of technology in various industries. A minor in MIS will give the student the basics of business computing and the ability to learn how to plan for, analyze, design, and implement information technology in a business environment.

REQUIREMENTS: MANAGEMENT INFORMATION SYSTEMS MINOR* Credits
Prerequisites are in parentheses.

Required SBA Courses
ACCT 204 Financial Accounting .......................... 3
ACCT 205 Managerial Accounting* ....... 3
MIS 290 Management Information Systems (MIS 180) ....... 3

Elective Courses
Choose one course: ........................................ 3
FIN 303 Financial Management (ACCT 205, junior standing)
MGT 210 Foundations of Management

Choose three courses: ............................... 9
MIS 329 Systems Analysis & Design (MIS 290)
MIS 358 Database Management Systems (MIS 290) or
CSCI 434 Database Systems (CSCS 248)
MIS 363 Object-Oriented Design & Develop. (MIS 290)
MIS 421 Information Tech. Solutions (MIS 290)
MIS 425 Special Topics in Information Tech. (MIS 290)
MIS 430 ERP Systems & Workflow Management (MIS 290)
MIS 441 Business Expert Systems (MIS 290)
MIS 461 Data Communications (MIS 290)

TOTAL CREDITS 21
*Assumes a basic knowledge of spreadsheets. Otherwise, students will be required to take MIS 180.
**Students must take MIS 329, MIS 358 or CSCI 434, and one 300-level or above MIS course.

MINOR IN OPERATIONS MANAGEMENT
A minor in operations management is designed to advance students’ understanding of the challenges of value creation, and how to gain competitive advantages by transforming available resources into needed goods and services. This minor enhances students’ competencies and career opportunities in both manufacturing and the services sectors.

REQUIREMENTS: OPERATIONS MANAGEMENT MINOR* Credits
Prerequisites are in parentheses.

Required SBA Courses
MGT 210 Foundations of Management .......................... 3
OPM 352 Operations Management (Q A 252, junior standing) .... 3
QA 251 Elementary Statistical Analysis (MATH 117) ......... 3
QA 252 Intermediate Statistical Analysis (QA 251) .......... 3

Elective Courses
Choose three courses: ........................................ 9
MGT 365 International Business (ANTH 105, MGT 210, junior standing)
OPM 375 Global Operations Management (OPM 352, 365)
OPM 380 Intro. to Management Science (OPM 352)
OPM 445 Mgmt. of Tech., Prod., & Change (OPM 352)
OPM 460 Supply Chain Mgmt. (OPM 352)

TOTAL CREDITS 21
*Assumes a basic knowledge of spreadsheets. Otherwise, students will be required to take MIS 180.

MINOR IN MARKETING
Marketing impacts our daily lives. A minor in marketing will expose students to the dynamic and diverse nature of the field of marketing. It will also give students the opportunity to acquire necessary skills and knowledge to pursue professional career opportunities in this field.

REQUIREMENTS: MARKETING MINOR* Credits
Prerequisites are in parentheses.

Required SBA Courses
EC 202 Principles of Microeconomics** .......................... 3
QA 251 Elementary Statistical Analysis (MATH 117) ......... 3
MKT 300 Marketing Principles (EC 202, junior standing) .... 3

E elective Courses
Choose three courses: ........................................ 9
MKT 320 Event Planning & Sport Marketing (MKT 300)
MKT 402 Marketing Management (EC 201, 202; MATH 117, MKT 300)
MKT 403 Professional Personal Selling (MKT 300)
MKT 405 Sales Management (QA 252, MKT 300)
MKT 406 Marketing Research (QA 252, MKT 300)
MKT 409 Customer Relationship Management (MKT 300)
MKT 410 International Marketing (MKT 300)
MKT 412 Advertising (MKT 300)

TOTAL CREDITS 21
*Assumes a basic knowledge of spreadsheets. Otherwise, students will be required to take MIS 180.
**If not taken as part of a minor, it may be taken as a social science elective.

MINOR IN SPORT MANAGEMENT
The purpose of this minor is to provide students with sufficient academic and practical preparation for them to be considered for a career position in the sport industry.

REQUIREMENTS: SPORT MANAGEMENT MINOR* Credits
Prerequisites are in parentheses.

Required SBA Courses
BLAW 280 Sports & the Law .......................... 3
EC 201 Principles of Macroeconomics** .......................... 3
EC 202 Principles of Microeconomics** .......................... 3
MKT 210 Foundations of Management .......................... 3
MKT 300 Marketing Principles (EC 202, junior standing) .... 3

E elective Courses
Choose three courses: ........................................ 9
SMGT 300 Sport Mgmt. & Admin. (MKT 210)
SMGT 340 Sport Sales and Marketing (MKT 300)
SMGT 410 Economics of Sports (EC 202)
SMGT 415 The Athlete & the Fan (MKT 210)

TOTAL CREDITS 24
*Assumes a basic knowledge of spreadsheets. Otherwise, students will be required to take MIS 180.
**If not taken as part of a minor, it may be taken as a social science elective.
School of Engineering

The School of Engineering provides programs that combine theory and practice to educate men and women who will contribute to the solution of today’s problems and continue learning to enhance their professional careers. The curricula include a carefully chosen mix of basic science, engineering science, engineering design, practical engineering applications, and the humanities and social sciences.

 Majors in chemical, civil, electrical, and mechanical engineering are offered. Students, except for chemical engineering majors, may generally defer their decisions on a major until the sophomore year. All majors offered by the School of Engineering are accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (EAC/ABET), 111 Market Place, Suite 1050, Baltimore, MD 21202-4012; telephone: 410-347-7700.

 Engineering internship experience is available through the optional four-year co-op program, which requires that students attend classes during two summers and spend one four-month period and one eight-month period in a suitable industrial position selected in conjunction with the Office of Cooperative Education. The academic curricula are identical to those of the regular programs and are designed to be completed in four years.

 Students who cannot participate in the co-op program are advised to contact their department and Career Advising and Planning Services for summer internship opportunities.

MISSION

Widener University’s School of Engineering is dedicated to providing quality undergraduate and graduate education and to advancing the state of knowledge in engineering, with the aim of preparing graduates for successful professional careers.

ADMISSION WITH ADVANCED STANDING

Students who have initiated their engineering programs at other four-year or two-year institutions are encouraged to apply for admission to the School of Engineering with advanced standing in order to complete their educational plans. Refer to “Advanced Placement Credit” for details on credit granted through the College Entrance Examination Board’s (CEEB) Advanced Placement Program. Early application is suggested to assure compatibility between programs. Further information can be obtained from the dean’s office in the School of Engineering.

DIRECT TRANSFER PROGRAM

The School of Engineering has direct transfer agreements with selected two-year community colleges. This program assures admission into the School of Engineering with junior standing for students who have satisfactorily completed the first two years of an approved course sequence. Further information can be obtained from the dean’s office in the School of Engineering.

THE ENGINEERING CURRICULA

The requirements for the degree of bachelor of science in chemical engineering, civil engineering, electrical engineering, and mechanical engineering are shown in the various curricula on subsequent pages. All students are required to take the Senior Project sequence. Minors can be arranged in many areas, including bioengineering, biology, business, chemistry, computer science, electrical engineering, management, marketing, mathematics, or physics. Double majors are available in chemical engineering/chemistry, electrical engineering/physics, and mechanical engineering/physics. Program details are available from the dean’s office and each of the departments in the School of Engineering.

 Engineering students must complete the undergraduate writing program as described under “Academic Policies and Procedures.” Students should work with their academic advisor to ensure that this requirement is met. In addition, the writing exhibited by each student during his or her senior year must meet or exceed the NTE (National Teacher’s Examination) Level 5 standard for graduation.

ACADEMIC REQUIREMENTS

Consistent with the university-wide distribution requirements, all engineering students must take 12 hours of humanities and 12 hours of social sciences. Engineering students must demonstrate their academic proficiency in the first two years of their particular curriculum by having no more than two grades of D+ or less in math, science, and engineering courses, excluding laboratories. Additionally, academic progress for an upper-class engineering student must reflect no more than two outstanding grades of D+ or less in the junior technical courses, including laboratories, and no more than two outstanding grades of D+ or less in the senior technical courses, including laboratories. Approval for graduation is contingent upon satisfaction of this requirement.

SENIOR PROJECT

This project is undertaken during both semesters of the senior year and is structured to allow students, working in teams, to pursue realistic problems. The projects are generally selected from current technology and include creative conception, design, development, construction, and evaluation. Projects involve both analytical and laboratory experience under the supervision of a faculty advisor and, often, an industrial advisor. A written report and oral presentation of the project are required.

PROGRAM OPTIONS

There are several program options available for the student to complete the requirements for the undergraduate engineering degree or a combined program for the undergraduate and graduate degrees. These options include the regular engineering program, the cooperative education program, minors, and double degree programs.

REGULAR ENGINEERING PROGRAM

This program follows one of the engineering curricula described on the following pages. School attendance during summers is not required. New freshman students normally enter the program in the fall; however, students with advanced standing may enter in fall or spring depending on the requirements of their remaining program.

COOPERATIVE EDUCATION PROGRAM

In addition to its regular engineering program, the School of Engineering offers a cooperative education program that augments the engineering curriculum with two work experiences, totaling 12 months of industrial and/or government employment. The bachelor’s degree can still be completed within the normal four-year period. It is open to all interested freshmen as well as students with advanced standing.

 The Widener Cooperative Engineering Education Program has several important features:

• It is a four-year, year-round program. This means a degree may be obtained in less time than in the usual collegiate engineering program that offers co-op experience.

• The co-op experience has been integrated with the academic work, not simply added on to an existing curriculum.
There is one short and one long work period in industry rather than several short periods. This permits students to be exposed to engineering in a “real-world” environment; that is, to get to know and work with people and apply their education to practical engineering problems.

Co-op courses taken in the summer are semester-long courses.

The program is optional.

A student in the cooperative engineering option spends the first year in full-time study on campus. During the second year, four months are spent in industry and the remaining eight months on campus. The third year contains an eight-month industrial assignment, and during the final nine months, the senior year is completed back on campus. The student’s industrial experience will be related as closely as possible to his/her course of study and personal interests.

Students seeking a degree in engineering follow the same selected academic program whether or not they participate in the cooperative program. However, those choosing this program should apply as early as possible with the director of cooperative education. A higher level of academic performance is required for both acceptance and retention in this program.

COOPERATIVE ENGINEERING PROGRAM

G R A D U A T E  S T U D I E S

The School of Engineering offers the master of engineering degree. In addition, the master of engineering/master of business administration, a dual degree, is offered by both the School of Engineering and the School of Business Administration. Certificate programs are also available. For more information, contact the graduate and special programs office or see the Graduate Engineering Catalog.

ACCELERATED BACHELOR’S/MASTER’S PROGRAM

The BS/MEng (Bachelor of Science/Master of Engineering) is an accelerated program that makes it possible for engineering students to complete their bachelor of science and master of engineering degrees in just four to five years. To be accepted in the program, students must hold junior-level status, possess a minimum cumulative grade point average of 3.0 and be recommended by faculty. The program allows for two graduate engineering courses taken at Widener to replace two undergraduate technical electives and have the six credits apply to both the undergraduate and graduate degree requirements. For more information, contact the department chairman or the director of graduate and special programs.

<table>
<thead>
<tr>
<th>CORE CURRICULUM FOR ALL PROGRAMS</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman Fall</td>
<td>16.5</td>
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<tr>
<td>ENGR 111 Engineering Techniques</td>
<td></td>
</tr>
<tr>
<td>(WE)</td>
<td></td>
</tr>
<tr>
<td>MATH 141 Calculus I</td>
<td>2</td>
</tr>
<tr>
<td>CHEM 145 General Chemistry I</td>
<td>3</td>
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<tr>
<td>CHEM 147 General Chemistry Lab I</td>
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<tr>
<td>ENGL 101 Composition &amp; Critical</td>
<td>3</td>
</tr>
<tr>
<td>Thought</td>
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<td>Physical Education Elective</td>
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<tr>
<td>Freshman Spring</td>
<td>17.5</td>
</tr>
<tr>
<td>ENGR 112 or ENGR 113 or ENGR 114</td>
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<tr>
<td>MATH 142 Calculus II</td>
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<td>CHEM 146 General Chemistry II</td>
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<td>PHYS 163 Physics Lab I</td>
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<td>Social Science Elective</td>
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<tr>
<td>Physical Education Elective</td>
<td>0.5</td>
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<tr>
<td>Sophomore Fall</td>
<td>18</td>
</tr>
<tr>
<td>MATH 241 Multivariable Calculus**</td>
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<tr>
<td>PHYS 162 Physics II</td>
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</tr>
<tr>
<td>PHYS 164 Physics Lab II†</td>
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</tr>
<tr>
<td>ENGR 213 Statics</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 219 Electric Circuits</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 223 Electric Circuits Lab***</td>
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<tr>
<td>Humanities Elective</td>
<td>3</td>
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<tr>
<td>Sophomore Spring</td>
<td>10</td>
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<tr>
<td>MATH 242 Elementary Differential</td>
<td></td>
</tr>
<tr>
<td>Equations</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 220 Analysis of Linear</td>
<td>3</td>
</tr>
<tr>
<td>Electrical Systems†</td>
<td></td>
</tr>
<tr>
<td>ENGR 224 Analysis of Linear</td>
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<tr>
<td>Electrical Systems Lab††</td>
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<td>Social Science Elective</td>
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<tr>
<td>Junior Fall</td>
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<tr>
<td>ENGR 325 Thermodynamics††</td>
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<td>Humanities Elective</td>
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<td>Junior Spring</td>
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<tr>
<td>Social Science Elective</td>
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<td>Senior Fall</td>
<td>8</td>
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<tr>
<td>ENGR 401 Senior Project I</td>
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<tr>
<td>ENGR 412 Engineering Economics</td>
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<td>ASC 400 Values Seminar (WE)</td>
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<tr>
<td>Senior Spring</td>
<td>5</td>
</tr>
<tr>
<td>ENGR 402 Senior Project II</td>
<td>2</td>
</tr>
<tr>
<td>Humanities/Social Science Elective</td>
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<tr>
<td>TOTAL CREDITS</td>
<td>84</td>
</tr>
</tbody>
</table>

*Depending on the major; students should check with their advisor.

**Students in the computer track in electrical engineering take MATH 322 instead of MATH 241.

***Except civil engineering students who may elect to take ENGR 219 in junior fall, and chemical engineering students who take ENGR 219 and ENGR 223 in junior spring.

†Taken by chemical engineering students in the junior year. Civil engineering students do not take CHEM 148, PHYS 164, ENGR 219, ENGR 220, ENGR 223, or ENGR 224.

††Taken by chemical engineering students in the sophomore year. Not taken by electrical engineering students enrolled in the computer track. Junior technical elective for civil engineering students.
MINORS IN ENGINEERING

**BIOENGINEERING MINOR**

Bioengineering is a broad, interdisciplinary field in which engineering principles are integrated with the study of biology. At Widener, faculty members are pursuing research in a wide range of topics within bioengineering, including cardiovascular mechanics, kidney dialysis, tissue engineering, and environmental microbiology. To expose undergraduate students to exciting advances in the field, Widener’s School of Engineering offers a minor in bioengineering.

To earn the bioengineering minor, engineering students must complete two technical electives related to bioengineering, a senior project with a bioengineering focus, and a biology course (BIOL 231) specifically designed for the minor. For students outside the School of Engineering who wish to pursue the minor, additional courses in core engineering topics are required. Students enrolling in the bioengineering minor can expect to gain:

- An understanding of basic physiology and the application of engineering principles to biomedical problems.
- Practical application of their engineering skills to a bioengineering problem through the senior project.
- An appropriate background to enter the workforce as a traditional engineer (e.g., mechanical or electrical engineer) in a bioengineering setting or to excel in a bioengineering or biomedical engineering graduate program.

Interested students should contact their academic advisor by the start of their junior year.

**ELECTRICAL ENGINEERING MINOR**

A minor in electrical engineering may be obtained by completing the following requirements, assuming that all the prerequisites and corequisites have been met for each course. Other restrictions apply. Interested students should consult with the electrical engineering department chair for details.

**Required courses:**

ENGR 219 Electric Circuits  
ENGR 223 Electric Circuit Lab  
ENGR 220 Analysis of Linear Electric Circuits  
ENGR 224 Analysis of Linear Electric Circuit Lab

**Choose two from the following six options:**

EE 230 Logic Design & EE 232 Logic Design Lab  
EE 335 Power Engineering & EE 334 Power Engineering Lab  
EE 335 Power Engineering & EE 333 Sensors Lab  
EE 336 Signal Analysis  
EE 337 Electronics I  
EE 471 Controls I & EE 333 Sensors Lab

**CHEMICAL ENGINEERING**

Chemical engineers use chemistry, engineering, and mathematics to solve societal problems by inventing and producing materials and by finding more efficient processing methods. They are the key professionals involved in the production of fuels, food, pharmaceuticals, clean water, and the modern materials used in electronics, apparel, and construction. Chemical engineers are responsible for the recovery and management of raw materials found on land, in the oceans, and in space. They design processes, equipment, plant-testing procedures, evaluation techniques, and standards in all areas of chemical production, as well as with pharmaceuticals and biotechnology.

Graduates from the chemical engineering program at Widener work for chemical, food, biochemical, pharmaceutical, semiconductor, pulp and paper, polymer, contracting and consulting firms, and the government. Many graduates continue their careers by earning advanced degrees or professional licenses.

**PROGRAM OPTIONS**

The following options are available:

- Double major with chemistry.
- Minors in chemistry, mathematics, or biology.
- Advanced learning via independent study.
- Interaction with industry, government, and other institutions via cooperative education, internships, and undergraduate research.

**PROGRAM OBJECTIVES**

Consistent with Widener University’s mission to be a leading metropolitan university, the chemical engineering program’s graduates will:

- Engage in successful careers in a branch of chemical engineering or other professional areas using their knowledge and experience of science and engineering.
- Exhibit personal and interpersonal abilities such as communication, ethical behavior, and teamwork that contribute to the development of the organizations of which they are a part and their own development as professionals and as members of their community.
- Pursue professional development opportunities including advanced degrees, technical certifications, and/or professional registration.
- Continue their professional and personal growth, assuming technical, business, and administrative leadership positions within their chosen fields.

**PROGRAM OUTCOMES**

Over the course of their studies, graduates from the chemical engineering program will have demonstrated:

- An ability to apply the knowledge of mathematics and science, especially chemistry, and engineering.
- An ability to design and conduct experiments as well as to analyze and interpret data, and to incorporate the knowledge gained from experimentation and the literature into steady-state and dynamic computer models.
- An ability to develop and design a system, unit operation, or process to meet desired or anticipated needs, including the ability to compose a process flow diagram and to understand a piping and instrumentation diagram.
- An ability to function effectively in team settings, including program-related teams for projects and multidisciplinary teams.
- An ability to identify, formulate, and solve chemical engineering problems in a wide range of areas, including:
  - Environmental, health, and safety.
  - Biochemical/biomedical.
  - Refining/chemical processing.
  - Pollution prevention and remediation.
- An understanding of professional and ethical responsibility.
- An ability to communicate effectively and use current computer tools to present complicated concepts in a lucid manner.
- A knowledge of contemporary and societal issues and an appreciation of the impact of engineering solutions in a global context.
- A recognition of the need for continual self-renewal and the ability to engage in lifelong learning.
CURRICULUM—CHEMICAL ENGINEERING  

Freshman Fall  ........................................ 16.5
ENGR 111 Engineering Techniques (WE) .................................. 2
MATH 141 Calculus I ........................................ 4
CHEM 145 General Chemistry I ........................................ 3
CHEM 147 General Chemistry Lab I .................................... 1
ENGL 101 Composition & Critical Thought ................................ 3
Humanities Elective ........................................ 3
Physical Education Elective ........................................ 0.5

Freshman Spring ........................................ 17.5
ENGR 112 Computer Program. & Engr. Problem Solving* ............ 2
MATH 142 Calculus II ........................................ 4
CHEM 146 General Chemistry II ...................................... 3
CHEM 148 General Chemistry Lab II ................................... 1
PHYS 161 Physics I ........................................ 3
PHYS 163 Physics Lab I ........................................ 1
Social Science Elective ........................................ 3
Physical Education Elective ........................................ 0.5

Sophomore Fall ........................................ 18
MATH 241 Multivariable Calculus .......................................... 4
CHEM 255 Organic Chemistry I ....................................... 4
CHEM 257 Organic Chemistry Lab I ................................... 1
ENGR 213 Statics ........................................ 3
PHYS 162 Physics II ........................................ 3
Humanities Elective ........................................ 3

Sophomore Spring ........................................ 18
MATH 242 Elementary Differential Equations .......................... 3
CHEM 256 Organic Chemistry II .................................... 4
CHEM 258 Organic Chemistry Lab II .................................. 1
ENGR 325 Thermodynamics ........................................ 3
CHE 222 Chemical Engineering Principles (WE) ..................... 3
PHYS 164 Physics Lab II ........................................ 1
Social Science Elective ........................................ 3

Junior Fall ........................................ 18
ENGR 219 Electric Circuits ........................................ 3
ENGR 223 Electric Circuits Lab ...................................... 1
CHE 329 Transport Phenomena ....................................... 4
CHEM 330 Chemical Engineering Thermodynamics .................. 3
CHEM 385 Physical Chemistry I .................................... 4
Humanities Elective ........................................ 3

Junior Spring ........................................ 16
ENGR 220 Analysis of Linear Electrical Systems .................... 3
ENGR 224 Analysis of Linear Electrical Systems Lab ............... 1
CHE 327 Chemical Engineering Lab I (WE) .......................... 1
CHE 332 Mass-Transfer Operations .................................. 4
CHEM 386 Physical Chemistry II ................................... 4
Social Science Elective ........................................ 3

Senior Fall ........................................ 16
ENGR 401 Senior Project I ........................................ 2
ENGR 314 Introduction to Control Systems ........................... 3
ENGR 412 Engineering Economics .................................... 3
CHE 425 Process Design Methods (WE) ................................ 3
CHE 427 Chemical Engineering Lab II (WE) .......................... 1
CHEM 389 Physical Chemistry Lab .................................. 1
ASC 400 Values Seminar (WE) ..................................... 3

Senior Spring ........................................ 17
ENGR 402 Senior Project II .......................................... 2
CHE 428 Process Design ........................................ 3
CHE 429 Chemical Reaction Engineering ............................ 3
Technical Electives** ........................................ 6
Humanities/Social Science Elective ................................... 3

TOTAL CREDITS ........................................ 137

*Students may take ENGR 113 Computer-Aided Engineering Designs in lieu of ENGR 112.

**Chemical engineering students are required to take two technical elective courses in the senior year. The following have been approved: BIOL 231 Biology for Engineers

CURRICULUM—CHEMICAL ENGINEERING/ CHEMISTRY DOUBLE MAJOR*  

Freshman Fall ........................................ 19.5
ENGR 111 Engineering Techniques (WE) ............................ 2
MATH 141 Calculus I ........................................ 4
CHEM 145 General Chemistry I .................................... 3
CHEM 147 General Chemistry Lab I ................................. 1
ENGL 101 Composition & Critical Thought .......................... 3
Humanities Elective** ........................................ 3
Social Science Elective** ........................................ 3
Physical Education Elective ........................................ 0.5

Freshman Spring ........................................ 17.5
ENGR 112 Computer Program. & Engr. Problem Solving*** .......... 2
MATH 142 Calculus II ........................................ 4
CHEM 146 General Chemistry II .................................... 3
CHEM 148 General Chemistry Lab II ................................ 1
PHYS 161 Physics I ........................................ 3
PHYS 163 Physics Lab I ........................................ 1
Social Science Elective** ........................................ 3
Physical Education Elective ........................................ 0.5

Sophomore Fall ........................................ 18
MATH 241 Multivariable Calculus ...................................... 4
CHEM 255 Organic Chemistry I .................................... 4
CHEM 257 Organic Chemistry Lab I ................................ 1
ENGR 213 Statics ........................................ 3
PHYS 162 Physics II ........................................ 3
Humanities Elective** ........................................ 3

Sophomore Spring ........................................ 18
MATH 242 Elementary Differential Equations ......................... 3
CHEM 256 Organic Chemistry II ................................... 4
CHEM 258 Organic Chemistry Lab II ................................ 1
CHEM 375 Inorganic Chemistry .................................... 3
ENGR 325 Thermodynamics ........................................ 3
CHE 222 Chemical Engineering Principles (WE) .................... 3
PHYS 164 Physics Lab II ........................................ 1

Junior Fall ........................................ 19
ENGR 219 Electric Circuits ........................................ 3
ENGR 223 Electric Circuits Lab .................................... 1
CHE 329 Transport Phenomena ..................................... 4
CHEM 330 Chemical Engineering Thermodynamics .................. 3
CHEM 365 Analytical Chemistry .................................... 3
CHEM 367 Analytical Chemistry Lab ................................ 1
CHEM 385 Physical Chemistry I ................................... 4

Junior Spring ........................................ 17
ENGR 220 Analysis of Linear Electrical Systems ................... 3
ENGR 224 Analysis of Linear Electrical Systems Lab ............... 1
CHE 327 Chemical Engineering Lab I (WE) .......................... 1
CHE 332 Mass-Transfer Operations .................................. 4
CHEM 366 Instrumental Methods of Analysis ......................... 3
CHEM 368 Instrumental Methods of Analysis Lab ........................ 1
CHEM 386 Physical Chemistry II ................................... 4

Continued on next page.
CIVIL ENGINEERING

Civil engineers use imagination, creativity, and technical knowledge to design, construct, and maintain the physical and operational systems that keep our society functioning. Buildings and bridges, railroads and airports, highways, mass transit systems, dams, waste disposal and environmental protection systems, water supplies, and harbors and beaches are examples of the types of structures and systems with which civil engineers work. Because of the wide range of projects in which civil engineers are involved, job prospects look good with opportunities in all aspects of the civil engineering profession.

Widener’s civil engineering program provides a broad-based education in a supportive environment that encourages inquisitive, analytical, and creative thinking, and also exposes students to real-world practical aspects of the civil engineering profession. Faculty members have either an earned doctorate or a professional engineering license. Most have both, and all advise and mentor students and actively encourage questions in and out of class. Students enjoy easy access to modern, well-equipped laboratories and computer facilities; there are plenty of hands-on learning experiences throughout the curriculum.

PROGRAM OBJECTIVES
Graduates of Widener’s civil engineering program are expected to:

- Perform successfully in civil engineering practice as demonstrated by progression from task-specific assignments to more comprehensive responsibilities.
- Demonstrate commitment to professionalism in engineering practice by pursuing professional licensure.
- Communicate effectively with co-workers, other professionals, and the public.
- Engage in continuous learning through graduate studies or continuing professional development.
- Contribute to the advancement of the profession and the community through involvement with appropriate organizations and activities.

PROGRAM OUTCOMES
Over the course of their studies, graduates of the program shall have demonstrated:

- An understanding of the impact of civil engineering solutions in a global and societal context.
- An ability to apply the fundamental knowledge of mathematics, science, and engineering, as well as the ability to use the techniques, skills, and modern engineering tools to solve civil engineering problems in practice.
- An ability to identify, formulate, and solve civil engineering problems in various civil engineering disciplines.
- An ability to design a civil engineering system, component, or process to meet the requirements of safety, cost, quality, and performance.
- An ability to conduct laboratory experiments, and to analyze and interpret data in various civil engineering disciplines.
- An ability to communicate effectively and function well on multidisciplinary teams.
- An understanding of professional and ethical responsibility, and recognition of the need for and ability to engage in lifelong learning.
- An understanding of professional practice issues and knowledge of contemporary issues that relate to civil engineering practice.

CURRICULUM—CIVIL ENGINEERING

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>ENGR 111 Engineering Techniques (WE)</td>
<td>16.5</td>
</tr>
<tr>
<td>MATH 141 Calculus I</td>
<td>2</td>
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<tr>
<td>CHEM 145 General Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 147 General Chemistry Lab I</td>
<td>1</td>
</tr>
<tr>
<td>ENGL 101 Composition &amp; Critical Thought</td>
<td>3</td>
</tr>
<tr>
<td>Humanities Elective</td>
<td>3</td>
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<tr>
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<tr>
<td>ENGR 213 Statics</td>
<td>3</td>
</tr>
<tr>
<td>CE 205 Surveying</td>
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<td>Humanities Elective</td>
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<tr>
<td>Physical Education Elective</td>
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<tr>
<td>MATH 241 Multivariable Calculus</td>
<td>4</td>
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<tr>
<td>PHYS 162 Physics II</td>
<td>3</td>
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<tr>
<td>ENGR 323 Mechanics of Deformable Bodies</td>
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<tr>
<td>Social Science Elective</td>
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<tr>
<td>CE 347 Environmental Engineering</td>
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<td>ENGR 326 Materials Engineering</td>
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<td>Engineering Science Elective</td>
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<tr>
<td>CE 342 Structural Analysis I</td>
<td>3</td>
</tr>
<tr>
<td>CE 347 Environmental Engineering</td>
<td>3</td>
</tr>
<tr>
<td>ENVR 300 Geology for Engineers**</td>
<td>3</td>
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<tr>
<td>ENGR 326 Materials Engineering</td>
<td>3</td>
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<td>Engineering Science Elective**</td>
<td>3</td>
</tr>
<tr>
<td>Humanities Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

*Students must maintain a cumulative GPA of 3.0 or above.
**Details on the choices of electives in the double major program are available from the faculty advisor. The single advanced chemistry elective may be selected from: BCH 451/453 (3+1); CHEM 461/463 (1+2) or CHEM 475 (3); CHEM 488 (3) or CHEM 425/427 (3+1).
***Students may take ENGR 113 Computer-Aided Engineering Designs in lieu of ENGR 112.
Three to five years after having received their baccalaureate degree, graduates from the electrical engineering program are expected to have the following abilities:

- Graduates are expected to exhibit professional development in their chosen careers, as indicated by some combination of continuing education, professional registration, professional society activity, and a degree of responsibility and advancement.
- Graduates are expected, when a need is identified to seek out subject matter resources beyond their own individual or their team’s area of expertise and apply this new knowledge to the identified need in solving problems, designing systems, components or processes, or in applying the principles of mathematics, science, or engineering.
- Graduates are expected to communicate effectively through continual use of oral and written expression as indicated by some combination of professional talks, oral presentations, written reports, or technical publications.
- Graduates are expected to understand the business model that applies to their career field and have assembled and used the appropriate tools to enhance their productivity in this environment.

### PROGRAM OUTCOMES

Students are expected to have attained the following outcomes upon graduation from the electrical engineering program:

- An ability to apply knowledge of mathematics, science, and engineering.
- An ability to design and conduct experiments, as well as to analyze and interpret data.
- An ability to design a system, component, or process to meet desired needs with realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
- An ability to function on multidisciplinary teams.
- An ability to identify, formulate, and solve engineering problems.
- An understanding of professional and ethical responsibility.
- An ability to communicate effectively.
- The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.
- A recognition of the need for, and ability to engage in life-long learning.
- A knowledge of contemporary issues.
- An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

### SENIOR YEAR TECHNICAL ELECTIVES

Students majoring in electrical engineering may select senior year technical electives from the following list, assuming that they meet the specific prerequisites for each course.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE 465</td>
<td>Transmission of Electromagnetic Energy</td>
</tr>
<tr>
<td>EE 472</td>
<td>Controls II</td>
</tr>
<tr>
<td>EE 474</td>
<td>Computers II*</td>
</tr>
<tr>
<td>EE 475</td>
<td>Digital Filter Design</td>
</tr>
<tr>
<td>EE 476</td>
<td>Intro. to Image Processing</td>
</tr>
<tr>
<td>EE 479</td>
<td>Optical Fiber Communication</td>
</tr>
<tr>
<td>EE 488</td>
<td>Special Topics in Electrical Engineering such as:</td>
</tr>
<tr>
<td></td>
<td>Computer Networking &amp; Data Communications</td>
</tr>
<tr>
<td></td>
<td>Power System Analysis</td>
</tr>
<tr>
<td></td>
<td>Distribution System Engineering</td>
</tr>
</tbody>
</table>

*This is a required course for computer track students.*

Seniors may take one graduate course that is offered by the electrical engineering department as a senior technical elective for which they are qualified. A senior who wishes to take a graduate course for undergraduate credit must have a cumulative GPA of 3.0 or above and must get the approval of the course instructor, his or her academic advisor, and the department chairman. Students may also apply this course, when enrolled in the master of engineering degree program, toward their graduate studies in electrical engineering.

### ELECTRICAL ENGINEERING

The electrical engineering profession makes possible a wide variety of products, systems, and services that support and enhance our modern world. Areas of growth include telecommunications, computers and computer networks, avionics, robotics, automatic control, microelectronics, power generation and distribution, medical imaging, virtual reality, sensors, and photonics. Upon graduation, students find employment in areas such as design, testing, development, research, and sales. Students are also prepared for graduate study.

The electrical engineering program provides a solid foundation in physics, chemistry, mathematics, and engineering fundamentals. Advanced courses include electronics, signal analysis, logic design, power engineering, computers, automatic control, and communications, as well as senior technical electives. Students may enroll in either the traditional or computer track. A dual major in physics is available. Additional minors are also available in liberal arts subjects.

### PROGRAM OBJECTIVES

Three to five years after having received their baccalaureate degree, graduates from the electrical engineering program are expected to have the following abilities:
### CURRICULUM—ELECTRICAL ENGINEERING: TRADITIONAL TRACK

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tr>
<td>Freshman Fall</td>
<td>16.5</td>
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<tr>
<td>ENGR 111 Engineering Techniques (WE)</td>
<td>2</td>
</tr>
<tr>
<td>CHEM 145 General Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 147 General Chemistry Lab I</td>
<td>1</td>
</tr>
<tr>
<td>ENGL 101 Composition &amp; Critical Thought</td>
<td>3</td>
</tr>
<tr>
<td>MATH 141 Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>Humanities Elective</td>
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<tr>
<td>Physical Education Elective</td>
<td>0.5</td>
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<tr>
<td>Freshman Spring</td>
<td>17.5</td>
</tr>
<tr>
<td>ENGR 112 Computer Program. &amp; Engr. Problem Solving</td>
<td>2</td>
</tr>
<tr>
<td>CHEM 146 General Chemistry II</td>
<td>3</td>
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<tr>
<td>CHEM 148 General Chemistry Lab II</td>
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<tr>
<td>MATH 142 Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 161 Physics I</td>
<td>3</td>
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<tr>
<td>PHYS 163 Physics Lab I</td>
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<tr>
<td>Social Science Elective</td>
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<tr>
<td>Physical Education Elective</td>
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<tr>
<td>Sophomore Fall</td>
<td>18</td>
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<tr>
<td>ENGR 213 Statics</td>
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<tr>
<td>ENGR 219 Electric Circuits</td>
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<tr>
<td>ENGR 223 Electric Circuits Lab</td>
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<tr>
<td>MATH 241 Multivariable Calculus</td>
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<td>PHYS 162 Physics II</td>
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<td>PHYS 164 Physics Lab II</td>
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<td>Humanities Elective</td>
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<td>Sophomore Spring</td>
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<tr>
<td>EE 230 Logic Design</td>
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<td>EE 232 Logic Design Lab</td>
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<tr>
<td>ENGR 220 Analysis of Linear Electrical Systems</td>
<td>3</td>
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<tr>
<td>ENGR 224 Analysis of Linear Electrical Systems Lab</td>
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<tr>
<td>MATH 242 Elementary Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 261 Modern Physics with Applications</td>
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<td>Social Science Elective</td>
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<tr>
<td>Junior Fall</td>
<td>17</td>
</tr>
<tr>
<td>ENGR 315 Probability, Statistics, &amp; Random Processes</td>
<td>3</td>
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<tr>
<td>ENGR 325 Thermodynamics</td>
<td>3</td>
</tr>
<tr>
<td>EE 333 Sensors Lab or EE 334 Power Engineering Lab</td>
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<td>EE 335 Power Engineering</td>
<td>3</td>
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<tr>
<td>EE 337 Electronics I</td>
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<td>Humanities Elective</td>
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<td>Junior Spring</td>
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<td>EE 333 Electromagnetics</td>
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<tr>
<td>EE 336 Signal Analysis</td>
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<td>EE 338 Electronics II</td>
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<td>Social Science Elective</td>
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<td>ENGR 401 Senior Project I</td>
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<tr>
<td>EE 471 Controls I</td>
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<td>EE 473 Computers I</td>
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<tr>
<td>EE 477 Communications Systems</td>
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<td>ASC 400 Values Seminar (WE)</td>
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<tr>
<td>Senior Spring</td>
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</tr>
<tr>
<td>ENGR 402 Senior Project II</td>
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<tr>
<td>ENGR 412 Engineering Economics</td>
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<td>EE 404 Senior Lab</td>
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<tr>
<td>Senior Technical Electives</td>
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<td>Humanities/Social Science Elective</td>
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</tr>
<tr>
<td><strong>TOTAL CREDITS</strong></td>
<td><strong>133</strong></td>
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</tbody>
</table>

*Students must take one of the following courses: ENGR 214 Dynamics, ENGR 323 Mechanics of Deformable Bodies, ENGR 326 Materials Engineering.

### CURRICULUM—ELECTRICAL ENGINEERING: COMPUTER TRACK

<table>
<thead>
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<tr>
<td>ENGR 111 Engineering Techniques (WE)</td>
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<tr>
<td>CHEM 145 General Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 147 General Chemistry Lab I</td>
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</tr>
<tr>
<td>ENGL 101 Composition &amp; Critical Thought</td>
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</tr>
<tr>
<td>MATH 141 Calculus I</td>
<td>4</td>
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<tr>
<td>Humanities Elective</td>
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</tr>
<tr>
<td>Physical Education Elective</td>
<td>0.5</td>
</tr>
<tr>
<td>Freshman Spring</td>
<td>17.5</td>
</tr>
<tr>
<td>ENGR 112 Computer Program. &amp; Engr. Problem Solving</td>
<td>2</td>
</tr>
<tr>
<td>CHEM 146 General Chemistry II</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 148 General Chemistry Lab II</td>
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</tr>
<tr>
<td>MATH 142 Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 161 Physics I</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 163 Physics Lab I</td>
<td>1</td>
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<tr>
<td>Social Science Elective</td>
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</tr>
<tr>
<td>Physical Education Elective</td>
<td>0.5</td>
</tr>
<tr>
<td>Sophomore Fall</td>
<td>18</td>
</tr>
<tr>
<td>ENGR 213 Statics</td>
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<tr>
<td>ENGR 219 Electric Circuits</td>
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<tr>
<td>ENGR 223 Electric Circuits Lab</td>
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<tr>
<td>MATH 322 Topics in Discrete Mathematics</td>
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<td>PHYS 162 Physics II</td>
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<tr>
<td>PHYS 164 Physics Lab II</td>
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<tr>
<td>Humanities Elective</td>
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<tr>
<td>Sophomore Spring</td>
<td>17</td>
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<tr>
<td>EE 230 Logic Design</td>
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</tr>
<tr>
<td>EE 232 Logic Design Lab</td>
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</tr>
<tr>
<td>ENGR 220 Analysis of Linear Electrical Systems</td>
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<tr>
<td>ENGR 224 Analysis of Linear Electrical Systems Lab</td>
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<tr>
<td>MATH 242 Elementary Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 261 Modern Physics with Applications</td>
<td>3</td>
</tr>
<tr>
<td>Social Science Elective</td>
<td>3</td>
</tr>
<tr>
<td>Junior Fall</td>
<td>17</td>
</tr>
<tr>
<td>ENGR 315 Probability, Statistics, &amp; Random Processes</td>
<td>3</td>
</tr>
<tr>
<td>EE 337 Electronics I</td>
<td>4</td>
</tr>
<tr>
<td>EE 341 Data Structures &amp; Algorithms</td>
<td>4</td>
</tr>
<tr>
<td>EE 342 C++ Programming</td>
<td>4</td>
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<tr>
<td>Humanities Elective</td>
<td>3</td>
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<tr>
<td>Junior Spring</td>
<td>17</td>
</tr>
<tr>
<td>CSCI 264 Assembly Language</td>
<td>3</td>
</tr>
<tr>
<td>EE 336 Signal Analysis</td>
<td>4</td>
</tr>
<tr>
<td>EE 337 Electronics I</td>
<td>4</td>
</tr>
<tr>
<td>Social Science Elective</td>
<td>3</td>
</tr>
<tr>
<td>Senior Fall</td>
<td>14</td>
</tr>
<tr>
<td>ENGR 401 Senior Project I</td>
<td>2</td>
</tr>
<tr>
<td>EE 471 Controls I</td>
<td>3</td>
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<tr>
<td>EE 473 Computers I</td>
<td>3</td>
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<tr>
<td>EE 477 Communications Systems</td>
<td>3</td>
</tr>
<tr>
<td>ASC 400 Values Seminar (WE)</td>
<td>3</td>
</tr>
<tr>
<td>Senior Spring</td>
<td>16</td>
</tr>
<tr>
<td>ENGR 402 Senior Project II</td>
<td>2</td>
</tr>
<tr>
<td>EE 404 Senior Lab</td>
<td>2</td>
</tr>
<tr>
<td>E E 474 Computers II</td>
<td>3</td>
</tr>
<tr>
<td>Senior year technical Electives</td>
<td>6</td>
</tr>
<tr>
<td>Humanities/Social Science Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>TOTAL CREDITS</strong></td>
<td><strong>133</strong></td>
</tr>
</tbody>
</table>

*Students must take one of the following courses: ENGR 214 Dynamics, ENGR 323 Mechanics of Deformable Bodies, ENGR 326 Materials Engineering.
ELECTRICAL ENGINEERING/PHYSICS DOUBLE MAJOR

A special curriculum has been created that allows students who are enrolled in the traditional track to major in both electrical engineering and physics.

**CURRICULUM—ELECTRICAL ENGINEERING/PHYSICS DOUBLE MAJOR**

<table>
<thead>
<tr>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman Fall</td>
</tr>
<tr>
<td>CHEM 145 General Chemistry I</td>
</tr>
<tr>
<td>CHEM 147 General Chemistry Lab I</td>
</tr>
<tr>
<td>ENGR 111 Engineering Techniques (WE)</td>
</tr>
<tr>
<td>MATH 141 Calculus I</td>
</tr>
<tr>
<td>Humanities/Social Science Elective</td>
</tr>
<tr>
<td>Physical Education Elective</td>
</tr>
</tbody>
</table>

| Freshman Spring | 17.5 |
| CHEM 146 General Chemistry II | 3 |
| CHEM 148 General Chemistry Lab II | 1 |
| ENGL 101 Composition & Critical Thought | 3 |
| ENGR 112 Computer Program & Engr. Problem Solving | 2 |
| MATH 142 Calculus II | 4 |
| PHYS 161 Physics I | 3 |
| PHYS 163 Physics Lab I | 1 |
| Physical Education Elective | 0.5 |

| Sophomore Fall | 18 |
| ENGR 213 Statics | 3 |
| ENGR 219 Electric Circuits | 3 |
| ENGR 223 Electric Circuits Lab | 1 |
| MATH 241 Multivariable Calculus | 4 |
| PHYS 162 Physics II | 3 |
| PHYS 164 Physics Lab II | 1 |
| Humanities/Social Science Elective | 3 |

| Sophomore Spring | 18 |
| EE 230 Logic Design | 3 |
| EE 232 Logic Designs Lab | 1 |
| ENGR 220 Analysis of Linear Electrical Systems | 3 |
| ENGR 224 Analysis of Linear Electrical Systems Lab | 1 |
| MATH 242 Elementary Differential Equations | 3 |
| PHYS 261 Modern Physics with Applications | 3 |
| PHYS 263 Modern Physics Lab | 1 |
| Humanities/Social Science Elective | 3 |

| Junior Fall | 18 |
| ENGR 315 Probability, Statistics, & Random Processes | 3 |
| ENGR 325 Thermodynamics | 3 |
| EE 335 Power Engineering | 3 |
| EE 333 Sensors Lab or EE 334 Power Engineering Lab | 1 |
| EE 337 Electronics I | 4 |
| PHYS 271 Experimental Methods of Physics I | 1 |
| PHYS 315 Electromagnetic Theory | 3 |

| Junior Spring | 18 |
| EE 336 Signal Analysis | 4 |
| EE 338 Electronics I | 4 |
| PHYS 316 Optics | 3 |
| PHYS 326 Optics Lab | 1 |
| Humanities/Social Science Elective | 3 |
| Humanities/Social Science Elective | 3 |

| Senior Fall | 18 |
| ENGR 401 Senior Project I | 2 |
| EE 471 Controls I | 3 |
| EE 473 Computers I | 3 |
| EE 477 Communications Systems | 3 |
| PHYS 313 Classical Mechanics | 3 |
| PHYS 323 Classical Mechanics Lab | 1 |
| ASC 400 Values Seminar (WE) | 3 |

**Senior Spring** .................................................. 17
| ENGR 402 Senior Project II | 2 |
| ENGR 412 Engineering Economics | 3 |
| EE 404 Senior Lab | 2 |
| PHYS 413 Quantum Mechanics | 4 |
| Senior Technical Elective | 3 |
| Humanities/Social Science Elective | 3 |

**TOTAL CREDITS** ........................................... 141

*Note: Students may take PHYS 313/323 Classical Mechanics in lieu of ENGR 214; PHYS 413 Quantum Mechanics can substitute for Sr. Technical Elective; ENGR 315 can substitute for PHYS 309 Mathematical Physics; ENGR 325 Thermodynamics can substitute for PHYS 314 Thermodynamics; and students can take either PHYS 315 Electromagnetic Theory or EE 313 Electromagnetics.*

**MECHANICAL ENGINEERING**

Mechanical engineering is a highly progressive and dynamic field contributing to all areas of modern technology. Machines; mechanisms; vehicles for land, sea, and space; electromechanical devices; new materials; medical equipment; and electronic chip manufacturing are some examples of the multifaceted work of mechanical engineers. Mechanical engineers provide their services to industry, government, research, and academic institutions in various capacities, including design, manufacturing, research and development, process engineering, project management, marketing, sales, quality control, testing, and customer service.

Widener’s mechanical engineering program is designed to stimulate creative and analytical thinking, and to provide exposure to real-world practical aspects of the profession; it prepares graduates for employment and advanced graduate study.

**PROGRAM OBJECTIVES**

Mechanical engineering graduates will demonstrate the following career and professional characteristics and accomplishments a few years after graduation:

- Successfully practice in the field of mechanical engineering or related fields, assume increasing levels of responsibility, and adhere to high ethical standards.
- Communicate effectively with others and exhibit teamwork.
- Grow both personally and professionally by embracing lifelong learning in their careers.
- Engage in service to the profession and community as contributing citizens.

**PROGRAM OUTCOMES**

The educational experience provided by the curriculum integrates knowledge and skills acquired in a diverse set of courses to achieve the program objectives through the following outcomes:

- An ability to apply knowledge of mathematics, science, and engineering.
- An ability to design and conduct experiments, as well as to analyze and interpret data.
- An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
- An ability to function on multidisciplinary teams.
- An ability to identify, formulate, and solve engineering problems.
- An understanding of professional and ethical responsibility.
- An ability to communicate effectively.
- The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.
- A recognition of the need for and an ability to engage in lifelong learning.
- A knowledge of contemporary issues.
- An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.
- An ability to apply multivariable calculus and differential equations.
- An ability to model, analyze, design, and realize physical systems, components, or processes, and have the ability to work professionally in both thermal and mechanical systems areas.

**CURRICULUM—MECHANICAL ENGINEERING Credits**

<table>
<thead>
<tr>
<th>Term</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<td>ENGR 111</td>
<td>Engineering Techniques (WE)</td>
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</tr>
<tr>
<td></td>
<td>CHEM 145</td>
<td>General Chemistry I</td>
<td>3</td>
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<tr>
<td></td>
<td>CHEM 147</td>
<td>Chemistry Lab I</td>
<td>1</td>
</tr>
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<td></td>
<td>MATH 141</td>
<td>Calculus I</td>
<td>4</td>
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<tr>
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<td>ENGL 101</td>
<td>Composition &amp; Critical Thought</td>
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<td>Humanities Elective</td>
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<td>Physical Education Elective</td>
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<td><strong>Freshman Spring</strong></td>
<td>ENGR 114</td>
<td>Engineering Graphics &amp; Computer-Aided Design*</td>
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<td>Statics</td>
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<td>ENGR 219</td>
<td>Electric Circuits</td>
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<td>PHYS 164</td>
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<td>ENGR 220</td>
<td>Analysis of Linear Electrical Systems</td>
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<td>MATH 242</td>
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<td><strong>Junior Fall</strong></td>
<td>ENGR 401</td>
<td>Senior Project I</td>
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<td>ME 407</td>
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<td>ME 461</td>
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<td>ME 455</td>
<td>Heat Transfer</td>
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<tr>
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<td>Humanities/Social Science Elective</td>
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</table>

**TOTAL CREDITS** 134

*Students may take ENGR 112 Computer Program & Engr. Problem Solving or ENGR 113 Computer-Aided Engineering Design in lieu of ENGR 114.

**Mechanical engineering design electives: ME 462 Design of Mechanical Systems; ME 464 Design of Fluid-Thermal Systems.

***Mechanical engineering electives: ME 471 Topics in Mech. Engineering; ENGR 315 Probability, Statistics, & Random Processes for Engineers; ENGR 488 Special Engineering Topics; ENGR 499 Independent Study.
MECHANICAL ENGINEERING/PHYSICS DOUBLE MAJOR

Students can major in both mechanical engineering and physics. Details can be obtained from the chairman of the Department of Mechanical Engineering or the associate dean of the Science Division. The following is a typical curriculum.

CURRICULUM—MECHANICAL ENGINEERING/PHYSICS DOUBLE MAJOR

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<td>Composition &amp; Critical Thought</td>
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<td>ENGR 219</td>
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<td>MATH 241</td>
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<td>ENGR 214</td>
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<td>ENGR 320</td>
<td>Fluid Mechanics</td>
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<td>ENGR 323</td>
<td>Mechanics of Deformable Bodies</td>
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<td>ENGR 325</td>
<td>Thermodynamics</td>
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<td>MATH 242</td>
<td>Elementary Differential Equations</td>
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<tr>
<td>ME 354</td>
<td>Computations in Mechanical Engineering</td>
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<tr>
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</tr>
</tbody>
</table>

TOTAL CREDITS 146

Note: Students who opt for the co-op program may take more than four years to complete the degree requirements for double major.

*Students may take ENGR 112 Computer Program & Engr. Problem Solving or ENGR 113 Computer-Aided Engineering Design in lieu of ENGR 114.

**Mechanical engineering design electives: ME 462 Design of Mechanical Systems; ME 464 Design of Fluid-Thermal Systems.

E N G I N E E R I N G /P H Y S I C S D O U B L E M A J O R

Details can be obtained from the chairman of the Department of Mechanical Engineering or the associate dean of the Science Division. The following is a typical curriculum.
School of Hospitality Management

Accredited by the Accreditation Commission for Programs in Hospitality Administration (ACPHA)

MISSION
The mission of the School of Hospitality Management is to develop citizens of character and leaders for the global hospitality industry and to instill in them the value of civic engagement and professional development through an emphasis on experiential learning.

Success in the hospitality industry requires substantial professional knowledge, business sense, and human relations skills. The curriculum is a good balance of professional, liberal arts, and science courses together with "hands-on" experience, which requires two summer internships with a cooperative education semester in the junior or senior year.

The curriculum is designed to accommodate students with different needs and goals. This is primarily achieved through the selection of hospitality management (HM) electives.

As students progress through the curriculum, they are free to use their electives to add concentrations in their individual areas of interest. Upon consultation with faculty advisors, students may minor in areas such as accounting or modern language as well as receive their bachelor of science degree in hospitality management.

LEARNING OUTCOMES
After completing the baccalaureate program, students will be able to:

1. Identify the unique characteristics and variables of the hospitality industry.
2. Identify and apply functional areas that are important to effective hospitality management (finance, marketing, HR, law, technology, quantitative functions, economics).
3. Communicate effectively.
4. Develop both professionally and personally.
5. Develop an awareness of the personal attributes of leadership and begin to apply those attributes to successfully lead others in the hospitality industry.
6. Evaluate theories and principles of management as a component of leadership development in a global economy.
7. Competently fulfill operational activities of a hospitality manager.

REQUIRED HM COURSES
- HM 101 Introduction to the Hospitality Industry
- HM 102 Lodging Systems
- HM 107 Introduction to Food Preparation
- HM 204 Applied Human Resource Management
- HM 207 Applied Food Production Management
- HM 303 Hospitality Cost Accounting
- HM 306* Hospitality Marketing
- HM 352 Facilities Management
- HM 403 Hospitality Law
- HM 404* Strategic Human Resource Management
- HM 400*-401-402 Cooperative Education
- HM 407 Restaurant Operations Management
* Writing-enriched course.

AREAS OF INTEREST
Students may select elective courses in the hospitality field as well as free electives which can be combined with the appropriate work experience to create an area of interest in the junior and senior year. The areas of interest are as follows:

- Hospitality Management (a self-directed concentration)
- Gaming and Racing Operations
- Managed Services
- Hotel and Resort Management
- Pre-MBA
- Private Club Management
- Restaurant Management
- Tourism and Leisure Services

HOSPITALITY MANAGEMENT
Students may remain as general hospitality industry management students rather than select an area of interest. They should work with their faculty advisor in selecting courses that best prepare them for the wide range of career opportunities available in the hospitality industry.

GAMING AND RACING OPERATIONS
This area of interest prepares students for management careers in the casino and gaming industry. Students are advised to select electives and work experiences in areas relating to this field. In addition to the core requirements, it is recommended that students select courses from the following:

- HM 351 Hospitality Labor Relations
- HM 358 Hospitality Computer Applications
- HM 364 Casino Management (required)
- HM 365 Racetrack Management
- HM 450 Beverage Management

MANAGED SERVICES
This area of interest prepares students for management careers in the many segments of the managed services industry including food service management in health care, business and industry, colleges and universities, schools (K–12), corrections, vending, leisure and recreation, and in-flight. Management functions in this field also include facilities management, laundry services, and security. Students are advised to select electives and work experiences in areas relating to this field. In addition to the core requirements, it is recommended that students select courses from the following:

- HM 351 Hospitality Labor Relations
- HM 361 Managed Services (required)
- HM 363 Special Events Management
- HM 424 Hospitality Industry Training Systems
- HM 450 Beverage Management

HOTEL AND RESORT MANAGEMENT
Students are prepared for management careers in hotels and resorts. They are advised to select electives and work experiences in areas relating to this field. In addition to the core requirements, it is recommended that students select courses from the following:

- HM 355 Resort & Timeshare Management (required)
- HM 363 Special Events Management
- HM 364 Casino Management
- HM 424 Hospitality Industry Training Systems
- HM 450 Beverage Management
PRE-MBA
Students who are planning on going to graduate school for a master’s in business administration should take the following courses in fulfillment of the indicated curricular requirements:
- MATH 118 Elementary Calculus I, science elective
- MGT 210 Management Theory
- MKT Marketing Principles
- QA 251 Elementary Statistical Analysis, non-hospitality elective
- QA 252 Intermediate Statistical Analysis, free elective

PRIVATE CLUB MANAGEMENT
This area of interest prepares students for management careers in the various types of private clubs including country clubs, city clubs, yacht clubs, athletic clubs, and military clubs.
- HM 354 Club Management (required)
- HM 358 Hospitality Computer Applications
- HM 363 Special Events Management
- HM 424 Hospitality Industry Training Systems
- HM 450 Beverage Management

RESTAURANT MANAGEMENT
This area of interest prepares students for management careers in the restaurant industry. Students are advised to select electives and work experiences in areas relating to this field. In addition to the core requirements, it is recommended that students select courses from the following:
- HM 354 Club Management
- HM 358 Hospitality Computer Applications
- HM 363 Special Events Management
- HM 424 Hospitality Industry Training Systems
- HM 450 Beverage Management

TOURISM
This area of interest prepares students for management careers in the broad field of tourism-related businesses including convention and visitors bureaus, theme parks, cruise ships, entertainment and sports facilities, and travel organizations. Students are advised to select electives and work experiences in areas relating to this field. In addition to the core requirements, it is recommended that students select courses from the following:
- HM 291 Meeting Planning
- HM 358 Hospitality Computer Applications
- HM 360 Destination Marketing
- HM 368 Principles of Tourism (required)

MINORS
School of Hospitality Management students may attain a minor in accounting, economics, finance, human resources, international business, management, marketing, MIS, modern language, operations management, and sports management along with the bachelor of science in hospitality management. These students should meet with their faculty advisor and the chairman of the department of their minor for guidance. In addition to the core curriculum, students seeking the accounting minor would select any three upper-level accounting courses.

CURRICULUM—HOSPITALITY MANAGEMENT  Credits

**Freshman Fall** ............................... 16
- ENGL 101 Composition & Critical Thought 3
- HM 101 Introduction to Hospitality 3
- ML 107 Elementary Modern Language 3
- MATH 117 Elementary Functions 3
- Introductory Social Science 3
- MIS 180 Computing & Spreadsheets 1

**Freshman Spring** ............................ 15/16
- ENGL 102 Advanced Composition & Literature 3
- HM 102 Lodging Systems or HM 107 Introduction to Food Prep 3/4
- ML Modern Language 3
- Social Science Elective 3
- History or Aesthetics 3

**Freshman Summer**
Summer Internship: Required minimum 400-hour paid internship at an approved hospitality facility. A workbook must be completed and submitted.

**Sophomore Fall** .............................. 15.5/16.5
- HM 107 Introduction to Food Prep or HM 102 Lodging Systems 4/3
- EC 201 Principles of Macroeconomics 3
- ACCT 204 Basic Financial Accounting 3
- SCI 107 Food Science I 3
- Non-Hospitality Elective 3
- Physical Education Elective 0.5

**Sophomore Spring** ........................... 16.5
- SCI 209/210 Food Science II or HM 207 Applied Food Production Management 4
- EC 202 Principles of Microeconomics 3
- ACCT 205 Basic Management Accounting 3
- PRWR 215 3
- HM 204 Applied Human Resource Management or HM Elective 3
- Physical Education Elective 0.5

**Sophomore Summer**
Summer Internship: Required minimum 400-hour paid internship at an approved hospitality facility. A workbook must be completed and submitted.

**Junior Fall** ................................. 16
- HM 207 Applied Food Production Management 4
- or SCI 209/210 Food Science II 4
- HM 204 Applied Human Resource Management or HM 352 Facilities Management 3
- FIN 303 Financial Management or HM 403 Hospitality Law 3
- Free Elective or HM Elective 3
- Science Elective or Free Elective 3

**Junior Spring** ............................... 15/16

Choose this set of courses:
- HM 400 Leadership Development Seminar, Co-Op 6
- HM 401 Leadership Skills Assessment, Co-Op 3

Or this set:
- FIN 303 Financial Management 3
- HM 306 Hospitality Marketing 3
- HM 404 Strategic Human Resource Management 3
- HM 407 Restaurant Operations Management 4
- Free Elective 3

**Continued on next page.**
SUMMER INTERNSHIP

REQUIREMENTS
Bachelor’s degree candidates must complete two internships. The first should be completed during the summer between the student’s freshman and sophomore years. The second should be completed between the student’s sophomore and junior years. To complete this requirement, a minimum of 400 hours per summer of paid employment in the hospitality industry must be documented, and an internship workbook must be completed and approved by the faculty advisor.

PROCEDURES
A student is responsible for obtaining the appropriate internship workbook from his/her faculty advisor prior to the beginning of each summer internship. Students may wish to discuss their employment options with faculty advisors at this time. During the summer, the student should complete the appropriate workbook and submit it to his/her HM faculty advisor upon returning to school in the fall.

Transfer students may petition for acceptance of past internships completed for other accredited institutions as fulfillment for one internship requirement. Students transferring as juniors without prior work experience must work in the hospitality industry at least one summer prior to admittance. From this work experience, an internship workbook must be completed. The transfer student is responsible for obtaining this booklet as well as petitions for acceptance of past internships from his or her faculty advisor.

COOPERATIVE EDUCATION

REQUIREMENTS
Enrollment in the cooperative education semester is based upon fulfillment of the following prerequisites:

- Two 400-hour internships.
- Minimum of 75 credits.
- Minimum 2.0 cumulative grade-point average.
- Successful completion of HM 204 and 207.
- Approval of the co-op director.

PROCEDURES
Students are assigned to the appropriate co-op semester based on their curriculum “track.” They must take co-op in the spring of the junior year or fall of the senior year. Transfers are not scheduled for co-op prior to their second semester on campus.

A mandatory orientation meeting is held the semester prior to co-op enrollment. Students then work one-on-one with the co-op director for placement advice.

PROGRAM STRUCTURE
Co-op is mandatory for all HM majors and is considered the capstone of the HM curriculum. The program consists of three distinct courses (HM 400, 401, 402) which total 15 credits and are taken simultaneously with full semester tuition charged.

Co-op requires a minimum of 600 hours of paid employment in a pre-approved hospitality position for 16 weeks during the semester (average 37.5 hours per week). Students attend a six-hour management seminar one day per week for discussion of individual work-related issues, as well as relevant hospitality management and leadership topics.

HOSPITALITY MANAGEMENT ELECTIVES

<table>
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<tr>
<th>Course</th>
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<td>Casino Management</td>
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<td>Club Management</td>
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<tr>
<td>Managed Services</td>
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<td>Hospitality Industry Training Systems</td>
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<tr>
<td>Destination Marketing</td>
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<td>Hospitality Computer Applications</td>
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<td>Independent Research</td>
<td>1–3</td>
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<td>Beverage Management</td>
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<td>Labor Relations in the Hospitality Industry</td>
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<tr>
<td>Meeting Planning</td>
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<td>Principles of Tourism</td>
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<td>Professional Career Development</td>
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<td>Racetrack Management</td>
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<td>Resort and Timeshare Management</td>
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<tr>
<td>Special Events Management</td>
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</table>
School of Human Service Professions

The purpose of the School of Human Service Professions is to provide academic programs devoted to educating undergraduate and graduate students for professions that have as their primary focus the provision of human services. The school consists of the following academic units: the Center for Education, the Center for Social Work Education, the Institute for Graduate Clinical Psychology, and the Institute for Physical Therapy Education. The undergraduate programs of the school include a bachelor of arts in elementary education through the Center for Education and a bachelor of social work program available through the Center for Social Work Education. Teacher certification options with an academic major in the College of Arts and Sciences are also available through the Center for Education.

MISSION STATEMENT
The School of Human Service Professions aspires to prepare individuals to become innovative scholars-practitioners-citizens. The disciplines of the school use dynamic teaching, active scholarship, personal attention, and community involvement in order to foster leadership, ethical and professional decision-making, interdisciplinary dialogue, a competent responsiveness to the needs of a culturally diverse community, and a commitment to the value of lifelong learning.

CENTER FOR EDUCATION
The State Board of Education adopted changes specific to early childhood, elementary (K–6), and special education. New certification guidelines will apply January 1, 2013, regardless of a candidate’s enrollment date. Candidates seeking current certifications must complete their program by December 31, 2012.

The Center for Education prepares teacher candidates to become “knowledgeable and reflective practitioners.” To reach this goal, the Center for Education has adopted the Interstate New Teacher Assessment and Support Consortium (INTASC) Principles. Teacher candidates will be required to develop an electronic portfolio that contains artifacts that demonstrate achievement of:

Principle 1: The teacher understands the central concepts, tools of inquiry, and structure of the discipline(s) he or she teaches and can create learning experiences that make these aspects of the subject matter meaningful for students.

Principle 2: The teacher understands how children learn and develop and can provide learning opportunities that support their intellectual, social, and personal development.

Principle 3: The teacher understands how students differ in their approaches to learning and creates instructional opportunities that are adapted to diverse learners.

Principle 4: The teacher understands and uses a variety of instructional strategies to encourage students’ development of critical thinking problem solving, and performance skills.

Principle 5: The teacher uses an understanding of individual and group motivation and behavior to create a learning environment that encourages positive social interaction, active engagement in learning, and self-motivation.

Principle 6: The teacher uses knowledge of effective verbal, non-verbal, and media communication techniques to foster active inquiry, collaboration, and supportive interaction in the classroom.

Principle 7: The teacher plans instruction based on knowledge of subject matter, students, the community, and curriculum goals.

Principle 8: The teacher understands and uses formal and informal assessment strategies to evaluate and ensure the continuous intellectual, social, and physical development of the learner.

Principle 9: The teacher is a reflective practitioner who continually evaluates the effects of his/her choices and actions on others (students, parents, other professionals in the learning community) and who actively seeks out opportunities to grow professionally.

Principle 10: The teacher fosters relationships with school colleagues, parents, and agencies in the larger community to support students’ learning and well-being.

ELEMENTARY EDUCATION: THE EARLY YEARS AND SPECIAL EDUCATION
Students majoring or seeking certification in this field pursue teaching careers in preschool through grade four (age 9) and may also work with special education populations. Students pursue an Elementary Education: The Early Years degree and teacher certification in early education (Pre-K–4) and special education (K–8). The curriculum consists of 90 credits in education and 44 credits in the arts and sciences (humanities, science, and social science) for a total of 134 credits. In this program, which received a special designation by the Pennsylvania Department of Education to be a “Promising Model” or “Innovative Practice,” students will prepare to meet the demands of today’s diverse, inclusive, technology-driven schools.

ELEMENTARY EDUCATION: THE MIDDLE YEARS
A students majoring in Elementary Education: The Middle Years program will become a specialist in one academic area of language arts, science, social studies, or math and become a generalist in the remaining areas. This enables the teacher candidate to become certified to teach grades four, five, and six as a generalist and teach for the subject area or areas of concentration in grades 7 and 8. Students in this program take 51–54 credits in education courses and the remaining (72.5–78) credits in the arts and sciences (humanities, science, social sciences) with special emphasis on the area of specialty.

ADMISSION TO TEACHER CANDIDACY
All students intending to pursue teacher certification in Pennsylvania must formally apply to become a teacher candidate upon completing 48 semester hours of coursework. Likewise, students seeking teacher certification or licensure in other states must also submit an application along the same timeline. This application process applies to students who enter the university majoring in education as well as those who later switch into the major. Transfer students are to consult with the director of field experiences and certification regarding their individual situation as soon as they are admitted to the university.

Applications for admission to teacher candidacy are available at the Office of Field Experiences and Certification and through the Center for Education website www.widener.edu/cfel/under Applications, Forms, and Resources. Students should discuss their career plans with their major academic advisor early on so that they may plan accordingly to meet teacher candidacy admissions criteria, and subsequently Pennsylvania state certification requirements.

The director of field experiences and certification makes the determination to admit students to teacher candidacy based on evidence that the students have completed or acquired the following:

- At least 48 semester hours of coursework.
- At least 3 semester hours of English composition and 3 semester hours of English/American literature.
- At least 6 semester hours of college level mathematics.
- An overall 3.0 GPA (also recommended for certification upon completing the program in PA).
• Passing scores on the Praxis I, Pre-Professional Skills Test for Reading, Writing, and Mathematics.
• All education courses with a grade of at least a “B.”
• Two favorable faculty recommendations.
• A “B” or better in education courses.
• Satisfactory scores on annual writing samples.
• A score of at least “emergent” on the portfolio review.

Students who do not apply for teacher candidacy upon completing 48 semester hours of coursework will be barred from scheduling additional education courses. Additionally, their applications to student teaching will be denied.

**ELECTRONIC PORTFOLIO**

All students in teacher education must submit an electronic portfolio four times during the following time frames:

**First submission**
- For students in Elementary Education: The Early Years: During ED 1101–1102
- For students in Elementary Education: The Middle Years: During ED 1121
- For all Secondary Education students: During ED 101–102

**Second submission**
- For students in all certification areas: By February 15 of the sophomore year

**Third submission**
- For students in all certification areas: Prior to student teaching

**Fourth submission**
- For students in all programs: After student teaching

**FIELD-BASED EXPERIENCES AND STUDENT TEACHING**

Field experiences in local schools are an important part of the preparation for future teachers. Therefore, all education courses contain a field experience component that students must complete. Required field experiences involve observing, and participating in a variety of school-related tutoring activities. Perhaps the most important reason for having field experiences is to allow students to confirm, through actually working in schools, whether or not they want to pursue a career in education.

Because successful completion of field experiences is required by Pennsylvania state standards and because they are so integral to the certification programs, students must arrange their schedules so that all other activities (including participation in athletics and other collegiate extracurricular programs) do not interfere with these field and teaching experiences. Perhaps the most important reason for having field experiences is to allow students to confirm by actual participation in the work of the schools whether or not they want to pursue a career in education.

**LAB PRESCHOOL**

The Center for Education runs the Widener University Child Development Center, a full-time laboratory preschool for children two to six years of age. Many students in the Elementary Education: The Early Years program complete the field experiences for their undergraduate courses in education at this school. The school is licensed by the Pennsylvania Department of Education as a nursery school and by the Welfare Department as a child care center. The Child Development Center is an NAECY (National Association for the Education of Young Children) accredited program.

**STUDENT TEACHING**

The culminating experience in preparing students seeking certification is a full-time, 14-week, student teaching experience during the senior year. This experience is designed to provide candidates with the opportunity to put into practice all the principles and techniques learned throughout their coursework.

Applications to student teach must be submitted by March 1 if students anticipate that they will be ready to student teach in the following academic year (fall or spring semester). Students who have not applied for admission to teacher candidacy (see above) are not allowed to student teach. Those students who are declared ineligible for teacher candidacy for the Commonwealth of Pennsylvania should consult with their academic advisor or the director of field experiences and certification about possible alternatives.

A student cannot participate in student teaching without the approval of both the director of field experiences and certification and the student’s academic advisor. Approval to student teach is based on whether students have made progress toward meeting all requirements for student teaching. These requirements include the successful completion of all field experiences, all required professional education courses, the writing sample requirement, maintaining an overall GPA of 3.00, and the development of a portfolio according to INTASC principles.

Please note that it is mandatory for all student teachers to participate in a portfolio development and review process. Students who do not achieve a score of at least proficient cannot earn an “A” for student teaching, nor will they be recommended for certification.

**SPECIAL NOTE:** The Center for Education maintains a strict dress code policy for all students engaged in field experiences. The policy calls for males to wear a dress shirt, tie, dress slacks, and dress shoes. Women must wear either a skirt or dress pants with a dress blouson or sweater, and dress shoes. Or, they may wear a dress. Please be mindful of length and appropriate body coverage. Students may be asked to leave a site for violating the dress code policy. Sweats, jeans, sneakers, and casual clothing are not permitted. Please refer to the Center for Education website at www.widener.edu/cfe for a complete explanation.

**FIELD EXPERIENCES**

Field experiences in local schools are an important part of the preparation of future teachers. Required field experiences involve observing and participating in school-related activities. Students must complete all field experience requirements prior to student teaching. Transfer students must consult with the director of Field Experiences and Certification concerning this matter. The field experiences required of Widener students are coordinated by the director of Field Experiences and Certification.

Since successful completion of field experiences is required by Pennsylvania state standards and because they are so integral to the certification programs, students must arrange their schedules so that all other activities (including participation in athletics and other collegiate extracurricular programs) do not interfere with these field and teaching experiences. Perhaps the most important reason for having field experiences is to allow students to confirm by actual participation in the work of the schools whether or not they want to pursue a career in education.
STUDENT TEACHING OVERSEAS
Students who qualify for student teaching are welcome to apply for a student teaching experience in another country. Students will complete the first half of their student teaching program in the regular program at Widener. If selected, they can complete the second half of their student teaching experience in the primary or secondary schools abroad under the auspices of a cooperating university. Students will be selected for the program via application, interview process, and review of academic credentials. A panel of faculty members will decide who is eligible for the program.

A faculty member from Widener University will orient students, prior to their placement, regarding the culture, expectations, and guidelines for teaching in the public and private elementary and secondary schools. While in the foreign placement, students will be supervised by a member of the faculty of the host university and a faculty member from Widener. They will also be under the direction of a cooperating teacher from the elementary/secondary school in which they are doing their student teaching.

WRITING REQUIREMENT
Undergraduate majors in the Center for Education must take two writing enriched courses from the College of Arts and Sciences and two courses from the following: ED 101, 223, 316, 1101, 1201, 1202, 1302, 1303, 1304, and 1306.

CERTIFICATION
Students seeking teacher certification for the Commonwealth of Pennsylvania must satisfy the following criteria before being recommended:

• Be formally admitted to teacher candidacy status.
• Complete an array of courses that provide a rich and varied background necessary for the profession.
• Successfully pass all field experiences.
• Successfully complete the student teaching experience.
• Complete all requirements for a bachelor’s degree.
• Successfully complete the writing sample requirement.
• Pass the portfolio requirement with at least a score of proficient.
• Earn a passing score on the Praxis Series of tests as required by the Pennsylvania Department of Education.
• Be approved by the director of field experience and certification and appropriate faculty members.

GRADUATE PROGRAMS
Programs of study are offered that lead to the master of education and doctor of education degrees. For more information, see School of Human Service Professions Graduate Programs Catalog. For some students who declare their interest in certification after their first year of classes, it may be necessary to complete some requirements for certification as a graduate student.

CURRICULUM INFORMATION
• Due to possible revisions by the Pennsylvania Department of Education, the following curriculum ladders are meant only as guides for the programs. Changes may occur and will be communicated through each student’s advisor.
• All students must have criminal record checks, child abuse clearances, and FBI fingerprints prior to the first class. Failure to have these records will result in a drop from the registration.
• Education students must receive a grade of B (3.0) or better in all education classes. Students must have a 3.0 overall GPA and pass Praxis I to be admitted to teacher candidacy.

CURRICULUM—ELEMENTARY EDUCATION: THE EARLY YEARS / SPECIAL EDUCATION

Freshman Fall .................................................. 15.5
ED 1101 Family & Community Relations* .................. 3
ED 1102 Effective Instructional Practices & Delivery —
Methods for All Levels of Special Education Support .......... 3
ENGL 101 Composition & Critical Thought .................. 3
PSY 105 Introduction to Psychology ......................... 3
Elective ......................................................... 3
Physical Education Elective ................................ 0.5

Note: 20 hours of field experience are required in this semester.

*Students must have current criminal record checks, FBI clearances, and child abuse clearances. See page 94 for details.

Freshman Spring ................................................... 15.5
ED/PSY 202 Educational Psychology ......................... 3
ED 1103 Evidence Based Effective Instruction— —
High Incidence Disabilities ........................................ 3
ED 1104 Language Development in Early Childhood Education 3
ENGL 102 Advanced Composition & Literature .............. 3
MATH 111 Mathematical Ideas I ................................ 3
Physical Education Elective ................................ 0.5

Note: 35 hours of field experience are required in this semester.

Sophomore Fall ................................................... 18.0
ED 1201 Family Collaboration & Diversity ................. 3
ED 1202 Advocacy, Collaboration, & Cooperative Learning 3
ED 1206 Language Development, Birth to Age 6 ............ 3
HIST 121 or 122 Growth of American Civilization I or II ...... 3
Math 112 Mathematical Ideas II ................................ 3
English Literature Elective — ................................ 3

Note: 20 hours of field experience are required in this semester.

Sophomore Spring .................................................. 18.0
TED 1211 Technology: Instructional, Assistive, Universal —
Design to Support Reading, Mathematics, & Writing ........... 3
ED 1203 Math—Early Foundations ........................... 3
ED 1204 Engaging Young Children, Integrating —
Curriculum, & Instruction ........................................ 3
ED 1205 Intensive Reading, Writing, & Mathematics —
Intervention Approaches ....................................... 3
History Elective* ............................................. 3
Elective ......................................................... 3

Note: 30 hours of field experience are required in this semester.

*Students must have current criminal record checks, FBI clearances, and child abuse clearances. See page 94 for details.

Continued on next page.
**Junior Fall** ................................. 18.0  
ED 1301 Child Development, Atypical .......................................................... 3  
ED 1302 Early Literacy, Pre-K–1 ................................................................. 3  
ED 1303 Social Studies Methods ............................................................... 3  
ED 1304 Early Childhood Education Math Methods ...................................... 3  
ED 1305 Special Education Processes & Procedures, Screening, Assessment, IEP Development, & Evaluation ................................................. 3  
EC 201 Microeconomics, EC 202 Macroeconomics, or Government & Politics Elective ................................................................. 3  
**Note:** 40 hours of field experience are required in this semester. Apply for student teaching.

**Junior Spring** ................................. 18.0  
ED 1306 Literacy Foundations for the Primary Grades (2–4) .......................... 3  
ED 1307 Science Methods ........................................................................... 3  
ED 1308 Integrating the Arts ....................................................................... 3  
ED 1309 Evidence Based Effective Instruction—Students with Behavioral Disabilities ................................................................. 3  
ED 1310 Subject Area Content Access for Students with Learning Disabilities ................................................................. 3  
Science Elective ......................................................................................... 3  
**Note:** 50 hours of field experience are required in this semester.

**Senior Fall** ................................. 16.0  
ED 1401 Evidence Based Effective Instruction—Pervasive Developmental Disorders ................................................................. 3  
ED 1402 Evidence Based Effective Instruction—Low Incidence Disabilities ............................................................................... 3  
ED 1403 Evidence Based Practices in Early Childhood Care & Education ......................................................................................... 3  
Science Elective with Lab ........................................................................... 4  
COMS 180 or 290 ...................................................................................... 3  
**Note:** 30 hours of field experience are required in this semester. Portfolio requirement III.

**Senior Spring** ................................. 15  
ED 1410 Student Teaching .......................................................................... 12  
ED 1405 Collaboration & Communication .................................................. 3  

**TOTAL CREDITS** .................................................. 134

*Students must have current criminal record checks, FBI clearances, and child abuse clearances. See page 94 for details.

**CURRICULUM—ELEMENTARY EDUCATION: THE MIDDLE YEARS, LANGUAGE ARTS**

**Freshman Fall** ................................. 16.5  
MATH 111 Mathematical Ideas I .................................................................. 3  
ED 1121 Introduction to Teaching & Educational Technology* .................. 3  
ENGL 101 Composition & Critical Thought ................................................. 3  
PSY 105 Introduction to Psychology ............................................................. 3  
Biol 101 Principles of Biological Systems .................................................... 4  
Physical Education Elective ........................................................................ 0.5  
**Note:** 20 hours of field experience are required in this semester.

**Freshman Spring** ................................. 15.5  
ED/PSY 213 Adolescent Psychology ............................................................ 3  
MATH 112 Mathematical Ideas II ................................................................. 3  
HIST 121 Growth of American Civilization I .............................................. 3  
ANTH 105 Cultural Anthropology .............................................................. 3  
ENGL 102 Advanced Composition & Literature ........................................... 3  
Physical Education Elective ........................................................................ 0.5  
**Note:** 35 hours of field experience are required in this semester.

**Sophomore Fall** ................................. 15.0  
Math 116 The Nature of Mathematics .......................................................... 3  
ED 1221 Implementing the Middle School Curriculum ................................. 3  
ENGL 134 British Literature II ...................................................................... 3  
CHEM 100 Chemistry & Everyday Life ......................................................... 3  
Elective ....................................................................................................... 3  
**Note:** 20 hours of field experience are required in this semester. Students should apply for teacher candidacy. Portfolio requirement II.

**Sophomore Spring** ................................. 13.0  
ED/PSY 250 Effective Instructional Practices & Delivery Methods for All Levels of Special Education Support ........................................... 3  
EC 201 Microeconomics or EC 202 Macroeconomics ................................ 3  
ED 1222 Adolescent Literature ................................................................. 3  
CHEM 111 Implications of Chemistry Lab .................................................... 1  
Government & Politics Elective .................................................................... 3  
**Note:** 30 hours of field experience are required in this semester.

**Junior Fall** ................................. 16.0  
ED 1321 Instruction & Assessment—Language Arts ..................................... 3  
ED 1326 Classroom Management ............................................................... 3  
ENGL 337 Renaissance Literature ............................................................... 3  
ENGL 301 Methods of Literary Study ............................................................ 3  
ENVR 120 Environmental Awareness & Action in the 21st Century ................ 4  
**Note:** Forty hours of field experience are required in this semester. Apply for student teaching.

**Junior Spring** ................................. 18.0  
ED 1322 Instruction & Assessment—Math .................................................. 3  
ED 1323 Instruction & Assessment—Social Studies ..................................... 3  
ED 1325 Advanced Assessment in Middle School ......................................... 3  
ENGL 337 Renaissance Literature ............................................................... 3  
ENGL 357 The British Novel ........................................................................ 3  
ENGL 363 Literature in English after Empire .............................................. 3  
**Note:** 50 hours of field experience are required in this semester.

**Senior Fall** ................................. 14.5  
Math 114 Basic Concepts of Probability & Statistics ..................................... 4  
ED 1424 Instruction & Assessment—Science .............................................. 3  
ED 1422 English Language Learners in the Middle School .................................. 3  
ENGL 326 Languages & Cultures ............................................................... 3  
SSCI M 906 Geography .............................................................................. 1.5  
**Note:** 30 hours of field experience are required in this semester. Portfolio requirement III.

**Senior Spring** ................................. 18  
ED 1411 Student Teaching .......................................................................... 12  
ED 1423 Collaboration & Inclusion in MS .................................................. 3  
ED 1421 Literacy/Disabilities ....................................................................... 3  

**TOTAL CREDITS** .................................................. 126.5

*Students must have current criminal record checks, FBI clearances, and child abuse clearances. See page 94 for details.
### CURRICULUM—ELEMENTARY EDUCATION: THE MIDDLE YEARS, MATH

**Freshman Fall** .......................... 16.5
MATH 111 Mathematical Ideas I .......................... 3
ED 1121 Introduction to Teaching & Educational Technology* .......................... 3
ENGL 101 Composition & Critical Thought .......................... 3
PSY 105 Introduction to Psychology .......................... 3
BIOL 101 Principles of Biological Systems .......................... 4
Physical Education Elective .......................... 0.5

*Note: 20 hours of field experience are required in this semester.*

**Freshman Spring** .......................... 15.5
Math 112 Mathematical Ideas II .......................... 3
ED/PSY 213 Adolescent Psychology .......................... 3
HIST 121 Growth of American Civilization I .......................... 3
ANTH 105 Cultural Anthropology .......................... 3
ENGL 102 Advanced Composition & Literature .......................... 3
Physical Education Elective .......................... 0.5

*Note: 15–20 hours of field experience are required in this semester.*

**Sophomore Fall** .......................... 15.0
Math 116 The Nature of Mathematics .......................... 3
ED 120 Implementing the Middle School Curriculum .......................... 3
CHEM 100 Chemistry & Everyday Life .......................... 3
Math 120 Precalculus .......................... 3
Elective .......................... 3

*Note: 20 hours of field experience are required in this semester.*

**Sophomore Spring** .......................... 13.0
ED/PSY 250 Effective Instructional Practices & Delivery Methods for All Levels of Special Education Support .......................... 3
EC 201 Microeconomics or EC 202 Macroeconomics .......................... 3
MATH 118 Elementary Calculus I .......................... 3
CHEM 111 Implications of Chemistry Lab .......................... 1
Government & Politics Elective .......................... 3

*Note: 25 hours of field experience are required in this semester.*

**Junior Fall** .......................... 16.0
ED 1321 Instruction & Assessment—Language Arts .......................... 3
ED 1326 Classroom Management .......................... 3
MATH 151 Elementary Discrete Math .......................... 3
MATH 217 Elementary Calculus .......................... 3
ENVR 120 Environmental Awareness & Action in the 21st Century .......................... 4

*Note: 40 hours of field experience are required in this semester.*

**Junior Spring** .......................... 18.0
ED 1322 Instruction & Assessment—Math .......................... 3
ED 1323 Instruction & Assessment—Social Studies .......................... 3
MATH 152 Elementary Discrete Mathematics II .......................... 3
MATH 218 Elementary Calculus .......................... 3
ENGL 134 British Literature II .......................... 3
ED 1325 Advanced Assessment in Middle School .......................... 3

*Note: 45 hours of field experience are required in this semester.*

**Senior Fall** .......................... 14.5
MATH 114 Basic Concepts of Probability & Statistics .......................... 4
ED 1424 Instruction & AssessmentScience .......................... 3
ED 1422 English Language Learners in the Middle School .......................... 3
ENGL 326 Languages & Cultures .......................... 3
SSCI M 906 Geography .......................... 1.5

*Note: 40 hours of field experience are required in this semester.*

**Senior Spring** .......................... 18
ED 1411 Student Teaching .......................... 12
ED 1423 Collaboration & Inclusion in MS .......................... 3
ED 1421 Literacy/Disabilities .......................... 3

**TOTAL CREDITS** .......................... 126.5

*Students must have current criminal record checks, FBI clearances, and child abuse clearances. See page 94 for details.

### CURRICULUM—ELEMENTARY EDUCATION: THE MIDDLE YEARS, SCIENCE

**Freshman Fall** .......................... 16.5
MATH 117 Elementary Functions .......................... 3
ED 1121 Introduction to Teaching & Educational Technology* .......................... 3
ENGL 101 Composition & Critical Thought .......................... 3
PSY 105 Introduction to Psychology .......................... 3
PHYS 108/118 Introduction to Astronomy & Lab .......................... 4
Physical Education Elective .......................... 0.5

*Note: 20 hours of field experience are required in this semester.*

**Freshman Spring** .......................... 16
MATH 118 Elementary Calculus .......................... 3
ED/PSY 213 Adolescent Psychology .......................... 3
BIOL 161 Biological Concepts .......................... 4
Government & Politics Elective .......................... 3

*Note: 20 hours of field experience are required in this semester.*

**Sophomore Fall** .......................... 14.0
MATH 114 Basic Concepts of Probability & Statistics .......................... 4
ED 1221 Implementing the Middle School Curriculum .......................... 3
BIOL 161 Biological Concepts .......................... 4
Government & Politics Elective .......................... 3

*Students should apply for teacher candidacy. Portfolio requirement II.*

**Sophomore Spring** .......................... 16.5
HIST 121 or 122 Growth of American Civilization I or II** .......................... 3
ED/PSY 250 Effective Instructional Practices & Delivery Methods for All Levels of Special Education Support .......................... 3
EC 201 Microeconomics or EC 202 Macroeconomics .......................... 3
MATH 151 Elementary Discrete Mathematics .......................... 3
ESSC 109/119 Introduction to Weather & Climate w/ Lab .......................... 4
Physical Education Elective .......................... 0.5

*Note: 25 hours of field experience are required in this semester.*

**Junior Fall** .......................... 15.0
ED 1321 Instruction & Assessment—Language Arts .......................... 3
ED 1326 Classroom Management .......................... 3
PHYS 141 College Physics I .......................... 5

*Note: 40 hours of field experience are required in this semester.*

Apply for student teaching.

**Junior Spring** .......................... 16.0
ED 1322 Instruction & Assessment—Math .......................... 3
ED 1323 Instruction & Assessment—Social Studies .......................... 3
ENGL 134 British Literature II .......................... 3
ED 1325 Advanced Assessment in Middle School .......................... 3
PHYS 142 College Physics II .......................... 4

*Note: 45 hours of field experience are required in this semester.*

**Senior Fall** .......................... 14.5
ENVR 201 Environmental Geology .......................... 4
ED 1424 Instruction & Assessment—Science .......................... 3
ED 1422 English Language Learners in the Middle School .......................... 3
ENGL 326 Languages & Cultures .......................... 3
SSCI M 906 Geography .......................... 1.5

*Note: 40 hours of field experience are required in this semester.*

**Portfolio requirement III.*

**Senior Spring** .......................... 18
ED 1411 Student Teaching .......................... 12
ED 1423 Collaboration & Inclusion in MS .......................... 3
ED 1421 Literacy/Disabilities .......................... 3

**TOTAL CREDITS** .......................... 126.5

*Students must have current criminal record checks, FBI clearances, and child abuse clearances. See page 94 for details.

**Choice of HIST 121 or 122 or any other history, including music or art history.
### CURRICULUM—ELEMENTARY EDUCATION: THE MIDDLE YEARS, SOCIAL STUDIES

**Freshman Fall** ............................................. 16.5  
MATH 111 Mathematical Ideas I ................................ 3  
ED 1121 Introduction to Teaching & Educational Technology* . 3  
ENGL 101 Composition & Critical Thought .......................... 3  
PSY 105 Introduction to Psychology ................................. 3  
BIO 101 Principles of Biological Systems ............................. 4  
Physical Education Elective ....................................... 0.5  
*Note: 20 hours of field experience are required in this semester.*

**Sophomore Fall** ............................................. 16.5  
MATH 116 The Nature of Mathematics ............................. 3  
ED 1221 Implementing the Middle School Curriculum ............. 3  
HIST 101 Western Civilization II (1300–1815) ................... 3  
HIST 104 Women in the Western Tradition ....................... 3  
CHEM 111 Implications of Chemistry Lab ......................... 3  
GEO 105 American Government & Politics .......................... 3  
SOC 105 Introduction to Sociology .................................. 3  
*Note: 30 hours of field experience are required in this semester.*  
**Students should apply for teacher candidacy. Portfolio requirement II.**

**Sophomore Spring** .......................................... 16.0  
ED/PSY 250 Effective Instructional Practices & Delivery  Methods for All Levels of Special Education Support ............... 3  
EC 201 Microeconomics or EC 202 Macroeconomics ............... 3  
HIST 121 Growth of American Civilization I ..................... 3  
CHEM 112 Implications of Chemistry Lab ......................... 3  
GEO 101 American Government & Politics .......................... 3  
SOC 106 Introduction to Sociology .................................. 3  
*Note: 20 hours of field experience are required in this semester.*  
**Apply for student teaching.**

**Junior Fall** ................................................. 16.0  
ED 1321 Instruction & Assessment—Language Arts ................ 3  
ED 1326 Classroom Management .................................... 3  
HIST 343 European Diplomacy, 1871–1945 ......................... 3  
HIST 356 America from Civil War to World Stage, 1861–1914 .... 3  
ENVR 120 Environmental Awareness & Action ...................... 4  
*Note: 40 hours of field experience are required in this semester.*

**Junior Spring** ............................................... 18.0  
ED 1322 Instruction & Assessment—Math .......................... 3  
ED 1323 Instruction & Assessment—Social Studies ................ 3  
HIST 388 Special Topics ........................................... 3  
ASC 400 Values Seminar .......................................... 3  
ENGL 134 British Literature II ...................................... 3  
ED 1325 Advanced Assessment in Middle School .................. 3  
*Note: 50 hours of field experience are required in this semester.*

**Senior Fall** .................................................. 16.0  
MATH 114 Basic Concepts of Probability & Statistics .............. 4  
ED 1424 Instruction & Assessment—Science ......................... 3  
ED 1422 English Language Learners in the Middle School .......... 3  
ENGL 326 Languages & Cultures .................................... 3  
ED 1420 Geography in the MS ...................................... 3  
*Note: 30 hours of field experience are required in this semester.*  
**Portfolio requirement III.**

**Senior Spring** .............................................. 15  
ED 1411 Student Teaching ........................................ 12  
ED 1423 Collaboration & Inclusion in MS ........................... 3  
ED 1421 Literacy/Disabilities ...................................... 3  
**TOTAL CREDITS** ........................................... 132.5

*Students must have current criminal record checks, FBI clearances, and child abuse clearances. See page 94 for details.*

### SECONDARY EDUCATION PROGRAMS

Students can pursue secondary teacher certification in biology, chemistry, earth and space science, English, French, general science, mathematics, physics, social studies (history), and Spanish.

Education courses required for secondary certification include ED 101, 102, 201, 206, 250, 1421, 1422, 1423, and an appropriate course in teaching methods. In addition, each student must adjust his/her subject-matter academic work to meet the requirements for a full-time student teaching experience during the senior year, a 14-week experience of teaching a full complement of secondary courses.

**FOR SECONDARY EDUCATION CERTIFICATION IN MATHEMATICS, SEE PAGE 58.**

**FOR SECONDARY EDUCATION CERTIFICATION IN BIOLOGY, CHEMISTRY, EARTH AND SPACE SCIENCE, GENERAL SCIENCE, AND PHYSICS, SEE PAGES 61–63.**

### ENGLISH SECONDARY EDUCATION

Liberal arts students who complete the major field requirements in English and who complete the requirements for teacher certification will upon graduation be licensed to teach secondary English.

### CURRICULUM—CERTIFICATION IN ENGLISH Credits

**Freshman Fall** ............................................. 16.5  
PSY 105 Introduction to Psychology ................................. 3  
ENGL 101 Composition & Critical Thought ......................... 3  
ENGL 131 World Literature I ....................................... 3  
ED 101 Introduction to Teaching* ................................. 3  
ED 102 Introduction to Educational Technology .................... 1  
Art History Elective ........................................... 3  
Physical Education Elective ....................................... 0.5  
**Freshman Spring** ........................................... 16.5  
ENGL 102 Advanced Composition & Literature ..................... 3  
Social Science Elective ......................................... 3  
Science Elective ............................................... 4  
Humanities Elective ............................................ 3  
ENGL 132 World Literature II ...................................... 3  
Physical Education Elective ....................................... 0.5  
**Sophomore Fall** ............................................ 18  
ED/PSY 201 Educational Psychology .................................. 3  
ED/PSY 250 Effective Instructional Practices & Delivery  Methods for All Levels of Special Education Support ............... 3  
Math Elective .................................................. 3  
PRWR 215 ...................................................... 3  
English major courses ........................................... 6  
**Sophomore Spring** .......................................... 15  
Humanities Elective ............................................ 3  
Science Elective ............................................... 3  
Math Elective .................................................. 3  
Psychology Elective ............................................. 3  
English major course ............................................ 3  
**Junior Fall** ................................................. 15  
English major courses ............................................ 6  
English elective in creative writing .................................. 3  
Advanced humanities electives ..................................... 6  
**Junior Spring** .............................................. 18  
ED 1421 Learners with Disabilities .................................. 3  
ED 1422 Teaching English Language Learners ..................... 3  
English major courses ............................................ 6  
ENGL 327 English Linguistics ..................................... 3  
Elective ......................................................... 3
**SOCIAL STUDIES EDUCATION**

Anthropology, psychology, sociology, history, government and politics, and economic majors who wish to teach social studies can seek certification. This comprehensive certificate permits graduates to teach secondary social studies courses, including history, political science, economics, geography, and world cultures, in secondary schools. In addition to professional education courses of study and experiences in the field, the Pennsylvania Department of Education requires competency and a knowledge base in college-level history, economics, government, political science, comparative political systems, geography, non-Western culture, and historical and social science research methods. This material is mastered in distribution requirements of the university.

**CURRICULUM—CERTIFICATION IN SOCIAL STUDIES (E.G., WITH HISTORY MAJOR *)**

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<th>Course</th>
<th>Credits</th>
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<td><strong>Freshman Fall</strong></td>
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<tr>
<td>ENGL 101 Composition &amp; Critical Thought</td>
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<td>Humanities Elective</td>
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<td>ED 101 Introduction to Teaching**</td>
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<td>Physical Education Elective</td>
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<td><strong>Freshman Spring</strong></td>
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<td>ENGL 102 Advanced Composition &amp; Literature</td>
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<td>GP 101 American Government &amp; Politics</td>
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<td>Physical Education Elective</td>
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<tr>
<td><strong>Sophomore Fall</strong></td>
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<td>HIST 100, 101, 102, 104, or 121</td>
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<td>Science Elective</td>
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<td>SOC 105 Introduction to Sociology</td>
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<td>Advanced history course***</td>
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<td><strong>Sophomore Spring</strong></td>
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<td>HIST 100, 101, 102, 104, or 122</td>
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<td>Math Elective</td>
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<td>EC 201 Principles of Macroeconomics</td>
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</table>

**TOTAL CREDITS** 132

*Students must have current criminal record checks, FBI clearances, and child abuse clearances. See page 94 for details.

**MODERN LANGUAGE EDUCATION**

The completion of all the requirements for a major in French or Spanish, and the completion of all teacher education requirements will permit a student to be certified as a teacher of that language upon graduation. Occasionally, students who major in one of the humanities and who wish to become a teacher will complete the requirements of a second major. This permits the student upon graduation to be certified in more than one subject field. Many times school districts find this to be a most desirable type of teaching candidate. Double majors such as French and Spanish, or a modern language and another field in the humanities, social sciences, or math/science are possible. If students are considering this type of double major, it is most important that they begin working early with their advisor in order to complete the requirements for two complete major fields and teacher certification. It may not be possible to complete all of the requirements within the usual eight-semester undergraduate program.

Another option open to Spanish and French majors is the teacher certification program in Spanish or French with an emphasis on bilingual education (see below). Students who wish to teach in an "English as a Second Language" program would complete both an English major and a minor in Spanish/French as well as the education courses required for certification.
**CENTER FOR SOCIAL WORK EDUCATION**

**THE SOCIAL WORK PROGRAM**

The social work program is accredited by the Council on Social Work Education and leads to the bachelor of social work degree. The program prepares students to provide competent and effective generalist social work services in agency-based settings to individuals, families, groups, organizations, and communities. The curricula are designed to promote critical thinking, an appreciation of diversity and different ways of knowing, a commitment to high ethical standards, and an understanding of both the art and science of social work practice.

Students take social work courses and specific courses in the behavioral and social sciences and complete 480 hours of supervised field work experience in a variety of social service settings. In addition, the social work core curriculum involves service learning. This is a teaching approach that requires students to step out of the classroom and into a community where they will experience social work firsthand. This method is incorporated in BSW classes beginning in the freshman year. Students will be incrementally exposed to a variety of settings and populations connecting academic learning to real-life experiences through reflection and classroom assignments.

**DECLARING THE SOCIAL WORK MAJOR**

Students may declare social work as a major upon entering the university or at any time prior to the junior year. Enrollment in social work courses beyond introductory level courses (SW 107 and SW 206/207) is restricted to social work majors.

**APPLICATION TO THE BSW PROGRAM**

Students are formally considered for admission to the BSW program in their junior year. To be considered for admission to the BSW program, a student must have:

- Completed at least 60 credits (including SW 107, 206, and 207).
- Completed enrolled in SW 310.
- Achieved a cumulative GPA of 2.5 or higher.
- Achieved a GPA of 2.5 or higher in social work courses.
- Earned no lower than a grade of “C” in any social work course.
- Demonstrated competency in oral and written expression of the English language.
- Demonstrated personal characteristics consistent with a potential for professional social work practice.

All social work majors must submit an application for admission to the BSW program no later than the fall semester of the junior year to be eligible to earn the BSW degree. Transfer students may request an extension to submit their candidacy application until the spring of their junior year. The application procedure requires students to meet with their advisors to discuss their qualifications for admission. Students applying to the BSW program will submit a personal statement describing their interest in the social work profession, their professional goals, and a self-evaluation describing personal qualities that would contribute to successful practice in social work. The BSW Program Committee reviews and makes the final disposition on applications.

**GENERAL EDUCATION REQUIREMENTS**

Students must satisfy the university’s skill requirements; meet the undergraduate distribution requirements in the social sciences, humanities, and science and mathematics; and successfully complete the required courses in the major. Students must complete a minimum of 122 credits to graduate (121 credits for transfer students who are exempt from the PE requirement).
**SKILL REQUIREMENTS**

**Writing**: Students must complete ENGL 101, the freshman composition course. In addition, all students must complete at least four writing-enriched courses. Writing-enriched courses have three or more writing assignments that include student editing and revision so that students learn to correct errors. The multiple writing assignments, including revisions, total at least 25 pages. The social work curriculum includes the following writing-enriched courses: SW 206, 207, 304, and 315. To graduate, students must attain by their senior year a level "5" competency in the writing sample assessment administered by the Writing Center.

**Mathematics**: All students must demonstrate mathematics proficiency either by successfully completing the mathematics proficiency test administered by the Science Division or completion of three mathematics semester hours.

**GENERAL EDUCATION DISTRIBUTION REQUIREMENTS**

Science and Mathematics (12 credits)
- BIOL 101 and Lab or BIOL 107.
- BIOL 102 or PSY 355.
- Two additional three-credit courses in science or mathematics.

**Humanities (12 credits)**
- History or art history course.
- One humanities course with diversity content.
- Two additional courses in humanities.**

*All social work students in the Center for Social Work Education must either complete one of the four humanities courses at the 300 level or two semesters of a modern language at the elementary or intermediate level. In addition, double majors (e.g., social work/psychology, social work/women’s studies) must take one course in literature, art history, music, or philosophy).

**Humanities Elective**
- Other humanities courses.

**Social Science (12 credits)**
- Societal/cultural perspective—Two introductory social science courses in different fields.
- Two additional courses in social sciences, one of which must be at an advanced level (200 level and above).

**SOCIAL WORK PROGRAM REQUIREMENTS**

Enrollment in the social work courses beyond the introductory level is restricted to social work majors.

**REQUIREMENTS—SOCIAL WORK MAJOR**

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<td>BIOL 101</td>
<td>Principles of Biological Systems w/ Lab</td>
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<td>BIOL 107</td>
<td>Biology &amp; Society</td>
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<td>American Government &amp; Politics</td>
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<td>Introduction to Psychology</td>
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<td>SOC 105</td>
<td>Introduction to Sociology</td>
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<tr>
<td>SW 107</td>
<td>Introduction to Social Work &amp; Social Welfare</td>
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<td>Human Behavior in the Social Environment I</td>
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<td>Human Behavior in the Social Environment II</td>
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<td>SW 304</td>
<td>Sociocultural Dimensions of Social Work</td>
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<td>SW 310</td>
<td>Social Work with Individuals, Families, &amp; Groups</td>
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<td>SW 315</td>
<td>Social Work with Communities &amp; Organizations</td>
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<td>SW 325</td>
<td>Social Welfare Policy: Analysis &amp; Development</td>
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<td>PSY 387</td>
<td>Research Methods *</td>
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<td>Statistical Methods w/ Lab</td>
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<td>SW 410</td>
<td>Senior Research Project II</td>
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Field Practicum Sequence (16 hours/week or 240 hours/semester)
- SW 401 Social Work Field Practicum I | 4 |
- SW 402 Social Work Field Practicum II | 4 |
- SW 403 Senior Field Seminar I | 2 |
- SW 404 Senior Field Seminar II | 2 |

**Total Credits**

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<td>Principles of Human Biology</td>
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**TOTAL CREDITS**

122
### DUAL MAJOR IN SOCIAL WORK/PSYCHOLOGY

Students may elect to dual major in social work and psychology. This is accomplished by using free electives to complete requirements for the psychology major. Students who follow the curriculum below receive a BSW degree in social work and a BA in psychology.

**CURRICULUM—SOCIAL WORK/PSYCHOLOGY DUAL MAJOR**

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<td>GP 101 American Government &amp; Politics</td>
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<td>SW 410 Senior Research Project II</td>
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</table>

**TOTAL CREDITS**

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*Psychology electives can be found in the “Requirements—Psychology Major” section in the catalog on page 48. Students must select 2 electives from each electives cluster: Experimental Advanced Electives, Professional/Applied Advanced Electives, and Social/Developmental Advanced Electives. Please note that for the Social/Developmental electives, students must select one of the following: PSY 204, 205, 206, 210, or 245.

**Psychology Capstone courses are listed in the “Requirements—Psychology Major” section in the bulletin on page 47.

### DUAL MAJOR IN SOCIAL WORK/WOMEN’S STUDIES

Students may elect to dual major in social work and women’s studies. This is accomplished by using free electives to complete requirements for the women’s studies major. Students who follow the curriculum below receive a BSW degree in social work and a BA in women’s studies.

**CURRICULUM—SOCIAL WORK/ WOMEN’S STUDIES DUAL MAJOR**

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<th>Courses</th>
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<td>ANTH 105 Cultural Anthropology</td>
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<td>BIOL 107 Principles of Biological Systems w/ Lab or BIOL 107 Biology &amp; Society</td>
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</tr>
<tr>
<td></td>
<td>Free Elective</td>
<td>3</td>
</tr>
<tr>
<td>Senior Spring</td>
<td>SW 402 Social Work Field Practicum II</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>SW 404 Senior Field Seminar</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>SW 410 Senior Research Project II</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Free Elective</td>
<td>6</td>
</tr>
</tbody>
</table>

**TOTAL CREDITS**

123

*All women’s studies courses that are cross-listed with humanities courses count for general education humanities credit. Those cross-listed with science count for general education science credit. Those cross-listed with social science count for general education social science credit. For cross-listed courses, see the “Requirements—Women’s Studies Majors” section of the bulletin.

Notes continued on next page.
Please refer to the “General Education Distribution Requirements” under the Center for Social Work Education section of the bulletin for details.

**The dual major will fold the WS practicum (WS 394) into the SW practicum (SW 401), with the addition of a separate paper of at least 15 pages and regular meetings with the WS director, as well as a requirement that the SW practicum must involve work with women.**

**INSTITUTE FOR GRADUATE CLINICAL PSYCHOLOGY**

The Institute for Graduate Clinical Psychology offers a graduate course of studies and supervised experiences leading to the degree of doctor of psychology (PsyD). For information, consult the Institute for Graduate Clinical Psychology Catalog.

**INSTITUTE FOR PHYSICAL THERAPY EDUCATION**

The Institute for Physical Therapy Education offers a graduate course of studies and supervised experiences leading to the degree of doctor of physical therapy. For more information on the graduate physical therapy program, contact the associate dean of the Institute for Physical Therapy Education.

**PRE-PHYSICAL THERAPY PROGRAMS**

**THREE-PLUS-THREE GUARANTEED ADMISSIONS PROGRAM**

The following curriculum ladders enable undergraduate students majoring in either anthropology, biology, fine arts, psychology, or sociology to complete prerequisite coursework so as to be able to apply for admission to Widener’s graduate physical therapy program during their junior year. *Because of the intense demands of these curriculum ladders, the three-plus-three admissions program is recommended only for students with a record of outstanding academic achievement at the high school level.*

Those students accepted into the graduate program through this option begin the physical therapy curriculum in the fall of their fourth year of study at the university. Students following these curriculum ladders must meet all requirements of their selected major as described in the sections of this catalog pertaining to the Science Division and the Social Science Division of the College of Arts and Sciences. Students following these curriculum ladders must also satisfy the general education requirements of the College of Arts and Sciences. Please see the relevant sections of this Catalog for details. Students who successfully complete the prescribed program of study are guaranteed a seat in Widener University’s graduate physical therapy program.

To remain a part of the program, the student must maintain an overall GPA of 3.0. In addition, the student must complete all of the specific courses required for admission to the graduate physical therapy program with a minimum grade of B– and must meet periodically with a physical therapy faculty member designated as the professional education advisor. Students who fail to meet these requirements can still apply for admission to the graduate physical therapy program. See the section on “Alternative Admission” to the graduate physical therapy program that appears below.

By the fall of the student’s junior year, he or she must complete all required volunteer work in physical therapy practice sites. The student must also submit by January 30 of the junior year a complete application to the graduate physical therapy program, including one letter of recommendation from a physical therapist and responses to the essay questions. The letter of recommendation and the responses to the essay questions must meet the existing standards for all applicants to the program.

The courses that the “Three-Plus-Three” students take during the first year of the physical therapy program count toward requirements for the baccalaureate degree and toward requirements for the graduate physical therapy degree. The baccalaureate degree in anthropology, biology, psychology, or sociology is conferred upon completion of the first year of graduate study. Students pursuing a pre-physical therapy curriculum ladder should consult with an advisor in the physical therapy program in the School of Human Service Professions in addition to their science or social science faculty advisor.

**THREE-YEAR CURRICULUM: PRE-PHYSICAL THERAPY FOR ANTHROPOLOGY MAJORS**

<table>
<thead>
<tr>
<th>Credits</th>
<th>Freshman Fall</th>
<th>ANTH 105 Cultural Anthropology</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ANTH 106 Cultural Anthropology</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CHEM 101 Introduction to Chemistry I w/ Lab 103*</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ENGL 101 Composition &amp; Critical Thought*</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MATH 117 Elementary Functions</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Humanities Elective</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Physical Education Elective</td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td>Freshman Spring</td>
<td>ANTH 204 Physical Anthropology</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ANTH Area Course</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CHEM 102 Introduction to Chemistry II w/ Lab 104*</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Humanities Elective*</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sophomore Fall</td>
<td>ANTH Elective</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>BIOL 121 Anatomy &amp; Physiology I w/ Lab 123*</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PSY 105 Introduction to Psychology</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PSY 385 Statistics w/ Lab*</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Humanities Elective*</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sophomore Spring</td>
<td>ANTH 216 or 217 Archaeology</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ANTH 382 Ethnographic Method</td>
<td>3</td>
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</tr>
<tr>
<td></td>
<td>BIOL 230 Cells &amp; Genes*</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MATH 118 Elementary Calculus I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PSY Elective*</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Junior Fall</td>
<td>ANTH 207 Human Evolution &amp; Diversity</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ANTH 400 Senior Research I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ANTH Elective**</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ASC 400 Values Seminar</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PHYS 141 College Physics I w/ Lab 143*</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Physical Education Elective</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Junior Spring</td>
<td>ANTH 410 Senior Research I</td>
<td>3</td>
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<td>ANTH Elective**</td>
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<tr>
<td></td>
<td>Humanities Elective**</td>
<td>3</td>
<td></td>
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<tr>
<td></td>
<td>PHYS 142 College Physics II w/ Lab 144*</td>
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<tr>
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<td>PSY Elective*</td>
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</tr>
<tr>
<td></td>
<td>TOTAL CREDITS</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:** Courses taken in the student’s fourth year as part of the physical therapy curriculum will complete the requirement for 18 credits of behavioral science advanced electives.

*Prerequisite course required for admission to the graduate physical therapy program. Students must complete these courses with a minimum grade of B–. If the course sequence shown in this ladder is not followed, the specific prerequisite courses required for admission may differ from those shown here. Please consult your advisor.

**Courses that may count as prerequisite courses for admission to the graduate physical therapy program include the last six credits of psychology courses, the last six credits of humanities courses, and the last three credits of either sociology or anthropology courses completed prior to application to the graduate program. Students must complete all prerequisites with a minimum grade of B–.**
### THREE-YEAR CURRICULUM: PRE-PHYSICAL THERAPY FOR BA IN BIOLOGY MAJORS

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Freshman Fall</strong></td>
<td>14.5</td>
</tr>
<tr>
<td>BIOL 161 Biological Concepts I</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 145/147 General Chemistry w/ Lab I†</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 101 Composition &amp; Critical Thought†</td>
<td>3</td>
</tr>
<tr>
<td>PSY 105 Introduction to Psychology†</td>
<td>3</td>
</tr>
<tr>
<td>Physical Education Elective</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>Freshman Spring</strong></td>
<td>14.5</td>
</tr>
<tr>
<td>BIOL 162 Biological Concepts II</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 146/148 General Chemistry w/ Lab II†</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 102 Advanced Composition &amp; Literature†</td>
<td>3</td>
</tr>
<tr>
<td>HUM/SSCI Elective†</td>
<td>3</td>
</tr>
<tr>
<td>Physical Education Elective</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>Sophomore Fall</strong></td>
<td>15/16</td>
</tr>
<tr>
<td>BIOL 261 Biological Concepts III</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 255/257 Organic Chemistry w/ Lab I†</td>
<td>4</td>
</tr>
<tr>
<td>MATH 118 Elementary Calculus or MATH 131 Calculus I</td>
<td>3/4</td>
</tr>
<tr>
<td>HUM/SSCI Elective† or BA Coursework</td>
<td>3</td>
</tr>
<tr>
<td><strong>Sophomore Spring</strong></td>
<td>16</td>
</tr>
<tr>
<td>BIOL 262 Principles of Modern Genetic Analysis</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 299 Research Methods†</td>
<td>3</td>
</tr>
<tr>
<td>BA Coursework</td>
<td>3–6</td>
</tr>
<tr>
<td>HUM/SSCI Elective† or BA Coursework</td>
<td>3–6</td>
</tr>
<tr>
<td><strong>Junior Fall</strong></td>
<td>16–19</td>
</tr>
<tr>
<td>PHYS 141 College Physics I w/ Lab 143†</td>
<td>5</td>
</tr>
<tr>
<td>BIOL Anatomy Elective†</td>
<td>4</td>
</tr>
<tr>
<td>BIOL Elective†</td>
<td>4</td>
</tr>
<tr>
<td>HUM/SSCI Elective† or BA Coursework†</td>
<td>3–6</td>
</tr>
<tr>
<td><strong>Junior Spring</strong></td>
<td>18</td>
</tr>
<tr>
<td>PHYS 142 College Physics II w/ Lab 144†</td>
<td>5</td>
</tr>
<tr>
<td>BIOL Physiology Elective†</td>
<td>4</td>
</tr>
<tr>
<td>HUM/SSCI Elective† or BA Coursework†</td>
<td>6</td>
</tr>
<tr>
<td>ASC 400 Values Seminar</td>
<td>3</td>
</tr>
</tbody>
</table>

*If student does not matriculate into the graduate physical therapy program, the following courses are required to complete the degree.*

- **Fourth Year Fall**
  - BIOL Electives*                                                    | 8       |
  - HUM/SSCI Elective                                                  | 3       |
  - BA Coursework or Free Electives                                    | 3–6     |

**Fourth Year Spring**

- BIOL Elective*                                                      | 4       |
- BA Coursework or Free Electives                                      | 12      |

**TOTAL CREDITS** 127–128

*Coursework (18–24 credits) approved by the biology faculty. This coursework should be designed to serve the student’s educational objectives. The coursework should include at least 12 credits at an advanced (200 or above) level. For pre-physical therapy, the Department of Biology recommends a minor in psychology, anthropology, or sociology. However, student-designed curricula are strongly encouraged. Coursework satisfying the BA in Biology coursework category may also satisfy social science or humanities general education requirements. Note: Widener University’s graduate physical therapy program requires 6 credits of psychology and 3 credits of either sociology or anthropology.

*Six biology electives are required and must include at least one from each of the following lists of courses:

- Organismal Biology: 308, 309, 303, 307, 315, 325, 317, 327
- Cell and Molecular Biology: 302, 306, 310, 319, 320, 405
- Interorganismal Biology: 301, 313, 401, 419

Students with a science GPA of at least 2.3 may take BIOL 499 (at least 3 semester hours) as one of their three unspecified biology electives. BCH 451/453 may also be taken as unspecified biology electives. For students with a strong interest in biology, it is recommended that additional advanced biology courses be considered for free electives.

†Prerequisite course required for admission to the graduate physical therapy program. Students must complete these courses with a minimum grade of B–. If the course sequence shown in this ladder is not followed, the specific prerequisite courses required for admission may differ from those shown here. Please consult your advisor.

Courses that may count as prerequisite courses for admission to the graduate physical therapy program include the last six credits of psychology courses, the last six credits of humanities courses, and the last three credits of either sociology or anthropology courses completed prior to application to the graduate program. Students must complete all prerequisites with a minimum grade of B–.

Biology students in the first year of the graduate physical therapy program use BIOL 505 as their Cell and Molecular Biology elective. In addition, biology elective credit is received for PT 706, 708, and 709. Lastly, PT 712 can be counted as a social science elective for the general education requirements.
### THREE-YEAR CURRICULUM: PRE-PHYSICAL THERAPY FOR BS IN BIOLOGY MAJORS

<table>
<thead>
<tr>
<th>Term</th>
<th>Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Freshman Fall</strong></td>
<td>BIOL 161 Biological Concepts I</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>CHEM 145/147 General Chemistry w/ Lab I†</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>ENGL 101 Composition &amp; Critical Thought†</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>PSY 105 Introduction to Psychology†</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Physical Education Elective</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>Freshman Spring</strong></td>
<td>BIOL 162 Biological Concepts II</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>CHEM 146/148 General Chemistry w/ Lab II†</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>ENGL 102 Advanced Composition &amp; Literature</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>HUM/SSCI Elective†</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Physical Education Elective</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>Sophomore Fall</strong></td>
<td>BIOL 261 Biological Concepts III</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>CHEM 255/257 Organic Chemistry w/ Lab I</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>MATH 131 or 141 Calculus I</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>HUM/SSCI Elective†</td>
<td>3</td>
</tr>
<tr>
<td><strong>Sophomore Spring</strong></td>
<td>BIOL 262 Principles of Modern Genetic Analysis</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>CHEM 256/258 Organic Chemistry w/ Lab II</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>MATH 132 or 142 Calculus II</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>BIOL 299 Research Methods†</td>
<td>3</td>
</tr>
<tr>
<td><strong>Junior Fall</strong></td>
<td>PHYS 141/143 College Physics w/ Lab I†</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>HUM/SSCI Electives†</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>BIOL Anatomy Elective†</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>BIOL Interorganismal Elective†</td>
<td>4</td>
</tr>
<tr>
<td><strong>Junior Spring</strong></td>
<td>PHYS 142/144 College Physics w/ Lab II†</td>
<td>5</td>
</tr>
<tr>
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<td>HUM/SSCI Electives†</td>
<td>6</td>
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<tr>
<td></td>
<td>BIOL Physiology Elective†</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>ASC 400 Values Seminar</td>
<td>3</td>
</tr>
</tbody>
</table>

Qualified students admitted to the graduate program in physical therapy will take the first year of courses prescribed by that program. These graduate courses will include histology, physiology, gross anatomy, and neuroscience. Biology majors who have been admitted to the graduate program in physical therapy in their third year of study will complete their undergraduate study with these courses. They will also receive credit for one social science elective based on the first year physical therapy curriculum. Biology majors who have not been admitted to the graduate program will complete their undergraduate studies with the elective courses listed below.

#### Fourth Year Fall
- BIOL Electives*                                | 8       |
- Free Electives                                  | 6       |

#### Fourth Year Spring
- BIOL Electives*                                | 8       |
- Free Electives                                  | 6       |

**TOTAL CREDITS** 126

**NOTE:** Additional courses taken in the student’s fourth year as part of the physical therapy curriculum will complete the course requirements for the biology major.

*Seven biology electives are required and must include at least one from each of the following lists of courses:

- Organismal Biology: 308, 309, 303, 307, 315, 325, 317, 327
- Interorganismal Biology: 301, 313, 401, 419

The unspecified biology elective taken in the junior year must be from the Interorganismal category listed above. BCH 451/453 may also be taken as unspecified biology electives.

†Prerequisite course required for admission to the graduate physical therapy program. Students must complete these courses with a minimum grade of B–. If the course sequence shown in this ladder is not followed, the specific prerequisite courses required for admission may differ from those shown here. Please consult your advisor.

Courses that may count as prerequisite courses for admission to the graduate physical therapy program include the last six credits of psychology courses, the last six credits of humanities courses, and the last three credits of either sociology or anthropology courses completed prior to application to the graduate program. Students must complete all prerequisites with a minimum grade of B–.

Students with a science GPA of at least 2.3 may take BIOL 499 (at least 3 semester hours) as one of their 4 unspecified biology electives. For students with a strong interest in biology, it is recommended that advanced biology courses be considered for free electives.

Biology students in the first year of the graduate physical therapy program use BIOL 505 as their Cell and Molecular Biology elective. In addition, biology elective credit is received for PT 706, 708, and 709. Lastly, PT 712 can be counted as a social science elective for the general education requirements.
THREE-YEAR CURRICULUM: PRE-PHYSICAL THERAPY FOR FINE ARTS MAJORS

<table>
<thead>
<tr>
<th>Semester</th>
<th>Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman Fall</td>
<td>AH 101 Art History I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ENGL 101 Composition &amp; Critical Thought</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MUS 101 History &amp; Literature of Music</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>CHEM 101 Introduction to Chemistry I w/ Lab 103*</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>PSY 105 Introduction to Psychology*</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Physical Education Elective</td>
<td>0.5</td>
</tr>
<tr>
<td>Freshman Spring</td>
<td>ARTS 101 Intro. to Fine Arts</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>BIOL 121 Anatomy &amp; Physiology I w/ Lab 123*</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>CHEM 102 Introduction to Chemistry II w/ Lab 104*</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>ENGL 102 Advanced Composition &amp; Literature</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>SOC or ANTH Elective*</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Physical Education Elective</td>
<td>0.5</td>
</tr>
<tr>
<td>Sophomore Fall</td>
<td>BIOL 122 Anatomy &amp; Physiology II w/ Lab 124*</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>MATH 117 Elementary Functions</td>
<td>3</td>
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<tr>
<td></td>
<td>300-level art history</td>
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</tr>
<tr>
<td></td>
<td>300-level music history</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Practicum</td>
<td>3</td>
</tr>
<tr>
<td>Sophomore Spring</td>
<td>BIOL 230 Cells &amp; Genes*</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>PHIL 380 or 381 Aesthetics or Honors Aesthetics</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>300-level art history</td>
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<td>300-level music history</td>
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<td></td>
<td>Practicum</td>
<td>3</td>
</tr>
<tr>
<td>Junior Fall</td>
<td>ARTS 409 Senior Seminar</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>PHYS 141 College Physics I* w/ Lab 143</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>300-level AH, 300-level MUS, or ENGL 325, 336, 338, 362*</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>PSY Elective*</td>
<td>3</td>
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<tr>
<td>TOTAL CREDITS</td>
<td></td>
<td>100/101</td>
</tr>
</tbody>
</table>

*Prerequisite course required for admission to the graduate physical therapy program. Students must complete these courses with a minimum grade of B–. If the course sequence shown in this ladder is not followed, the specific prerequisite courses required for admission may differ from those shown here. Please consult your advisor.

Courses that may count as prerequisite courses for admission to the graduate physical therapy program include the last six credits of psychology courses, the last six credits of humanities courses, and the last three credits of either sociology or anthropology courses completed prior to application to the graduate program. Students must complete all prerequisites with a minimum grade of B–.

THREE-YEAR CURRICULUM: PRE-PHYSICAL THERAPY FOR PSYCHOLOGY MAJORS

<table>
<thead>
<tr>
<th>Semester</th>
<th>Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman Fall</td>
<td>PSY 105 Introduction to Psychology</td>
<td>3</td>
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<tr>
<td></td>
<td>ENGL 101 Composition &amp; Critical Thought</td>
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<tr>
<td></td>
<td>Humanities Elective</td>
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<tr>
<td></td>
<td>CHEM 101 Introduction to Chemistry I w/ Lab 103*</td>
<td>4</td>
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<td>MATH 117 Elementary Functions</td>
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<tr>
<td>Freshman Spring</td>
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<td></td>
<td>CHEM 102 Introduction to Chemistry II w/ Lab 104*</td>
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<td>PSY Elective†</td>
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<td></td>
<td>BIOL 121 Anatomy &amp; Physiology I w/ Lab 123*</td>
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<tr>
<td>Sophomore Fall</td>
<td>ANTH 105 Cultural Anthropology*</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>or SO 105 Introduction to Sociology*</td>
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<tr>
<td></td>
<td>BIOL 122 Anatomy &amp; Physiology II w/ Lab 124*</td>
<td>4</td>
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<tr>
<td></td>
<td>PSY 385 Statistics w/ Lab</td>
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<tr>
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<td>PSY Electives†</td>
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<td>Sophomore Spring</td>
<td>PSY Elective*†</td>
<td>3</td>
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<tr>
<td></td>
<td>PSY 387 Research Design w/ Lab</td>
<td>4</td>
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<tr>
<td></td>
<td>MATH 118 Elementary Calculus I</td>
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</tr>
<tr>
<td></td>
<td>BIOL 230 Cells &amp; Genes*</td>
<td>4</td>
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<tr>
<td></td>
<td>Humanities Elective*</td>
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<tr>
<td>Junior Fall</td>
<td>PHYS 141 College Physics I* w/ Lab 143</td>
<td>5</td>
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<tr>
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<td>PSY 409 Senior Research</td>
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<tr>
<td></td>
<td>PSY 377 or 330 History &amp; Systems</td>
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<td>PSY Elective*</td>
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<td>Humanities Elective*</td>
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<td>TOTAL CREDITS</td>
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*Prerequisite course required for admission to the graduate physical therapy program. Students must complete these courses with a minimum grade of B–. If the course sequence shown in this ladder is not followed, the specific prerequisite courses required for admission may differ from those shown here. Please consult your advisor.

Courses that may count as prerequisite courses for admission to the graduate physical therapy program include the last six credits of psychology courses, the last six credits of humanities courses, and the last three credits of either sociology or anthropology courses completed prior to application to the graduate program. Students must complete all prerequisites with a minimum grade of B–.

†See psychology major for distribution requirements.

Note: The advanced laboratory elective is waived for students enrolled in the three-year pre-physical therapy program for psychology majors. In the event that a student opts to complete a fourth year as an undergraduate in the pre-physical therapy or psychology programs, the waiver will no longer apply and an advanced laboratory elective will be required in order to graduate.
### THREE-YEAR CURRICULUM: PRE-PHYSICAL THERAPY FOR SOCIOLOGY MAJORS

<table>
<thead>
<tr>
<th>Course</th>
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<tr>
<td>CHEM 101 Introduction to Chemistry I w/ Lab 103*</td>
<td>4</td>
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<tr>
<td>PSY 105 Introduction to Psychology*</td>
<td>3</td>
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<tr>
<td>SOC 105 Introduction to Sociology</td>
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<tr>
<td>ENGL 101 Composition &amp; Critical Thought*</td>
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<tr>
<td>Humanities Elective†</td>
<td>3</td>
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<tr>
<td>Physical Education Elective</td>
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<td><strong>Total Credits</strong></td>
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**Freshman Spring:**

<table>
<thead>
<tr>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>CHEM 102 Introduction to Chemistry II w/ Lab 104*</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 121 Anatomy &amp; Physiology I w/ Lab 123*</td>
<td>4</td>
</tr>
<tr>
<td>Sociology Advanced Electives materials</td>
<td>6</td>
</tr>
<tr>
<td>MATH 117 Elementary Functions</td>
<td>3</td>
</tr>
<tr>
<td>Physical Education Elective</td>
<td>0.5</td>
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<tr>
<td><strong>Total Credits</strong></td>
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**Sophomore Fall:**

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>BIOL 122 Anatomy &amp; Physiology II w/ Lab 124*</td>
<td>4</td>
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<tr>
<td>PSY 385 Statistics w/ Lab*</td>
<td>4</td>
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<tr>
<td>Humanities Elective*</td>
<td>6</td>
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<tr>
<td>Sociology Advanced Elective</td>
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**Sophomore Spring:**

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>BIOL 230 Cells &amp; Genes*</td>
<td>4</td>
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<tr>
<td>MATH 118 Elementary Calculus I</td>
<td>3</td>
</tr>
<tr>
<td>SOC 382 Research Design</td>
<td>3</td>
</tr>
<tr>
<td>SOC 355 Social Theory</td>
<td>3</td>
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**Junior Fall:**

<table>
<thead>
<tr>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>PHYS 141 College Physics I w/ Lab 143*</td>
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<tr>
<td>SOC 409 Senior Research I</td>
<td>3</td>
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<tr>
<td>Humanities Elective*</td>
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<tr>
<td>ASC 400 Values Seminar</td>
<td>3</td>
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<tr>
<td>Sociology Advanced Elective*</td>
<td>3</td>
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<td><strong>Total Credits</strong></td>
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**Junior Spring:**

<table>
<thead>
<tr>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>PHYS 142 College Physics II w/ Lab 144*</td>
<td>5</td>
</tr>
<tr>
<td>SOC 405</td>
<td>3</td>
</tr>
<tr>
<td>SOC 410 Senior Research II</td>
<td>3</td>
</tr>
<tr>
<td>Sociology Advanced Elective</td>
<td>3</td>
</tr>
<tr>
<td>Free Elective</td>
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<tr>
<td><strong>Total Credits</strong></td>
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**TOTAL CREDITS:**

<table>
<thead>
<tr>
<th>Courses</th>
<th>Credits</th>
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<tbody>
<tr>
<td><strong>Freshman Fall</strong></td>
<td>16.5</td>
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<tr>
<td><strong>Sophomore Fall</strong></td>
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<tr>
<td><strong>Junior Fall</strong></td>
<td>17</td>
</tr>
<tr>
<td><strong>Junior Spring</strong></td>
<td>17</td>
</tr>
<tr>
<td><strong>TOTAL CREDITS</strong></td>
<td><strong>101</strong></td>
</tr>
</tbody>
</table>

*Prerequisite course required for admission to the graduate physical therapy program. Students must complete these courses with a minimum grade of B–. If the course sequence shown in this ladder is not followed, the specific prerequisite courses required for admission may differ from those shown here. Please consult your advisor.*

Courses that may count as prerequisite courses for admission to the graduate physical therapy program include the last six credits of psychology courses, the last six credits of humanities courses, and the last three credits of either sociology or anthropology courses completed prior to application to the graduate program. Students must complete all prerequisites with a minimum grade of B–.

†One humanities elective must be from the discipline of either history or philosophy in order to fulfill the related fields requirement of the major.

### ALTERNATE ADMISSION TO THE GRADUATE PHYSICAL THERAPY PROGRAM

Students who fail to meet the requirements for continuing in either the three-plus-three or four-plus-three guaranteed admissions program may apply for admission to the graduate physical therapy program following the requirements that apply to all other applicants to the program. For more information on admission to the graduate physical therapy program via the regular admissions process, please contact the associate dean of the Institute for Physical Therapy Education.

In addition to the three-plus-three program, Widener University offers an alternative four-plus-three program for pre-physical therapy students. The four-plus-three program provides for a less intensive schedule of courses, thereby increasing the opportunity for students to broaden their undergraduate experiences and to complete the program successfully. The following curriculum ladders for majors in anthropology, biology, psychology, and sociology include the prerequisite coursework to be considered for admission to Widener University’s physical therapy program. The requirements for remaining a part of this program are the same as those described above in the section on the three-plus-three admissions program. Students who successfully complete the prescribed program of study are guaranteed a seat on Widener University’s graduate physical therapy program. Students who fail to meet the requirements for this program can still apply to the graduate physical therapy program. See the section on “Alternate Admission” to the graduate physical therapy program that appears on page 107.

In this program, students apply for admission to the graduate physical therapy program in their senior year. By the fall of the senior year, the student must complete all required volunteer work in physical therapy practice sites. The student must also submit by January 30 of the senior year a complete application to the graduate physical therapy program, including one letter of recommendation from a physical therapist and responses to the essay questions. The letter of recommendation and the responses to the essay questions must meet the existing standards for all applicants to the program. Students pursuing these curriculum ladders should consult with the advisors in the physical therapy program, in addition to their science or social science faculty advisor.

### ALTERNATE ADMISSION TO THE GRADUATE PHYSICAL THERAPY PROGRAM

Students who fail to meet the requirements for continuing in either the three-plus-three or four-plus-three guaranteed admissions program may apply for admission to the graduate physical therapy program following the requirements that apply to all other applicants to the program. For more information on admission to the graduate physical therapy program via the regular admissions process, please contact the associate dean of the Institute for Physical Therapy Education.
**FOUR-YEAR CURRICULUM: PRE-PHYSICAL THERAPY FOR ANTHROPOLOGY MAJORS**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Courses</th>
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<tbody>
<tr>
<td><strong>Freshman Fall</strong></td>
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<tr>
<td>ANTH 105 Cultural Anthropology ........................................ 3</td>
<td></td>
</tr>
<tr>
<td>CHEM 101 Introduction to Chemistry I w/ Lab 103* ................... 4</td>
<td></td>
</tr>
<tr>
<td>ENGL 101 Composition &amp; Critical Thought* ......................... 3</td>
<td></td>
</tr>
<tr>
<td>FRS 101 (optional) or MATH 101 (if needed) ......................... 1/3</td>
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</tr>
<tr>
<td>HIST/AH Elective ....... 3</td>
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<tr>
<td>Physical Education Elective ........................................... 0.5</td>
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<tr>
<td><strong>Freshman Spring</strong></td>
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<tr>
<td>ANTH 204 Physical Anthropology ........................................ 3</td>
<td></td>
</tr>
<tr>
<td>CHEM 102 Introduction to Chemistry II w/ Lab 104* ............... 4</td>
<td></td>
</tr>
<tr>
<td>PSY 105 Introduction to Psychology** ............................. 3</td>
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<td>Humanities Elective 2 ................................................ 3</td>
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<tr>
<td>Physical Education Elective ........................................... 0.5</td>
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<td><strong>Sophomore Fall</strong></td>
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<tr>
<td>ANTH Area Course ....... 3</td>
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<tr>
<td>ANTH Elective 1 ...... 3</td>
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<td>PSY Elective 1** .... 3</td>
<td></td>
</tr>
<tr>
<td>Free Elective ...................... 3</td>
<td></td>
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<tr>
<td><strong>Sophomore Spring</strong></td>
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<tr>
<td>ANTH 216 or 217 Archaeology (WE) ..................................... 3</td>
<td></td>
</tr>
<tr>
<td>BIOL 121 Anatomy &amp; Physiology I w/ Lab 123* ....................... 4</td>
<td></td>
</tr>
<tr>
<td>MATH 118 Elementary Calculus I ......................................... 3</td>
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</tr>
<tr>
<td>Humanities Elective 3 ................................................ 3</td>
<td></td>
</tr>
<tr>
<td>Free Elective ...................... 3</td>
<td></td>
</tr>
<tr>
<td><strong>Junior Fall</strong></td>
<td></td>
</tr>
<tr>
<td>ANTH 208 Race &amp; Racism ................................................ 3</td>
<td></td>
</tr>
<tr>
<td>BIOL 122 Anatomy &amp; Physiology II w/ Lab 124* ....................... 4</td>
<td></td>
</tr>
<tr>
<td>PSY 385 Statistics w/ Lab* ........................................... 4</td>
<td></td>
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<td>ANTH Elective 2** ........ 3</td>
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<tr>
<td><strong>Junior Spring</strong></td>
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<tr>
<td>ANTH 382 Ethnographic Method (WE) .................................... 3</td>
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</tr>
<tr>
<td>BIOL 230 Cells &amp; Genes* ........................................... 4</td>
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<tr>
<td>Humanities Elective 4 ................................................ 3</td>
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<td>Free Electives .............. 6</td>
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<td><strong>Senior Fall</strong></td>
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<td>ANTH 409 Senior Research I ........................................... 3</td>
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<td>ASC 400 Values Seminar (WE) ......................................... 3</td>
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<tr>
<td>PHYS 141 College Physics I w/ Lab 143* ............................. 4</td>
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<tr>
<td>ANTH Elective 3* .................. 3</td>
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<tr>
<td>Free Elective .......... 3</td>
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<td><strong>Senior Spring</strong></td>
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<tr>
<td>ANTH 410 Senior Research II ........................................... 3</td>
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<tr>
<td>PHYS 142 College Physics II w/ Lab 144* ............................. 4</td>
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<td>Humanities Elective (300-Level, WE)** .......................... 3</td>
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**TOTAL CREDITS** 121–124

*Prerequisite course required for admission to the graduate physical therapy program. Students must complete these courses with a minimum grade of B–. If the course sequence shown in this ladder is not followed, the specific prerequisite courses required for admission may differ from those shown here. Please consult your advisor.

**Courses that may count as prerequisite courses for admission to the graduate physical therapy program include the last six credits of psychology courses, the last six credits of humanities courses, and the last three credits of either sociology or anthropology courses completed prior to application to the graduate program. Students must complete all prerequisites with a minimum grade of B–.

**FOUR-YEAR CURRICULUM: PRE-PHYSICAL THERAPY FOR BA IN BIOLOGY MAJORS**

<table>
<thead>
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<th>Semester</th>
<th>Courses</th>
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<tbody>
<tr>
<td><strong>Freshman Fall</strong></td>
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</tr>
<tr>
<td>BIOL 161 Biological Concepts I ....................................... 4</td>
<td></td>
</tr>
<tr>
<td>CHEM 145/147 General Chemistry w/ Lab † .......................... 4</td>
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</tr>
<tr>
<td>ENGL 101 Composition &amp; Critical Thought†† .................. 3</td>
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</tr>
<tr>
<td>HUM/SSCI Elective†† ........................................... 3</td>
<td></td>
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<tr>
<td>Physical Education Elective ........................................... 0.5</td>
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<tr>
<td><strong>Freshman Spring</strong></td>
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<tr>
<td>BIOL 162 Biological Concepts II ..................................... 4</td>
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<tr>
<td>CHEM 146/148 General Chemistry w/ Lab †† ....................... 4</td>
<td></td>
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<tr>
<td>ENGL 102 Advanced Composition &amp; Literature†† .................. 3</td>
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<td>HUM/SSCI Elective†† ........................................... 3</td>
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<td>Physical Education Elective ........................................... 0.5</td>
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<tr>
<td>BIOL 261 Biological Concepts III ................................ 4</td>
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<td>CHEM 255/257 Organic Chemistry w/ Lab I ......................... 5</td>
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<td>MATH 120 or 131 Precalculus or Calculus I ...................... 3/4</td>
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<td>HUM/SSCI Elective†† ........................................... 3</td>
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<tr>
<td>BIOL 262 Principles of Modern Genetic Analysis .................. 4</td>
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<td>BIOL 299 Research Methods†† ...................................... 3</td>
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<td>BA Coursework†† ............................................. 6–9</td>
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<td>HUM/SSCI Elective†† ........................................... 3</td>
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<td><strong>Junior Fall</strong></td>
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<tr>
<td>PHYS 141/143 College Physics w/ Lab †† ......................... 5</td>
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</tr>
<tr>
<td>HUM/SSCI Elective†† or BA Coursework†† ...................... 3</td>
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<tr>
<td>BIOL Anatomy Elective†† ........................................ 4</td>
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<tr>
<td>BIOL Elective or Free Elective* †† ................................ 3/4</td>
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<td><strong>Junior Spring</strong></td>
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</tr>
<tr>
<td>PHYS 142/144 College Physics w/ Lab †† ......................... 5</td>
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<tr>
<td>HUM/SSCI Elective†† or BA Coursework†† ...................... 3</td>
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</tr>
<tr>
<td>BIOL Physiology Elective†† ........................................ 4</td>
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<td>BIOL Elective or Free Elective* †† ................................ 3/4</td>
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<tr>
<td><strong>Senior Fall</strong></td>
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<tr>
<td>BIOL Electives, Free Electives* ††, or BA Coursework†† ....... 12/9</td>
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<td>HUM/SSCI Electives†† ........................................... 6</td>
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<td>ASC 400 ............................................................. 3</td>
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<tr>
<td>BIOL Electives, Free Electives* ††, or BA Coursework†† ....... 12/9</td>
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<tr>
<td>Free Elective ............. 3</td>
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</tbody>
</table>

**TOTAL CREDITS** 121–129

*A total of 6 biology electives are required, which must include at least one from each of the following lists of courses:

- Interorganismal Biology: 301, 313, 401, 419

The unspecified biology elective taken in the junior year must be from the Interorganismal category listed above. BCH 451/453 may also be taken as an unspecified biology electives.

†Prerequisite course required for admission to the graduate physical therapy program. Students must complete these courses with a minimum grade of B–. If the course sequence shown in this ladder is not followed, the specific prerequisite courses required for admission may differ from those shown here. Please consult your advisor.

†† Courses that may count as prerequisite courses for admission to the graduate physical therapy program include the last six credits of psychology courses, the last six credits of humanities courses, and the last three credits of either sociology or anthropology courses completed prior to application to the graduate program. Students must complete all prerequisites with a minimum grade of B–.

Students with a science GPA of at least 2.3 may take BIOL 499 (at least 3 semester hours) as one of their four unspecified biology electives. For students with a strong interest in biology, it is recommended that additional advanced biology courses be considered for free electives.
### FOUR-YEAR CURRICULUM: PRE-PHYSICAL THERAPY FOR BS IN BIOLOGY MAJORS

<table>
<thead>
<tr>
<th>Term</th>
<th>Course</th>
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<tr>
<td>Freshman Fall</td>
<td>BIOL 161 Biological Concepts I</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>CHEM 145/147 General Chemistry w/ Lab</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>ENGL 101 Composition &amp; Critical Thought</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>HUM/SSCI Elective</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Physical Education Elective</td>
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<tr>
<td>Freshman Spring</td>
<td>BIOL 162 Biological Concepts II</td>
<td>4</td>
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<tr>
<td></td>
<td>CHEM 146/148 General Chemistry w/ Lab II</td>
<td>4</td>
</tr>
<tr>
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<td>ENGL 102 Advanced Composition &amp; Literature</td>
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<td>BIOL 261 Biological Concepts III</td>
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<td>CHEM 255/257 Organic Chemistry w/ Lab I</td>
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<td>MATH 131 or 141 Calculus I</td>
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<td>BIOL 262 Principles of Modern Genetic Analysis</td>
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<td>CHEM 256/258 Organic Chemistry w/ Lab II</td>
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**TOTAL CREDITS**: 121–129

*A total of 7 biology electives are required, which must include at least one from each of the following lists of courses:

- Interorganismal Biology: 301, 313, 401, 419

The unspecified biology elective taken in the junior year must be from the Interorganismal category listed above. BCH 451/453 may also be taken as unspecified biology electives.

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Students with a science GPA of at least 2.3 may take BIOL 499 (at least 3 semester hours) as one of their four unspecified biology electives. For students with a strong interest in biology, it is recommended that additional advanced biology courses be considered for free electives.

### FOUR-YEAR CURRICULUM: PRE-PHYSICAL THERAPY FOR FINE ARTS MAJORS

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<td>ENGL 101 Composition &amp; Critical Thought*</td>
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<td>PSY 105 Introduction to Psychology*</td>
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<td>CHEM 102 Introduction to Chemistry II w/ Lab 104*</td>
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**TOTAL CREDITS**: 122

*Prerequisite course required for admission to the graduate physical therapy program. Students must complete these courses with a minimum grade of B−. If the course sequence shown in this ladder is not followed, the specific prerequisite courses required for admission may differ from those shown here. Please consult your advisor.

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FOUR-YEAR CURRICULUM: PRE-PHYSICAL THERAPY FOR PSYCHOLOGY MAJORS

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<td>ANTH 105 Cultural Anthropology</td>
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<td>ENGL 101 Composition &amp; Critical Thought*</td>
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<td>FRS 101 (optional) or MATH 101 (if necessary)</td>
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<td>CHEM 102 Introduction to Chemistry II w/ Lab 104*</td>
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*Prerequisite course required for admission to the graduate physical therapy program. Students must complete these courses with a minimum grade of B–. If the course sequence shown in this ladder is not followed, the specific prerequisite courses required for admission may differ from those shown here. Please consult your advisor.

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†See psychology major for distribution requirements.

FOUR-YEAR CURRICULUM: PRE-PHYSICAL THERAPY FOR SOCIOLOGY MAJORS

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<td>SOC 405 Sociology Seminar</td>
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School of Nursing

Accreditation: The School of Nursing of Widener University is fully accredited by the Commission on Collegiate Nursing Education and approved by the State Board of Nurse Examiners of the Commonwealth of Pennsylvania.

Commission on Collegiate Nursing Education (CCNE)
One Dupont Circle, Suite 530, Washington, DC 20036-1120; (202) 887-6791
Commonwealth of Pennsylvania, State Board of Nursing
P.O. Box 2649, Harrisburg, PA 17105-2649; (717) 783-7142

ORGANIZING FRAMEWORK

INTRODUCTION

The organizing framework of the Widener University School of Nursing is derived from the unique mission and vision of the university and the School of Nursing, which addresses the needs of our community of interest. It embraces professional nursing standards and the essential concepts as articulated by the American Association of Colleges of Nursing (AACN) in the AACN Essentials documents for undergraduate and graduate education. Foundational to the organizing framework are the metaparadigm concepts: human being, environment, health, and nursing, which are incorporated throughout the curricula in all programs.

- The bachelor of science in nursing (BSN) program prepares graduates to function as generalists in multiple settings.
- The master of science in nursing (MSN) program prepares graduates for leadership in diverse health care settings as advanced practitioners and clinical nurse specialists.
- The doctor of philosophy (PhD) program prepares scholars for educational leadership roles, disciplined inquiry, and the dissemination of new knowledge.

DEFINITION OF AACN ESSENTIAL CONCEPTS

Liberal Education

The baccalaureate nursing curriculum provides a liberal education that includes broad exposure to multiple disciplines and ways of knowing, as well as in-depth study in the discipline of nursing. Learning outcomes include knowledge of human culture and the natural world gleaned from science, social science, mathematics, humanities, and the arts. Intellectual and practical skills, including written and oral communication, inquiry, critical and creative thinking, quantitative literacy, information literacy, teamwork, and integration of learning are additional outcomes of a liberal education. Civic responsibility and engagement demonstrate individual and social responsibility. Liberal education also fosters ethical reasoning, knowledge of diverse cultures, and a propensity for lifelong learning. The graduate curriculum builds upon the liberal education acquired at the baccalaureate level. (AACN, 2008; AAC&U, 2005)

Role

Nursing education prepares its graduates to assume the role of the professional nurse—generalist at the baccalaureate level and advanced practice nurse at the graduate level. Nurses are prepared to be providers of care, designers/managers/ coordinators of care, and active members of the nursing profession within a global community. Nurses cooperate and collaborate with consumers, educators, and other health professionals in multidisciplinary settings to promote, maintain, and restore health.

As a provider of care to diverse populations in a global community, the professional nurse must have a theoretical and evidence based body of knowledge. Nurses are prepared to transform the health and quality of life of diverse communities using professional ethical frameworks and enhanced knowledge and by providing culturally sensitive care. As an advocate, the nurse engages in partnership with patients/clients—whether individuals, families, groups, or communities—to deliver high quality care, evaluate care outcomes, provide leadership in improving care, promote reduction of health disparities, and foster active participation in health care decisions. As an educator, the nurse must help individuals, families, groups, and communities acquire, interpret, and use information related to health care, illness, and health promotion.

The nurse must be a health care designer, manager, and coordinator using research findings and guided by evidence based outcomes. As a designer of care, the nurse must design and implement high quality, evidence based, cost-effective care guiding the patient/client through the health care system. As a manager of care, the nurse must be a supervisor and evaluator of other health care providers; an interpreter of information related to health care, illness, and health promotion; and an information manager, assisting patients/clients in accessing, understanding, evaluating, and applying health related information. As coordinator, the nurse manages care to meet the needs of vulnerable populations to maximize independence and quality of life.

Core Competencies

Professional nursing requires strong critical thinking, communication, assessment, and technical skills as a foundation for the development of sound clinical judgment and decision-making. The nursing curricula are designed to provide graduates with coursework and clinical experiences that promote the development of these essential core competencies.

Core Knowledge

Nursing core knowledge builds upon the nursing essential core competencies. An appropriate set of values, an ethical framework, knowledge and action within the political and regulatory processes defining health care delivery and systems of care are required along with a commitment to lifelong learning. The school's mission statement embodies the key concepts of core knowledge in its five-pronged approach to professional nursing education by creating curricula to address diverse societal health issues, promoting supportive and challenging learning environments, engaging students in scholarship and experiential learning, motivating students to demonstrate leadership in all areas of professional nursing, and contributing to the overall health and well-being of the communities we serve. Opportunities to explore emerging health care technologies are afforded to our students through a variety of course objectives and experiences.

Professional Values

Students enter nursing education already possessing a diverse set of personal beliefs and values. The delivery of health care and nursing education is fraught with moral dilemmas and the need to make ethical decisions based on professional values, as well as the values of the patient/client. The School of Nursing promotes the development of professional values by providing curricula that incorporate the concepts of caring, altruism, autonomy, human dignity, integrity, social justice, and accountability.

UNDERGRADUATE PROGRAM

The School of Nursing offers a four-year full-time baccalaureate program, which begins with a broad foundation in the humanities and natural and social sciences, and expands to the role of the professional nurse. Clinical practice in varied health care settings is an integral part of the educational experience. The baccalaureate program is also offered in an evening/weekend format. The curriculum plan can be found in the School of Nursing Undergraduate Student Handbook available online.
**CURRICULUM—NURSING:**  
FULL-TIME BACCALAUREATE PROGRAM

<table>
<thead>
<tr>
<th>Semester 1—Spring/Summer</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 105/106 General, Organic, &amp; Biochemistry w/ Lab</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 101 Composition &amp; Critical Thought</td>
<td>3</td>
</tr>
<tr>
<td>PSY 105 Introduction to Psychology*</td>
<td>3</td>
</tr>
<tr>
<td>Physical Education Elective**</td>
<td>0.5</td>
</tr>
<tr>
<td>History or Art History</td>
<td>3</td>
</tr>
<tr>
<td>Freshman Seminar</td>
<td>(1)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Semester 2—Fall (1st-Year Junior)</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 102 Advanced Composition &amp; Literature***</td>
<td>3</td>
</tr>
<tr>
<td>SOC 105 Introduction to Sociology*</td>
<td>3</td>
</tr>
<tr>
<td>SCOL 121 Anatomy &amp; Physiology I (Includes Lab)</td>
<td>4</td>
</tr>
<tr>
<td>Physical Education Elective**</td>
<td>0.5</td>
</tr>
<tr>
<td>Humanities Elective†</td>
<td>3</td>
</tr>
<tr>
<td>NURS 125 Introduction to Nursing (writing enriched)††</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Semester 3—Spring</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 122 Anatomy &amp; Physiology II (Includes Lab)</td>
<td>4</td>
</tr>
<tr>
<td>PSY 211 Growth &amp; Development*</td>
<td>3</td>
</tr>
<tr>
<td>PSY 381 Statistical Methods</td>
<td>3</td>
</tr>
<tr>
<td>NURS 216 or Elective</td>
<td>3</td>
</tr>
<tr>
<td>NURS 230 Calculating with Confidence</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Semester 4—Summer (2nd-Year Junior)</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS 351 Health Assessment</td>
<td>3</td>
</tr>
<tr>
<td>NURS 352 Pathophysiology/Pharmacology</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Semester 5—Fall</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS 360 Care of the Childbearing Family (C)</td>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Semester 6—Spring (Senior)</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS 360 Care of the Childbearing Family (C)</td>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Semester 7—Summer</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS 361 Care of the Childbearing Family (C)</td>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Semester 8—Fall</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS 462 Care of the Adult with Complex Problems (C)</td>
<td>7</td>
</tr>
<tr>
<td>NURS 471 Critical Thinking &amp; Clinical Decision Making I</td>
<td>1</td>
</tr>
</tbody>
</table>

| TOTAL CREDITS** | 123 |

*These courses may be taken in either the fall or spring semester as long as prerequisites have been met.

**These courses may be taken either the spring semester of junior year or fall semester of senior year.

***Students must complete both ENGL 101 and ENGL 102; students in the university’s Honors Program need ENGL 103 plus one additional humanities elective.

†NURS 460, NURS 462 must be successfully completed before attempting NURS 490.

††This is a service learning course.

`At least one humanities or history course must be taken at the 300 level. Two semesters of a language fulfill both humanities elective requirements. For course prerequisites, see the Catalog.

*Qualified students may take a graduate nursing course.

**Veterans, incoming transfer students, and freshmen 21 or older, students transferring with sophomore or above status, and students with verifiable excuses are exempt from physical education requirements. (C) denotes a clinical course.

**CURRICULUM—NURSING:**  
PART-TIME BACCALAUREATE PROGRAM

<table>
<thead>
<tr>
<th>Semester 1—Spring/Summer</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS 125 Introduction to Nursing (WE)</td>
<td>3</td>
</tr>
<tr>
<td>NURS 216 Nutrition in Health Care</td>
<td>3</td>
</tr>
<tr>
<td>NURS 226/227 Foundations of Nursing Practice*</td>
<td>3</td>
</tr>
<tr>
<td>NURS 230 Calculating with Confidence*</td>
<td>1</td>
</tr>
</tbody>
</table>

Students must have all prerequisite courses completed prior to entering their junior year.

<table>
<thead>
<tr>
<th>Semester 2—Fall (1st-Year Junior)</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS 351 Health Assessment</td>
<td>3</td>
</tr>
<tr>
<td>NURS 352 Pathophysiology/Pharmacology</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Semester 3—Spring</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS 360 Care of the Adult (C)*</td>
<td>9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Semester 4—Summer (2nd-Year Junior)</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS 364 Psychiatric/Mental Health (C)</td>
<td>5</td>
</tr>
<tr>
<td>NURS 363 Research in Nursing Practice (WE)</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Semester 5—Fall</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS 360 Care of the Childbearing Family (C)</td>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Semester 6—Spring (Senior)</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS 450 Care of the Community (C)</td>
<td>3</td>
</tr>
<tr>
<td>NURS 452 Concepts &amp; Roles in Professional Nursing (WE,S)</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Semester 7—Summer</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS 361 Care of the Childbearing Family (C)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Semester 8—Fall</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS 462 Care of the Adult with Complex Problems (C)</td>
<td>7</td>
</tr>
<tr>
<td>NURS 471 Critical Thinking &amp; Clinical Decision Making I</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Semester 9—Spring</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS 460 Home Health Care (C)</td>
<td>3</td>
</tr>
<tr>
<td>NURS 472 Critical Thinking &amp; Clinical Decision Making II</td>
<td>1</td>
</tr>
<tr>
<td>NURS 490 Practicum (C)</td>
<td>4</td>
</tr>
</tbody>
</table>

TOTAL NURSING CREDITS | 67

TOTAL LIBERAL STUDIES/SCIENCES** | 57

TOTAL CREDITS | 122–123

Theory classes may be held in the evenings, and clinical experiences in the afternoon or weekends.


*No more than 2 semesters may elapse between taking NURS 226 and NURS 230 and then NURS 350.

**PSY 381 or other 3 credit statistics course may be accepted as substitute if already on Widener Transcript.

**SCHOOL OF NURSING HONORS PROGRAM**

The School of Nursing Honors Program is designed for academically talented nursing students. Its purpose is to provide meaningful learning experiences that prepare students to continuously learn, apply, and create new knowledge throughout their lifetimes. Class time is spent cultivating critical thinking, skill in self-expression, and independent analysis of material. This program is intended as a complement to the university Honors Program in General Education. Participation may be in addition to or independent of the Honors Program in General Education. Eligible students must have a 3.2 cumulative GPA by the end of the sophomore year and a 3.5 GPA in the nursing major.
PROGRAMS FOR REGISTERED NURSES

Widener’s School of Nursing is committed to meeting the needs of registered nurses who wish to further their education at the baccalaureate and graduate level. The RN to BSN program is offered for registered nurses holding an associate’s degree or diploma who wish to pursue the bachelor of science in nursing (BSN) degree. The RN to MSN bridge program is offered for registered nurses prepared with the associate’s degree or diploma who also hold a bachelor’s degree in another field of study.

RN TO BSN PROGRAM

The RN to BSN program can be completed in one calendar year from the time prerequisite courses are finished. Students can enter the program in any semester, including fall, spring, or summer. Courses are delivered primarily online, with visits to campus occurring from one to four times per semester, depending upon the course design. Between visits, academic requirements are accomplished from any location with Internet access. Faculty are prepared to create an outstanding online experience; students learn in a small class environment, receiving support from classmates and mentorship from faculty members. Additional information can be found in the School of Nursing Graduate Studies Catalog.

PROGRAM OF STUDY FOR RN TO BSN STUDENTS

Prerequisites ........................................... 56
ENGL 101 Composition & Critical Thought 3
ENGL 102 Advanced Composition & Literature 3
PSY 105 Introduction to Psychology 3
PSY 211 Human Growth/Development 3
SOC 105 Introduction to Sociology 3
SOC 215 Sociology of the Family 3
Statistics ............................................. 3
Science Electives ................................ 12
General Electives ................................. 14
History Elective ................................ 3
Humanities Elective .............................. 3
Humanities 300-Level Elective ............. 3

Required Nursing Courses

Fall ...................................................... 9
NURS 357 Nursing Perspectives 3
NURS 352 Patho/Pharm 3
Nursing Elective ................................. 3

Spring ................................................ 9
NURS 351/352 Health Assessment* 3
NURS 456 Community Nursing ....... 6

Summer ............................................. 12
NURS 363 Research in Nursing 3
NURS 458 New Dimensions ............. 6
NURS 455 Nurse as Manager .......... 3

Program Credits

Transfer Credits—Liberal Studies/Sciences 56
Nutrition Course .............................. 3
RN Block Credits for RN License 33
BSN Nursing Program Courses .......... 30

TOTAL CREDITS 122

*RNRTO BRIDGE PROGRAM

Registered nurses who hold a bachelor’s degree in another field of study, such as history, science, or other disciplines are eligible to bridge to the master of science in nursing program with completion of just three undergraduate nursing courses. Students apply for admission to the graduate program and are admitted to the School of Nursing master’s program while completing undergraduate courses. The student selects an advanced practice specialty role as either a family nurse practitioner, or as a clinical nurse specialist in emergency critical care, community health, adult health, or psychiatric/mental health. This enables RNs to accelerate their progression toward completion of the master’s degree in nursing.

UNDERGRADUATE COURSE REQUIREMENTS FOR THE RN TO MSN PROGRAM

NURS 357 Nursing Perspective .................. 3
NURS 363 Research in Nursing Practice .......... 3
NURS 456 Community Nursing (clinical course) 6

TOTAL UNDERGRADUATE CREDITS 12

Registered nurses holding a license to practice in the United States are accepted into the RN/BSN part-time program, allowing for greater flexibility for students. Most RNs complete the program in four to five semesters. The curriculum plan can be found in the School of Nursing Undergraduate Student Handbook available online. Other options include an RN/BSN/MSN and an RN/MSN for RNs with a bachelor’s degree in another field. See the School of Nursing Graduate Catalog.

GRADUATE PROGRAMS IN NURSING

The School of Nursing offers a master of science in nursing (MSN), a doctor of nursing practice (DNP), and a doctor of philosophy (PhD). The MSN program provides students the opportunity to select the role of clinical nurse specialist in adult health nursing, emergency/critical care, psychiatric/mental health, and community health nursing, or family nurse practitioner. Post-master’s certificates in all clinical specialties are also available. The DNP program prepares advanced practice nurses (APN) for leadership at the highest levels of clinical competence in primary care (family nurse practitioner), adult health, community health, emergency/critical care, or psychiatric/mental health nursing with distinct in-depth knowledge in complex health care delivery systems. The PhD program prepares leaders in nursing education, prepares graduates for careers in college teaching, and prepares graduates for scholarship, as well as for the analysis of the concerns of the nursing progression through application of rigorous methods of disciplined inquiry. A post-master’s certificate in nursing education is available for those individuals who would like to improve their teaching skills but do not necessarily wish to earn a doctorate. There is also an accelerated MSN/PhD option. The family nurse practitioner program, the post-master’s family nurse practitioner program, and core courses for all master’s options are available on both the Main Campus and the Harrisburg Campus.

Information on any of these programs can be obtained from the School of Nursing Graduate Catalog of Widener University.

SPECIAL ACADEMIC POLICIES

IN THE SCHOOL OF NURSING

To enter the junior year, students must complete freshman and sophomore level courses with a minimum cumulative GPA of 2.75. In addition, students must earn no less than “C” in all lower-division required courses. Biology 121 and 122 or corresponding transfer courses must have been successfully completed within five years of entry to the junior year. Students who withdraw from a corequisite course before midterm must withdraw from the other corequisite course(s) as well. Matriculated students enter the junior class only if the grade-point average and appropriate grades and credits are earned by the end of the spring or summer term of the sophomore year.

Students enrolled at Widener in another major who wish to be considered for admission to the School of Nursing BSN program must have successfully completed CHEM 105 and 106 with a grade of “C” or higher, have earned a grade of “C” or higher in any courses that are part of the required nursing curriculum, and have achieved a cumulative GPA of 2.75 in their present curriculum (see “Change in Curriculum” section in the Catalog).
Students attending colleges or universities other than Widener University who wish to transfer into the School of Nursing may be considered for acceptance if they have achieved a cumulative GPA of 3.0 or higher in previous coursework. An updated transcript must be submitted at the end of the semester if currently enrolled in coursework at the time of acceptance. A cumulative GPA of 3.0 must be maintained or acceptance will be rescinded (see “Transfer Students” in the “Admission” section of the Catalog). Once accepted, transfer students must successfully complete NURS 125, 226/227, and 230 with a grade of “C” or higher at Widener prior to progression to junior nursing courses. NURS 216, which is also a prerequisite for 300-level courses, may be reviewed for transfer on a case-by-case basis. Progression to upper division requires a 2.75 cumulative GPA inclusive of NURS 125, 230, and 226/227.

Letter grades are earned for theory, and grades of “pass” or “fail” are earned for the clinical component of all clinical nursing courses. Students must earn at least a “C” in the theory component and a “pass” in the clinical component of these courses. In addition, students must earn a minimum grade of “C” in all nonclinical nursing courses.

If a student earns less than a “C” for theory or does not “pass” the clinical component in any required nursing course, the student must repeat the course. Students are permitted only two unsuccessful attempts, (a grade below a “C” or a withdrawal) at a nursing course. Enrollment and subsequent withdrawal from a course is considered one course attempt. Original grades earned for repeated courses count toward the dismissal policy. A grade of less than “C” in more than one nursing course in the program will result in dismissal from the School of Nursing. The minimum numerical grade to earn a “C” in all nursing courses is “75”.

Matriculated students may take a maximum of nine semester hours off campus only with special permission of the School of Nursing associate dean and the university’s associate provost. A Course Transfer Authorization form must be completed for all courses taken off campus.

Information related to Widener University general policies, academic policies, student rights and responsibilities, and organizations is found in this Catalog. Other academic requirements, dismissal, readmission, and other policies specific to the School of Nursing are found in the School of Nursing Undergraduate Student Handbook, which is available online. All students are responsible for familiarizing themselves thoroughly with university and School of Nursing policies.

### ADDITIONAL COSTS FOR NURSING STUDENTS

In addition to the general matriculation charges—tuition, room and board, books, etc. (see “Financial Information” section)—for all undergraduates, students in the School of Nursing incur additional expenses that begin with and continue through the clinical portions of the program. The approximate costs are as follows:

<table>
<thead>
<tr>
<th>Payable to</th>
<th>Sophomore</th>
<th>Junior</th>
<th>Senior</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Year</td>
<td>Year</td>
<td>Year</td>
</tr>
<tr>
<td>CPR</td>
<td>$60–90</td>
<td>$60–90</td>
<td></td>
</tr>
<tr>
<td>Criminal check/drug testing fees*</td>
<td>$115</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child abuse clearance*</td>
<td>$30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinical laboratory supplies</td>
<td>$100</td>
<td>$100</td>
<td></td>
</tr>
<tr>
<td>Student uniforms and equipment</td>
<td>$250</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical exams, immunizations</td>
<td>—</td>
<td>$300</td>
<td>$100</td>
</tr>
<tr>
<td>National Council of State Board of Nursing fees</td>
<td>—</td>
<td>—</td>
<td>$250**</td>
</tr>
<tr>
<td>Payable to Widener University Membership in NSNA, SNAP, WUSNA</td>
<td>$45</td>
<td>$45</td>
<td>$45</td>
</tr>
<tr>
<td>Malpractice insurance</td>
<td>—</td>
<td>$20</td>
<td>$20</td>
</tr>
<tr>
<td>Testing fees</td>
<td>$206</td>
<td>$128</td>
<td>$129</td>
</tr>
<tr>
<td>Additional exit exams (average)</td>
<td>—</td>
<td>—</td>
<td>$75</td>
</tr>
<tr>
<td>NCLEX Review</td>
<td>—</td>
<td>—</td>
<td>$200</td>
</tr>
<tr>
<td>White Breakfast &amp; Nightingale Ceremony</td>
<td>—</td>
<td>—</td>
<td>$50</td>
</tr>
</tbody>
</table>

**NOTE:** Transportation to all clinical and other health care agencies is the responsibility of the student.

*All nursing students are required to complete the criminal check, child abuse clearance, and drug testing forms prior to beginning clinical components.

**Approximate cost. Fee may vary from state to state.
## Undergraduate Courses

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- Sport Management (SMGT) ................................................. 197
- Theater (THTR) .................................................................. 198
- Women’s Studies (WS) ........................................................ 198
ACCOUNTING

Most 300- and 400-level courses require at least junior standing.

ACCT 204  FINANCIAL ACCOUNTING
This course is designed to provide students with fundamental exposure to the steps in the accounting cycle leading up to the preparation and analysis of financial statements. An emphasis will be placed on the accounting theory and practice as it falls within the framework of Generally Accepted Accounting Principles (GAAP). In addition, the student will be made aware of the opportunities within the accounting profession and the organizations that influence and contribute to its body of knowledge. Finally, ethical issues confronted by the accountant will also be introduced and discussed. Prerequisites: Second semester freshman standing and is majoring in accounting or is enrolled in the co-op program, or permission from the head of the Department of Accounting and Information Management. 3 semester hours

ACCT 205  MANAGERIAL ACCOUNTING
Managerial accounting focuses on the uses of accounting data internally by managers in directing the affairs of business and nonbusiness organizations. Topics include cost concepts, systems, and procedures directed toward job order costing, cost behavior, cost allocation, short- and long-term budgeting, the time value of money and present value analysis, forecasted financial statements, the contribution approach to break-even analysis, standard costing, relevant costing, and statement of cash flows. Emphasis is placed on the analysis of information and interpretation of data within the framework of a manufacturing concern. However, the use of accounting information by the service industry and not-for-profit sector is also discussed. Finally, students are also introduced to the Institute of Management Accountants (IMA) Code of Professional Conduct and selected homework assignments will address ethical situations confronted by the management accountant. Prerequisite: Sophomore standing, ACCT 204, or permission from the head of the Department of Accounting and Information Management. 3 semester hours

ACCT 304  CASE STUDIES IN FINANCIAL REPORTING AND ANALYSIS
This course involves a fundamental study of selected topics in corporate reporting using a case method approach. The cases will focus on the analysis and interpretation of financial information with particular attention to issues involving misrepresentation and fraudulent reporting. Outside speakers from such organizations as the FBI, IIA (Institute of Internal Auditors), and CFE (Certified Fraud Examiners) will inform students on the use of accounting information in the investigation of white collar crime. Students will also work problems using spreadsheet software and general ledger packages. Prerequisite: ACCT 204 and ACCT 205. 3 semester hours

ACCT 306  TAXATION AND ACCOUNTING FOR SMALL AND FAMILY OWNED BUSINESSES
This course provides the basic accounting and taxation knowledge essential in starting and operating a small business. The focus of the course is on financial and tax reporting for private-sector entities based on an assessment of the range and information needs of users. More specifically, the course addresses the cash method for financial and tax reporting purposes. The course focuses on entities that (a) are relatively small, (b) are not listed on any exchange, (c) are not publicly accountable by virtue of a fiduciary relationship with the public (for example, are not deposit-taking institutions or insurers), and (d) are closely held by a small group of shareholders. Prerequisite: ACCT 204, ACCT 205, and MIS 180 or equivalent. 3 semester hours

ACCT 307  FRAUD EXAMINATION
This course familiarizes students with the various types of fraudulent financial transactions potentially present in accounting records. This course is designed for both accounting majors and non-accounting majors interested in learning about the elements of fraud examination. Basic accounting and auditing theory as it relates to fraud schemes as well as internal controls to deter fraud will be stressed. A key component of the course is examining fraud as it relates to financial statements and financial reporting. Emphasis is also placed on elements of fraud investigation including interviewing, taking statements, obtaining information from public records, tracking illicit transactions, evaluating deception, and reporting the results. Prerequisites: ACCT 204, ACCT 205, and junior standing. 3 semester hours

ACCT 308  INTERMEDIATE ACCOUNTING I
An in-depth study of current accounting theory and current practices as they relate to the preparation of corporate financial statements. Emphasis is given to developing an understanding of the theoretical foundations of modern corporate reporting. This includes both U.S. GAAP and international financial reporting issues. A considerable amount of time is spent using the computer for problem solving. Prerequisite: ACCT 204, 205, and MIS 180. 4 semester hours

ACCT 309  INTERMEDIATE ACCOUNTING II
The course involves an intermediate to advanced level treatment of a wide range of issues faced in measuring a firm’s financial status and performance. Careful attention is given to strengthening and developing the understanding of the theoretical foundations of modern corporate financial reporting. Considerable emphasis is also given to applying accounting theory to practical and contemporary financial reporting problems. Topics include disclosure issues related to equity reporting, off-balance sheet financing, long-term debt, accounting for pensions, revenue recognition, income taxes, earnings per share, and the statement of cash flows. Prerequisite: ACCT 204, 205, 308, and junior standing, or permission from the head of the Department of Accounting and Information Management. 4 semester hours

ACCT 314  ADVANCED MANAGERIAL ACCOUNTING
An examination of the accountant’s role in developing cost analyses for management decisions is conducted in the areas of capital investment, performance evaluation, product pricing, intra-company transfer pricing, etc. Students are also exposed to cost allocation in more detail. In addition, students are introduced to the behavioral implications of accounting systems. Prerequisite: ACCT 204 and ACCT 205. 3 semester hours

ACCT 330  ACCOUNTING INFORMATION SYSTEMS
The course examines the systems for collecting and processing information used in financial reporting and in planning, decision making, and control in business organizations. Issues examined include the nature and purpose of an accounting information system (AIS), capture and delivery of relevant information, internal controls related to an AIS, and auditing of an AIS. These topics will be supported by hands-on computer experience with QuickBooks Pro General Ledger package. Prerequisite: ACCT 204 and ACCT 205, or MIS 180 or CSCI 101. 3 semester hours

ACCT 400  TAXATION FOR THE BUSINESS MANAGER
A study of selected fundamental tax areas in the individual, partnership and corporate framework. Emphasis is placed on major issues which would likely be encountered with some regularity in most business operation. The importance of tax planning in the management process and the value of research is also stressed. Prerequisite: ACCT 204, ACCT 205, and junior standing. 3 semester hours

ACCT 401  ACCOUNTING AND TAXATION IMPLICATIONS IN THE SPORTS INDUSTRY
This course is designed to explore selected accounting and tax issues particularly common to the sports industry. Topics include the accounting and tax treatment of leases, television rights, intangible assets, and deferred compensation contracts. In addition, franchise accounting valuation measures are discussed along with related party transactions and a variety of contingencies. In this area, conflicts of interest and ethical matters surrounding bargaining issues and players’ contracts are examined. Further, because this industry is characterized by a large volume of transactions with significant amounts of cash changing hands, students will examine budgeting procedures and internal controls pertinent to the sports franchise. Finally, the course also addresses two controversial areas pertaining to amateur sports: the tax consequences of athletic scholarships to the granting institution and the scholarship-recipient and the status of contributions and similar payments to amateur athletic organizations. Prerequisite: ACCT 204, ACCT 205, and junior standing. 3 semester hours
ACCT 402  ADVANCED ACCOUNTING CONCEPTS
This course familiarizes students with advanced topics in financial and managerial accounting. Topics include governmental and not-for-profit accounting, accounting for foreign currency transactions, accounting for business combinations, consolidated financial statements, financial instruments, interim financial statements, SEC reporting requirements, and SEC reporting. The course also addresses, as time permits, managerial accounting and internal reporting issues such as process costing, ABC costing, and cost allocation techniques. Of prime importance is the concentration on current issues. Prerequisite: ACCT 308 or ACCT 309 and junior standing. 3 semester hours

ACCT 404  INTERNATIONAL ACCOUNTING AND REPORTING
Financial reporting is increasingly serving users whose decision needs are international in scope. This course examines the external and internal reporting problems associated with multinational business entities. It provides an overview of the organizations that have evolved in response to international accounting, reporting, and policy issues. Prerequisite: ACCT 204, ACCT 205, and junior standing. 3 semester hours

ACCT 405  FEDERAL INCOME TAXATION
A study of federal income tax law as related primarily to individuals, but also covering business activities in which an individual may become involved. Students are required to do tax research and examine ethical dilemmas in tax practice. Topics include the determination of income, exclusions, deductions, credits, and other tax issues. Prerequisite: ACCT 204 and ACCT 205, and junior standing. 3 semester hours

ACCT 407  CORPORATE FEDERAL INCOME TAX
An in-depth study of corporate, partnership, estate, and trust income tax law, as well as the federal gift and estate tax. The interrelationships among the three areas are stressed. Considerable tax research is required. Prerequisite: ACCT 204 and ACCT 205, and junior standing. 3 semester hours

ACCT 408  PRINCIPLES OF ESTATE PLANNING
This course provides an overview of estate taxation and planning. The course begins with a consideration of the ownership of property. It explores real property, personal property, types of property interests, including remainder interests and community property. It also provides an overview of the law pertaining to trusts, fiduciaries, and powers of appointment. The course focuses on the federal estate and gift tax system and discusses basic federal estate tax planning strategies. It also places emphasis on the special legal, business, and estate planning challenges presented by the privately-owned family business. The course considers the following legal and tax areas: (1) fundamental property ownership rules, (2) fiduciary duties owed by trustees and business partners, (3) estate and business planning opportunities for private business, (4) the use of limited liability companies and family limited partnerships in business planning, and (5) basic concepts involving estate and gift taxation. Prerequisite: ACCT 204, ACCT 205, and junior standing. 3 semester hours

ACCT 409  PENSIONS AND RETIREMENT
Approximately half of ACCT 409 is intended to provide you with an understanding of pension plans and the qualified and nonqualified plan environments. At the end of this material, you will be able to select and design plans for small business-owners and other clients. Two-fifths of the course surveys other ERISA plans, the so-called welfare benefit plans. The final three-fifths of ACCT 409 is dedicated to the study of individual retirement planning. It includes the study of retirement accumulation models, social security, and several retirement planning strategies. Prerequisite: ACCT 204, ACCT 205, and junior standing. 3 semester hours

ACCT 410  NOT-FOR-PROFIT AND GOVERNMENTAL ACCOUNTING
An examination of accounting for not-for-profit entities, such as colleges and universities, hospitals, churches, charities, and various levels of state and local government. Prerequisite: ACCT 204, ACCT 205, and junior standing. 3 semester hours

ACCT 414  CASE STUDIES IN MANAGERIAL ACCOUNTING
This course involves an in-depth study of selected topics in managerial accounting using a case method format. Students examine issues using both a conceptual and pragmatic approach. Outside readings from professional journals supplement the textbook material and are used as a vehicle for introducing new topics and reinforcing concepts addressed in the cases. Group presentations of cases are used throughout the course. Prerequisite: ACCT 204, ACCT 205, and junior standing. 3 semester hours

ACCT 415  AUDITING, ATTESTATION, AND PROFESSIONAL RESPONSIBILITY
This course is an intensive study of fundamental concepts and principles underlying the examination of financial statements. Emphasis is placed on enhancing the capacity for sound judgment in the evaluation of evidential matter and the system of internal control. Considerable attention is paid to accountants' professional responsibility; professional standards, including GAAS, PCAOB, and quality control; and ethical issues including the AICPA Code of Conduct. Prerequisite: ACCT 308 or ACCT 309, and junior standing. 3 semester hours

ACCT 417  INTERNAL AUDITING
A study of the independent appraisal activity within an entity in the form of financial, compliance, and operational audits. This course focuses on the objective and scope of internal auditing, the responsibility and authority of internal auditors, and the independence of the function. Topics include the Institute of Internal Auditors: Statement of Responsibilities of Internal Auditors, Standards for Professional Practice, and Code of Ethics. Each student will perform research on the topic and participate in a group presentation. This is a required course for criminal justice students in the Certificate in Accounting program. Prerequisite: ACCT 204, ACCT 205, and junior standing. 3 semester hours

ACCT 420  ACCOUNTING AND TAXATION OF MUTUAL FUNDS
This course examines the role of the investment accountant for a mutual fund. Students learn about the regulatory environment in which mutual funds operate and the role of the SEC. Students also gain an understanding of the types of transactions handled by a mutual fund accountant and how they affect the daily determination of the fund’s net asset value (NAV). Students are placed into teams and do the accounting for their own mutual fund. Finally, students learn about tax implications pertinent to mutual funds. Students study the subchapter M rules relevant to a regulated investment company (RIC) and examine the typical tax issues that a mutual fund shareholder will encounter. Prerequisite: ACCT 204, ACCT 205, and junior standing. 3 semester hours

ACCT 435  ADVANCED ACCOUNTING INFORMATION SYSTEMS
The course examines accounting issues that relate to advances in information technology. Students examine internet resources, terms, and applications (including exchange of accounting information, tax research, etc.), internet and computer security and controls, and auditing in the computer environment. This course builds on issues covered in ACCT 330, Accounting Information Systems. These topics will be supported by hands-on computer experience with various internet and accounting business software packages. Prerequisite: ACCT 204, ACCT 205, ACCT 330, MIS 290, and junior standing. 3 semester hours

ACCT 450  SELECTED ADVANCED ACCOUNTING TOPICS
This course involves an in-depth study of accounting for partnerships, bankruptcies, segment and interim reporting, and selected emerging issues in financial reporting, foreign exchange transactions and accounting, and the internet. Attention is given to relevant questions and problems on past CPA and CMA examinations. Prerequisite: ACCT 204, 205, either 308 or 309, and senior standing. 3 semester hours

ACCT 451  ACCOUNTING SEMINAR
In this course, emphasis is placed on current problems in accounting theory, auditing, and practice. Discussions are based on individual
and group research. Outside readings are assigned from professional journals and students serve as discussants who analyze and critique selected topics. Abstracts, debates, and a short research proposal are required. Must be accounting major in senior year. Prerequisite: ACCT 308 and ACCT 309 and senior standing. 3 semester hours

**ACCT 498 ACCOUNTING INTERNSHIP**
This course, developed for the accounting major, provides opportunities to obtain practical experience by applying knowledge gained through classwork in an actual business environment. Students work on projects developed with industry partners and prepare reports on these experiences with their academic and industry supervisors. Prerequisite: junior or senior standing. **NOTE:** This course can only be taken pass/fail as a free elective. This course cannot be used as an accounting elective. 3 semester hours

**ACCT 499 INDEPENDENT STUDY IN ACCOUNTING**
The student undertakes independent study of significant accounting problems. A topic, approved by the instructor, is chosen for research, and a written report is required. Discussions as to the progress of the work are held periodically. Prerequisite: Open to qualified students with the permission of the faculty advisor and the head of the Department of Accounting and Information Management. Junior or senior standing. 3 semester hours

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**ANTHROPOLOGY**

**ANTH 105 CULTURAL ANTHROPOLOGY**
This course acquaints students with how anthropologists use a cross-cultural approach to understand human behavior. Differ-ences among the world’s cultures are examined in terms of technological levels, social organization, and ideology. Topics include symbolism, language, sex roles, economic systems, kinship, political systems, religion, magic, warfare, and cultural change. The course concludes by exploring how an anthropological perspective provides insight into contemporary ecological, social, and human survival issues. 3 semester hours

**ANTH 202 RELIGION, MAGIC, AND WITCHCRAFT**
This course is not about religions, but religion. By looking at the “logic” behind the religious experience and the religious beliefs of many cultures, the course delves into the varieties of religious philosophy and religious practice that exist in the world. The importance of religions as a way to find meaning in life, and the expressions of religious belief in magic, witchcraft, astrology, spirit mediums, voodoo, ritual, symbol, myth, and ethics are explored. The social uses of religions in group formation and cohesion, politics, and cultural revitalization are explained. The role of religion in American life and social/political behavior is discussed. No prerequisite. 3 semester hours

**ANTH 204 BIOLOGICAL/PHYSICAL ANTHROPOLOGY**
This course deals with the interaction of biological and cultural factors in the evolution of modern humans and their adaptation to the environment. The course begins by reviewing the mechanisms of biological evolution and genetics and how appearance and behavior are encoded, and changed through time. By first looking at our closest, non-cultural bearing relatives, the monkeys and great apes, the contrast between biological and cultural factors is emphasized. The detective work in interpreting the fossil record of human evolution is then examined to understand better how humans came to be the species we are. The remainder of the course looks at variation in modern humans in various climates and regions, and explains how variation in biological form—skin color, body form, eye shape, variation in growth patterns, menarche, disease, sexual behavior, and “race”—are affected by biological and cultural factors. A two-hour lab permits hands-on examination of the specimens and the tools and techniques physical anthropologists use. No prerequisite. Meets the General Education requirement for a science with lab or a social science elective. 4 semester hours

**ANTH 205 HUMAN SEXUALITY IN CROSS-CULTURAL CONTEXT (SAME AS WS 205)**
This course concerns ideas of human sexuality and to a lesser extent, gender, in a cross-cultural context. In the course, students study the human brain and hormonal system in order to discover what about sexuality and gender are biologically programmed. Once that is established, students look at sexuality as it is understood in a number of cultures, including our own. Topics include (1) marriage systems of different types and how they regulate sex, (2) what different cultures define as customary or “normal” sexual practice and what is regarded as abnormal, (3) sexual custom versus sexual practice, and (4) sexual taboos and how taboos reflect masculinity, femininity, and other culturally defined sexual orientations. No prerequisite. 3 semester hours

**ANTH 206 MEDICAL ANTHROPOLOGY**
The purpose of this course is to introduce the multidisciplinary field of medical anthropology. Its emphasis is on reaching an understanding of health and human disease within a context of evolution, biobehavioral interaction, ecology, and culture. In addition, the practice of Western medicine and non-Western or alternative medical practices will be contrasted. Topics include disease transmission, demographics, social roles of the healers and the sick, cross-cultural differences in their view of sickness and the sick, the challenges of 21st-century diseases (AIDS, Ebola, drug resistant bacteria, parasites, and viruses). No prerequisite. 3 semester hours

**ANTH 207 HUMAN EVOLUTION AND DIVERSITY**
There are different physical characteristics among human beings, things like skin and hair color, body shape, and other physical features. How do we understand these variations, and how has their interpretation led to people's behavior? Anthropology has a unique interest in these questions as they touch on the core issues of the discipline: human evolution and the content of culture and ethnicity. This course will examine the issue of diversity from those two perspectives. The genetics of human beings and the evolutionary causes of variation in physical form will be investigated. The cultural interpretation of diversity will then be examined in terms of the attitudes and behaviors of groups toward one another. No prerequisite. 3 semester hours

**ANTH 208 RACE AND RACISM**
As social scientists assert, race matters. What is race? How does race play a role in American society? This courseexplores race from all of its dimensions: biology, culture, language, and cultural evolution. In addition to investigating the evolutionary factors that give rise to physical human variation, this course addresses the processes that gave rise to social inequality. Students use an anthropological approach to trace the formation of the current U.S. racial hierarchy from the colonial era to the present and examine the shifting character of racial discrimination across time and space. No prerequisite. 3 semester hours

**ANTH 216 ANTHROPOLOGICAL ARCHAEOLOGY**
Archaeology is one of the four fields of anthropology. Its techniques involve the recovery of artifacts from the earth, including buried material from crime scenes. Its subject involves discovering the past and the nature and causes of societal evolution, especially over the longer term. This course looks at the methods, interpretative tools, and insights of archaeology with hands-on work in class, and the results of archaeological work from Old and New World cases. Prerequisite: Sophomore status. 3 semester hours

**ANTH 217 BIBLICAL ARCHAEOLOGY**
This course teaches students how archaeology is helping scholars and lay persons to interpret the Old and New Testaments. The course begins with a review of the techniques and challenges of archaeological data recovery and interpretation: artifact function, dating, typology, style or symbolic analysis, decipherment, reconstructing activity areas, and regional analysis. Students then work their way through a series of specific cases—Abraham, the Exodus, the “conquest” of Canaan, David and Solomon, and Jesus—to reveal what archaeology can and cannot do, and to set a cultural background for understanding the Bible. No prerequisite. 3 semester hours
ANTH 241  CHINA (SAME AS GP 241)
Traditional and modern China are compared. The treatment of traditional Chinese culture includes consideration of religion and philosophy, social and political institutions, arts, and literature. The development of the present-day political and economic systems is also covered, with emphasis on the Communist revolution. No prerequisite. 3 semester hours

ANTH 242  JAPAN (SAME AS GP 242)
This course will familiarize students with contemporary Japanese culture, politics, economic structure, education, and religion. After a brief survey of Japanese history and traditions, the course focuses on Japan as a dynamic urban society which has both similarities and differences with other industrial societies. Topics include the family, national and local politics, Shinto and Buddhist religions, the national educational system, economic strategies, the salaried worker, yakuza (gangsters), the burakumin caste, mass media, women's roles, the elderly, and Japan's international role. No prerequisite. 3 semester hours

ANTH 243  THE MIDDLE EAST
This course introduces students to the cultures and culture history of a region that has had a critical impact on the development of Western traditions and on global politics, yet remains foreign and incomprehensible to most Westerners. This course illustrates the diversity of Middle Eastern cultures, economic and political systems, ethnicities, languages, and environments. At the same time, it shows how common histories have created some patterns that define the region and its peoples. Customs, ways of thinking and organizing, music, art, and literature that reflect both the similarities and differences among Middle Easterners are examined. Of special note is the place of religion, especially Islam, in the lives and cultures of the peoples of the region. In this way, we try to understand the events of our day in a deeper way. No prerequisite. 3 semester hours

ANTH 244  AFRICA
This course will be a general introduction to the societies and cultures of sub-Saharan Africa. The goal of this course is to provide background information on traditional patterns of African life. This course will provide a foundation for understanding modern African ethnography, sociology, politics, and economics, which require a knowledge of traditional society and culture. The course will illustrate the differences and similarities of Africa’s people and cultures. It will look at their geography, environments, languages, and food-getting practices. Major emphasis will be placed on the different culture areas and their typical social organizations and cultural practices. Among those are marriage and kinship, power and social control, seniority systems, thought, and religion. The rise of the African states will be considered at the end of the course. No prerequisite. 3 semester hours

ANTH 250  SYMBOLISM, COGNITION, AND SOCIETY
This course examines the way societies around the world (including, but not limited to the United States) construct and use symbols and their narrative forms: rituals, myths, and “artistic” performance. Symbols and symbol making reflect a uniquely human way in which people express their identification with certain social groups and with the ideals or values those groups represent. Topic areas explore the manner in which people from different cultures create and use symbols. Among the topics covered are symbols in religion, politics, promoting change, confronting external threats, constructing social groups and social movements. Satisfies Social Science general requirement. No prerequisite. 3 semester hours

ANTH 302  ANTHROPOLOGY OF ECONOMIC SYSTEMS
This course delves into economic systems in the Third World and also in the West and First World. Using some lecture, but primarily a case study approach, the course explores how each cultural system has a different organizational logic and how that logic affects individual economic decisions and the larger structure of economics. The course also highlights advertising as a symbolic system that functions differently in each culture. This course primarily covers economic systems other than Capitalism (the economics of tribes, of pre-state systems, of feudalism, and of the Oriental state). The class does, however, discuss Capitalism from an anthropological point of view. In viewing cultural systems, students explore the correlation of economic behavior with politics, religion, the creation of status and class, ethnicity, and adaptation to natural environment. Prerequisite: ANTH 105 or permission of instructor. 3 semester hours

ANTH 304  ANTHROPOLOGICAL THEORY AND DEVELOPMENT LITERATURE
This course highlights the evolution of the discipline of anthropology and its major theoretical schools and perspectives. Students learn how these theoretical approaches have been applied to real-world societies in the Third World and our own society to engineer societal change and development. Prerequisite: ANTH 105 or permission of the instructor. 3 semester hours

ANTH 305  BUSINESS CULTURE IN INTERNATIONAL PERSPECTIVE
This course is designed to teach students how to use the ethnographic method and anthropological literature in order to deal more effectively with foreign business people, foreign markets, and foreign development agencies. Emphasis is placed on case studies of frequent trading partners, Mexico, China, Japan, and the Gulf States, for example. Aside from background on the cultural practices and ideas of the people of these countries, the course deals with the more general problem of understanding the Other, and where the Other is in places across our borders. No prerequisite. 3 semester hours

ANTH 306  GLOBALIZATION (HONORS)
This honors seminar invites students to explore the many dimensions of what is being called “globalization,” the increasing interconnectedness of societies around the world primarily involving economic production and exchange, but extending beyond economics to cultural exchange and politics. The issue of globalization is analyzed from beyond just the anthropological perspective, and incorporates perspectives of history, technology, communication, philosophy, economics, politics, and literature. Its anthropological focus emphasizes the adoption of other societies’ cultural patterns, such as music and food, the expansion of supranational loyalties, and the instantaneous nature of world globalization. No prerequisite. 3 semester hours

ANTH 308  FORENSIC ANTHROPOLOGY
Forensic anthropology is a distinct subfield of biological anthropology that applies the techniques of osteology and biomechanics to questions in forensic science. It is a diverse and rapidly growing field of anthropology that has very practical implications for criminal justice. Class topics include human osteology, crime scene investigation, search, recovery and taphonomy of human remains (locations of body), laboratory analysis, postmortem interval (or time since death), trauma analysis (cause and manner of death), and the development and application of innovative and specialized techniques. No prerequisite. 3 semester hours

ANTH 314  LANGUAGE AND CULTURE
An exploration of the social and cultural dimensions of language structure and use. The course concentrates on sociolinguistics, that is, how social variables influence language use. Other topics include how language use represents differences in social class, gender, social mobility, ethnicity, kin groups, professions, and social situations. No prerequisite. 3 semester hours

ANTH 382  ETHNOGRAPHIC METHOD
This course is designed for the anthropology major in the cultural or business/applied concentrations or tracks. It teaches the students the essentials of the ethnographic method, which is needed to conduct senior research projects. The ethnographic method is a qualitative method that emphasizes participant observation, outside observation, and informants. This course does not require a statistics prerequisite (e.g., PSY 381/383) and is the only research methods course required before ANTH 409/410, Senior Research, for cultural track majors. 3 semester hours

ANTH 394, 395  ANTHROPOLOGY PRACTICUM
For both ANTH 394 and 395, students work 6–8 hours per week off campus in one of several research institutions under the supervision of institutional personnel. Students are required to become familiar
with the scholarly literature relevant to their placement, to participate in on-campus meetings, and to write a research paper integrating the research and fieldwork aspects of the practicum. Permission of instructor and ANTH coordinator required prior to registration. Open only to juniors and seniors. Not available to students who are student-teaching. Prerequisite: ANTH major. Maximum of 3 credits each for ANTH 394 and 395. 3–6 semester hours

**ANTH 409/410 SENIOR RESEARCH**
Research in an area of a student’s interest. Required of all majors in anthropology. Prerequisite: ANTH 382. 6 semester hours

**ANTH 419 SENIOR RESEARCH**
The ANTH 409–410 sequence taken in one semester. Offered only in fall semester. Open only to December graduates or seniors who will be student-teaching in the spring semester. 3 semester hours

**ANTH 423 FORENSIC ANTHROPOLOGY INTERNSHIP**
This is a capstone course for remaining minors in forensic anthropology and qualified biology track students. It involves placement in a professional organization that deals with post-mortem investigation (most often a medical examiner’s office). Students are expected to stand in on autopsies, aid with forensic investigation of skeletonized bodies, work in the toxicology laboratory, and participate in other activities related to criminal and forensic investigation. Prerequisites: ANTH 204 and 308; BIOL 121, 122, and 230 with labs; CHEM 101 and 102 with labs. 6 semester hours

**ANTH 499 INDEPENDENT STUDY**
Individual study for a limited number of students in consultation with a member of the anthropology faculty. Admission is dependent on formal approval of the faculty member involved and approval by the dean. 3 semester hours

**ANTH 188, 288, 388, 488, 588 SPECIAL TOPICS IN ANTHROPOLOGY**
Topics offered in response to student and/or faculty interest. 3 semester hours each

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**ART HISTORY**

**AH 101 ART HISTORY I**
A survey of the major visual arts—architecture, painting, sculpture—from prehistoric times through the Middle Ages. Given fall semester every year. 3 semester hours

**AH 102 ART HISTORY II**
A survey of the major visual arts—architecture, painting, sculpture—from the Renaissance to the present. Given spring semester every year. 3 semester hours

**AH 105 CONCEPTS OF ART HISTORY**
This course surveys Western art from antiquity to the present. Although designed primarily for education majors, the course is open to all students. The major media (i.e., painting and prints, sculpture, architecture, and photography) will be addressed, allowing students to familiarize themselves with works from a broad spectrum of Western culture. Assignments include visits to local art collections so that students might acquaint themselves with some of the major museums in the greater-Philadelphia area. 3 semester hours

**AH 301 GREEK ART**
This course surveys the vase painting, sculpture, and architecture of Greece, commencing with its Cycladic and Minoan/Mycenaean beginnings and proceeding to the final Greek period, Hellenistic. Although the approach to Greek art will be primarily historical, students will also be introduced to new research dealing with current questions explored for the period, including gender issues and critical reevaluations of well-known monuments. Students will use local collections to familiarize themselves with Greek art. 3 semester hours

**AH 302 ROMAN ART AND ARCHITECTURE**
This course is intended to acquaint the student with the major monuments as well as the historical questions regarding the art and architecture of the Roman world, with material ranging in time from the Etruscans to the Late Roman/Early Christian period. 3 semester hours

**AH 303 MEDIEVAL ART**
The purpose of this course is to acquaint the student with the major ideas and monuments of medieval art, beginning with the Early Christian period and progressing through the Late Gothic. Through a study of the art and architecture of this period, students will explore the ways that religion, philosophy, and commerce helped to shape the material culture of this important part of the history of the Western world. 3 semester hours

**AH 304 ITALIAN RENAISSANCE ART AND ARCHITECTURE**
A survey of painting, sculpture, and architecture in Italy from 1300 to 1600, an era encompassing figures such as Leonardo, Michelangelo, Raphael, and Titian. The course covers the new dignity accorded to the human form, the rediscovery of classical culture, the emergence of empirical science, the development of perspective and new uses of color, the expanding market for art, and the changing role of the artist. 3 semester hours

**AH 305 NORTHERN RENAISSANCE ART**
A survey of the arts of Northern Europe in the 15th and 16th centuries, an era encompassing such figures as van Eyck, van der Weyden, Bosch, Bruegel, and Dürer. The course examines how the changing political, economic, and religious systems of Northern Europe shaped the production of art. Topics to be considered include the coexistence of naturalism and spirituality in Northern Art, the development of oil painting and graphic design, the impact of the Italian Renaissance on Northern artists, and the influence of the Reformation on the visual arts. 3 semester hours

**AH 306 BAROQUE AND ROCOCO ART AND ARCHITECTURE**
A survey of painting, sculpture, and architecture from 1600 to 1750. Topics include the decline in Renaissance values, and influence of the Counter-Reformation on artistic production, the rise of Protestantism and the changing structure of patronage, and the grandeur of the artist. Special emphasis is given to the careers of the major artists Caravaggio, Bernini, Rubens, Rembrandt, and Velázquez, and to the major artistic centers of Rome, Amsterdam, Madrid, and Paris. 3 semester hours

**AH 310 IMPRESSIONISM**
An examination of French painting from roughly 1860–1885. The course investigates Impressionist art as part of the historic, social, economic, and political context of later 19th-century French culture. 3 semester hours

**AH 312 19TH-CENTURY EUROPEAN PAINTING**
Painting from Neoclassicism through Impressionism: an examination of the effects on painters of political and economic upheavals in 19th-century France, England, Spain, and Germany. Formerly listed as AH 212. 3 semester hours

**AH 314 20TH-CENTURY ART**
A survey and explication of painting and sculpture in Europe and the United States from Post-Impressionism to the present. In an effort to understand the increasing role of abstraction in 20th-century art, special emphasis is given to the artists such as Van Gogh, Cézanne, Picasso, and Matisse, who were among the first to challenge the expectation that art must always imitate reality. Formerly listed as AH 214. 3 semester hours

**AH 321 AMERICAN ART AND ARCHITECTURE: COLONIAL TO CIVIL WAR**
The purpose of this course is to acquaint the student with American painting, sculpture, architecture, and decorative arts produced from the Colonial Period to the Civil War. Works of art will be examined in light of their cultural, social, and political significance; and ideas regarding the revision of thought regarding American imagery will be introduced. 3 semester hours

**AH 322 AMERICAN ART AND ARCHITECTURE: CIVIL WAR TO PRESENT**
The intent of this course is to acquaint the student with the painting, sculpture, architecture, and decorative arts of the United States produced during the years beginning with the Civil War to the present. Works of art will be discussed as products of the political, social, and...
cultural conditions found in the United States, and ideas regarding the revision of research in studies regarding American art will be introduced. 3 semester hours

**AH 345 19TH-CENTURY EUROPEAN ART AND ARCHITECTURE**
A survey of painting, sculpture, architecture, and photography in Europe from 1750 to 1900. The course examines how each of the media at once drew upon the art of the past and broke with long-established conventions to formulate models of representation that anticipate Modern Art. 3 semester hours

**AH 346 20TH-CENTURY ART AND ARCHITECTURE**
A survey of painting, sculpture, and architecture in Western Europe and the United States from 1900 to the present. 3 semester hours

**AH 347 ART SINCE 1945**
This course examines the principal artists, artistic movements, and radical changes that have helped shape American and European art since 1945. In addition to painting and sculpture, happenings, performance art, public art, installation art, and video and digital art are considered. The course examines Jackson Pollock and the emergence of abstract expressionism in the late 1940s and 50s, Andy Warhol and the pop artists of the 1960s, conceptual artists and Earth artists of the 1970s, the resurgence of Europe as a major art center during the 1980s, and the collapse of traditional artistic hierarchies during the 1990s. The course concludes with an examination of current key artists and themes such as cultural dislocation and gender. 3 semester hours

**AH 350 WOMEN AND ART (SAME AS WS 350)**
This course looks at studies over the past twenty years that have resituated the significant contributions of women in making, commissioning, and inspiring artistic images. These re-evaluations have led to a richer, more nuanced history—one that posits gender as an integral factor and that reveals the key role women have played in the world of art. We will focus on how artists portrayed women and the ways representations of women function as a manifestation of culture. The work of women artists and feminist critical discourse will be included. 3 semester hours

**AH 360 AFRICAN ART**
This course covers the outstanding arts of Africa, encompassing visual arts and architecture of ancient cultures, regional artistic traditions in more recent pre-colonial times, and contemporary art. Students gain an appreciation of the scope of this field while achieving an in-depth understanding of particular African artistic traditions, artists, and artworks within their historical and cultural contexts. The course also promotes an understanding of the arts of the African Diaspora, focusing on artistic expressions in Brazil, the Caribbean, and the United States. 3 semester hours

**AH 370 HISTORY OF PHOTOGRAPHY**
This course presents the history of photography, from its beginnings in the 1830s to the recent past-modern era. Key figures in the history of photography are placed within the context of corresponding artistic movements of the 19th and 20th centuries. 3 semester hours

**AH 188, 288, 388, 488, 588 SPECIAL TOPICS IN ART HISTORY**
Offered in response to student and/or faculty interest. Varied topics of interest will be selected. Courses may be planned to coincide with special exhibitions in the Greater Philadelphia area, or with the research interests of the instructor. 3 semester hours each

**ARTS AND SCIENCES**

**ASC 400 VALUES SEMINAR**
This upper-level interdisciplinary course involves a discussion of values as affecting individual and societal decision making. Completion of a paper is a major component of the course. Prerequisite: completion of six credits in each of the three areas (science, humanities, and social sciences) and junior or senior status. This course does not meet distribution requirements without approval of the dean of Arts and Sciences. 3 semester hours

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**ART STUDIO**

**AS 111 DRAWING I (FORMERLY AS 100)**
An introduction to drawing and the concepts of line, texture, composition, value, and perspective. Students develop a visual vocabulary, an appreciation of diverse drawing styles, and the ability to view works from a critical perspective. Mandatory visits to museums provide students with additional opportunities to study works of established artists. 3 semester hours

**AS 112 DRAWING II**
A continuation of Drawing I, incorporating the use of color and broader critical aesthetic awareness. Students are introduced to a variety of drawing media both in class and through visits to the Philadelphia gallery district. Prerequisite AS 111 or permission of instructor. 3 semester hours

**AS 121 PAINTING I (FORMERLY AS 101)**
An introduction to painting and the concepts of color and light. Students develop a visual vocabulary, an appreciation of diverse painting styles, and the ability to assess works in a critical manner. Mandatory museum visits provide additional opportunities to study the works of established artists. 3 semester hours

**AS 122 PAINTING II**
A continuation of Painting I, focusing on the exploration of artistic solutions and aesthetic values. Students are introduced to a variety of painting styles both in class and through visits to Philadelphia area museums. Prerequisite: AS 121 or permission of instructor. 3 semester hours

**AS 131 TWO-DIMENSIONAL DESIGN**
An introduction to two-dimensional design, and basic concepts that can be applied to all visual arts media: shape, line, composition, space, texture, pattern, and value. Students develop a visual vocabulary, an appreciation of diverse approaches and styles, and the ability to assess works in a critical manner. Mandatory visits to museums provide students with additional opportunities to study the works of established artists. 3 semester hours

**AS 301 ADVANCED STUDIO ART**
Students research living and historical artists, develop a series of exploratory exercises in drawing, painting, or mixed media, and complete a body of original works of art. Coursework is derived from collections in premier regional museums, national traveling exhibitions, and commercial galleries in nearby urban centers. The course may be repeated. Prerequisites: Minimum of two 100-level studio art classes. 3 semester hours

**BIOCHEMISTRY**

**BCH 101 BIOCHEMISTRY SEMINAR I**
In this first seminar course in a two-semester sequence, students are introduced to the essence of biochemistry. The course involves active learning strategies, student presentations, guest lectures or external seminars, and other activities designed to acquaint students with and promote understanding of the discipline. It may not be used to satisfy the science general education requirement. Prerequisite: Biochemistry major or permission of the instructor. 2 hours lecture. 1 semester hour

**BCH 102 BIOCHEMISTRY SEMINAR II**
This is the second seminar course in a two-semester sequence. Students enhance their understanding of the biochemistry discipline via active learning strategies, student presentations, guest lectures, field trips, and other activities designed to promote understanding of the discipline. This course may not be used to satisfy the science general education requirement Prerequisite: BCH 101 or permission of the instructor. 2 hours lecture. 1 semester hour

**BCH 301 BIOCHEMISTRY SEMINAR III**
This upper-division seminar course is taught in a journal club style. Weekly meetings include discussions of a variety of papers (current hot topics, reviews, seminal works) from different areas in biochemistry. Corequisite: BCH 451. 2 hours lecture. 1 semester hour
BCH 302 **BIOCHEMISTRY SEMINAR IV**
A special topics seminar course taught in a journal club style, offered in response to faculty/student interest. Prerequisites: CHEM 256/258, BIOL 262, and BIOL 299. 2 hours lecture. 1 semester hour

BCH 399 **RESEARCH EXPERIENCE**
Students conduct investigative research under the direction of a biochemistry faculty member. Scope, topics, and requirements are arranged individually. Prerequisite: Permission of the instructor and junior standing. This course is not a substitute for the Senior Thesis. Students may enroll in BCH 399 for two semesters. 1–4 semester hours

BCH 408 **SENIOR THESIS PROPOSAL**
Development of a research proposal for the senior thesis. Proposal must be approved by a thesis committee for successful completion of the course. Prerequisites: CHEM 256/258, BIOL 262, and BIOL 299. 1 semester hour

BCH 409 **SENIOR THESIS IN BIOCHEMISTRY I**
Independent biochemical research based on a proposal developed in BCH 408. Prerequisite: BCH 408. 2 semester hours

BCH 410 **SENIOR THESIS IN BIOCHEMISTRY II**
Independent biochemical research based on a proposal developed in BCH 408. A written thesis, a final oral presentation, and a thesis defense are required. The thesis must be approved by a thesis committee for a final grade to be submitted. Prerequisite: BCH 409. 2 semester hours

BCH 451 **BIOCHEMISTRY I**
This is the first of a two-semester sequence in the fundamentals of biochemistry. Major goals are (1) to introduce the language of biochemistry and (2) to provide an understanding of the physical, chemical, and biological context in which biochemistry takes place. The course provides a structural framework of biochemistry through examination of the molecular components of the cell and protein dynamics. Topics include the thermodynamics of biological systems, amino acids and protein structure, carbohydrates, lipids and membrane structure, membrane transport systems, nucleotides and nucleic acid structure, and enzyme dynamics—kinetics and mechanism of catalysis. Prerequisite: CHEM 256. Corequisite: BCH 453. 3 hours lecture. 3 semester hours

BCH 452 **BIOCHEMISTRY II**
This is the second course in a two-semester sequence in the fundamentals of biochemistry. Major goals are (1) to introduce the language of biochemistry and (2) to provide an understanding of the physical, chemical, and biological context in which biochemistry takes place. The course covers bioenergetics and intermediate metabolism: glycolysis, the TCA Cycle, electron transport and oxidative phosphorylation, photosynthesis, glucose and glycogen metabolism, fatty acid catabolism, lipid biosynthesis, amino acid metabolism, and the synthesis and degradation of nucleotides. Prerequisite: BCH 451. Corequisite: BCH 454. 3 hours lecture. 3 semester hours

BCH 453 **BIOCHEMISTRY LAB I**
This laboratory course is taken together with the lecture course BCH 451 and includes laboratory exercises that are complementary to the topics covered in that course. It is the first-semester laboratory course in a two-semester sequence that includes BCH 454. The laboratory exercises are designed to further develop analytical and laboratory skills as applied to a modern biochemistry laboratory setting. In addition, this course may include exercises in biochemical modeling and bioinformatics. Prerequisites: CHEM 256 and 258. Corequisite: BCH 451. 3 hours laboratory. 1 hour lab discussion. 1 semester hour

BCH 454 **BIOCHEMISTRY II LAB**
This second laboratory course is designed to be taken together with the lecture course BCH 452 and includes laboratory exercises that are complementary to the topics covered in that course. The laboratory exercises are designed to further develop analytical and laboratory skills as applied to a modern biochemistry laboratory setting. In addition, this course may include exercises in biochemical modeling and bioinformatics. Prerequisite: BCH 453. Corequisite: BCH 452. 3 hours laboratory. 1 semester hour

BCH 490 **BIOCHEMISTRY INTERNSHIP**
This biochemistry-related work experience or other activity is offered only upon special application from the student and a supervising faculty member. Approval must be obtained in advance from the biochemistry committee and requires a specific outline of work to be done: the nature and extent of its academic relevance and the academic and special preparation of the student for the proposed activity. Written approval must be obtained from the employer/sponsor, and arrangements must be made for regular contact between the student and the supervising faculty member. The student is responsible for making all arrangements. A written final report must be submitted upon completion of the activity. The student is required to make an on-campus presentation detailing the internship. A pass/fail grade will be assigned. The number of semester hours earned will depend on the extent of the approved activity (12 semester hours corresponds to full-time work for a semester). Prerequisites: Junior or senior standing, a GPA of at least 2.5 both in the major and cumulative in all courses, and approval of both the academic advisor of the student and the head of the science division. 3–12 semester hours

BCH 499 **RESEARCH EXPERIENCE**
Students engage in individual investigation of a problem in biochemistry by carrying out original research under the direction of a biochemistry faculty member. A written final report must be submitted upon completion of the project, and the student is required to make a presentation at an on- or off-campus forum. Prerequisites: Senior standing and permission of the sponsoring faculty member. The student is required to complete a minimum of three credit hours. Topics are arranged individually. Students may enroll in BCH 499 for two semesters. This course is not a substitute for the Senior Thesis. 3 or more semester hours

**BIOLOGY**

BIOL 100 **PRINCIPLES OF BIOLOGICAL SYSTEMS**
Introductory course designed to emphasize the established fundamental principles common to all known forms of life. Topics for discussion include the origins of life forms (abiogenesis) on this planet, and the evolution and operation (metabolism and self-perpetuation) of such forms of life at various levels of biological organization. Comprehension of the principles including “complementarity between structure and function” is emphasized throughout. Designed as a science elective for Legal Education Institute students, available only on the Delaware Campus. 3 hours lecture. 3 semester hours

BIOL 101 **PRINCIPLES OF BIOLOGICAL SYSTEMS**
Introductory course designed to emphasize the established fundamental principles common to all known forms of life. Topics for discussion include the origin of life forms (abiogenesis) on this planet, and the evolution and operation (metabolism and self-perpetuation) of such forms of life at various levels of biological organization. Comprehension of the principles including “complementarity between structure and function” is emphasized throughout. Designed as a science elective for business, humanities, and social science students. 3 hours lecture. 3 hours laboratory. 4 semester hours

BIOL 102 **PRINCIPLES OF HUMAN BIOLOGY**
This is an introduction to the processes that normally occur in the human body. Anatomical and physiological considerations include the nervous and endocrine systems, the muscle and skeletal systems, the respiratory and digestive systems, the circulatory system, and the reproductive system. Designed as a science elective for business, humanities, social work, and social science students. Prerequisite: BIOL 101 or BIOL 107. 3 hours lecture. 3 semester hours

BIOL 104 **HUMAN PHYSIOLOGY LABORATORY**
The functions of the human body are studied, and investigative experiences are emphasized. Necessary biology and chemistry background are presented, and the principles of data collection and analysis are stressed. Exercise, muscle, nerve, digestive, and respiratory physiology are among the topics studied. Electro-encephalography is a technique used to gather data. This course is designed to satisfy a science laboratory requirement and may not be used to satisfy
major or minor requirements in any of the sciences. Prerequisite: BIOL 101 and BIOL 107. Corequisite: BIOL 102. 3 laboratory hours weekly. 1 semester hour

BIOL 107  BIOLOGY AND SOCIETY: BIOLOGY FOR AN ENGAGED CITIZENRY
This writing-enriched course for nonscience majors is designed to fulfill the lab science distribution requirement. The goals of the class are (1) to empower students (our future citizenry) to make informed decisions (2) by helping students to acquire the tools of gathering information (research), decision making, and persuasion. The class is centered on four topics: evolution, environmental pollution, biotechnology, and human populations and reproductive health. We encourage students to become engaged in issues regarding all four topics by assigning “action papers.” These action papers are letters sent to people in profit and nonprofit organizations and government agencies, and to politicians and other individuals in positions to take action on any of these matters. The letters request information, prompt certain actions, or express an opinion regarding a specific policy based on sound understanding of the science involved. Small inquiry groups conduct web-based research on these topics and present their findings in oral presentations/discussions to the class community. Each inquiry group and individual student writes a paper on each of the four topics. Course assessment is based on these assignments. 6 hours of lecture and laboratory. 4 semester hours

BIOL 109  MICROBES AND MAN
A course designed to introduce students to the important role microorganisms play in our daily lives. Topics include the structural and functional diversity of microorganisms, the history of microbiology, and the importance of microorganisms in medicine, industry, food and dairy products, and the environment. Three hours lecture. Designed as a science elective for business, humanities, and social science students. 3 hours weekly. 3 semester hours

BIOL 112  PLANTS, PEOPLE, AND THE ENVIRONMENT
An introduction to the diversity and uses of the plant kingdom and related organisms. The interdependence of plant and animal communities and the importance of plants and their products to the health and development of human society are discussed. Topics include classification; economically important plants—foods, medicines and drugs, building materials, ornamentals, etc.; native flora of the major biomes; and plant conservation. Several mandatory field trips are taken to local botanical gardens and natural areas as part of the laboratory component. This course is designed to satisfy a science laboratory requirement for nonscience majors and cannot be used to fulfill requirements for any major or minor in science. 3 lecture hours. 3 laboratory hours. 4 semester hours

BIOL 113  EVOLUTION
This course is designed for non-science majors interested in understanding the theory of evolution. An understanding of evolution requires knowledge of the scientific process, how hypotheses are formulated, and the definition of scientific theory. These topics are covered at the beginning of the course. Other topics include a discussion of the origin of life on earth, biographical information about Charles Darwin, discussion of his books, The Voyage of the Beagle and On the Origin of Species, the evidence supporting the theory of evolution, basic concepts in genetics, and a comparison between artificial and natural selection. The course concludes with a discussion of evolutionary developmental biology and human evolution. This course fulfills the science distribution requirement. Prerequisite: None. 3 hours lecture. 3 semester hours

BIOL 115  HUMAN NUTRITION
An introduction to the science of nutrition. Human nutrient requirements, nutrient absorption, malnutrition (overconsumption as well as underconsumption), recommended dietary guidelines, and topics of current interest are covered. Special attention is paid to helping the student evaluate his/her own nutrition practices. Designed as a science elective for nonscience majors. 3 hours lecture. 3 semester hours

BIOL 121  ANATOMY AND PHYSIOLOGY I
This is an integrated lecture/laboratory course. The principal animal used for dissection is the cat. Fundamental principles of biological systems are presented in the context of human anatomy and physiology. The cell as the fundamental unit of life is discussed and examined, including structure and metabolism. The organization of cells into tissues, tissues into organs, and organs into systems is thoroughly explored, and the integumentary, skeletal, muscular, and nervous systems are focal points of study. The somatic and special senses are examined, and the basic principles of endocrine and prostaglandin physiology are introduced. This course does not satisfy any biology or science elective requirements for a biology major. Prerequisite: CHEM 105–106 or CHEM 101–103. Corequisite: CHEM 102–104. 3 class hours and 3 laboratory hours weekly. 4 semester hours

BIOL 122  ANATOMY AND PHYSIOLOGY II
This course is a continuation of BIOL 121. The course examines the structure and function of seven organ systems: (1) endocrine system, (2) cardiovascular system, (3) lymphatic and immune system, (4) respiratory system, (5) digestive system, (6) urinary system, (7) reproductive system and inheritance. The course emphasizes structure and function relationships as well as the interaction among the organ systems. Many of the laboratory exercises involve the use of computerized data acquisition and computerized data analyses. This course does not satisfy any biology or science elective requirements for a biology major. Prerequisite: BIOL 121. 3 class hours and 3 laboratory hours weekly. 4 semester hours

BIOL 161  BIOLOGICAL CONCEPTS I—PRINCIPLES OF EVOLUTION AND ECOLOGY
This course is intended for biology majors and premedical students. The course, the first of the core curriculum, will center on evolution as the organizing principle of living systems which will form the framework for the problems and processes considered in courses II and III that follow. This course begins with Unit (1) Elements of Living Organisms, which will explore the biological, physical, and chemical principles that govern a living organism. The context in which these principles will be explored is the evolutionary origin of life on Earth. Unit (2) Biological Evolution will continue this evolutionary theme and will focus upon genetic mechanisms of inheritance and the resulting micro- and macroevolutionary processes. Unit (3) Ecological Systems of Life will elucidate organizational principles by which groups of interacting individuals form populations, ecological communities, and ecosystems. Contextual themes for this unit include the ecological significance of biodiversity, conservation ecology, and the global ecosystem consequences of our 6+ billion human population. 3 hours lecture. 3 hours laboratory. 1 hour discussion. 4 semester hours

BIOL 162  BIOLOGICAL CONCEPTS II—PLANT AND ANIMAL STRUCTURE AND FUNCTION
This course is intended for biology majors and premedical students. The course thoroughly explores the structure and function of the major organ systems of plants and animals and examines the diversity of solutions to ecological problems that these taxa have evolved. This course also explores the major evolutionary trends underlying the variation in (organ) systems’ structure and function and their integration and coordination along lineages of evolving animals and plants. Prerequisite: BIOL 161 and CHEM 145 or permission of instructor. 3 hours lecture. 3 hours laboratory. 1 hour discussion. 4 semester hours

BIOL 172  SERVICE LEARNING IN BIOLOGY: TEACHING CONCEPTS OF FRESHMAN BIOLOGY TO MIDDLE SCHOOL STUDENTS
Students travel to Smedley Middle School and offer life science enrichment education sessions for 6th, 7th, and 8th graders as part of an ongoing after school enrichment education program by the Chester Education Foundation. The goals and content of these enrichment sessions are closely aligned with ongoing middle school curricula in these classrooms, and are based on the content areas of the freshman major’s curriculum in biology at Widener (ecology, evolution, and plant and animal structure and function [BIOL 161 and 162]). These science enrichment sessions constitute “experiential service learning” for students. Prerequisite: BIOL 161. Pre- or corequisite: BIOL 162, or permission of the instructor. 3 hours classroom/lab time per week. 3 semester hours
BIOL 219  MICROBIOLOGY
An introduction to the basic principles of microbiology. The classification, structure, function, and metabolism of bacteria, fungi, algae, protozoans, and viruses are discussed. The role of microorganisms in human health and disease and the control of microbial growth is stressed. Prerequisite: BIOL 121–124; CHEM 105–106. Credit may be obtained for only one of the following: BIOL 219 or 319. 3 hours lecture. 3 semester hours

BIOL 220  MICROBIOLOGY LABORATORY
A laboratory course designed to introduce basic microbiological techniques. Topics include bright field and phase contrast microscopy, aseptic techniques, simple and differential bacterial staining methods, pure culture techniques, identification of unknown microorganisms, cultivation of bacterial viruses, serological methods, and the isolation and identification of microorganisms from clinical specimens. Corequisite: BIOL 219. 3 hours laboratory. 1 semester hour

BIOL 230  BIOLOGY OF CELLS AND GENES
This course is an exploration of the inner workings of eukaryotic cells. Students focus on structure-function relationships while examining organelles, cell physiology, intracellular communication, and the flow of information from DNA to protein (replication, transcription, and translation). Principles of classical genetics, molecular genetics, and the regulation of gene expression are considered. The laboratory emphasizes diagnostic and forensic applications of modern cell biological and genetic analysis. This course is intended for nonscience majors and is not open to biology majors. Prerequisite: BIOL 121, 122, and CHEM 101, 102. 3 hours lecture. 3 hours laboratory. 4 semester hours

BIOL 231  BIOLOGY FOR ENGINEERS
This course covers basic elements of cell and molecular biology, microbiology, and human anatomy and physiology. Specific topics include basic eukaryotic and prokaryotic cell structure, bioenergetics, gene expression and regulation, mechanisms of antibiotic action, microbial fermentation reactions, waste water microbiology, and the structure and function of four major human organ systems: nervous, muscular, cardiovascular and respiratory. Prerequisite: Sophomore-level engineering student. 3 hours lecture. 3 hours laboratory. 4 semester hours

BIOL 261  BIOLOGICAL CONCEPTS III—PRINCIPLES OF CELLULAR AND MOLECULAR BIOLOGY
This course is intended for biology majors and premedical students. The course, the third in the core curriculum, focuses on cellular and intracellular processes amongst all living organisms. Students examine cell physiology of both prokaryotes and eukaryotes. Topics include energy metabolism, such as fermentation, respiration and photosynthesis, and the core metabolic pathways, such as the biosyntheses of amino acids and nucleotide precursors. Special attention is paid to the flow of information from DNA to protein (replication, transcription, and translation) and the regulation of gene expression. The course also connects the ecological and physiological phenomena studied in the first two courses of the core to the fundamental intracellular processes that determine organismal performance. Prerequisite: BIOL 161, 162, and CHEM 102 or 146 or permission of instructor. 3 hours lecture. 3 hours laboratory. 1 hour discussion. 4 semester hours

BIOL 262  PRINCIPLES OF MODERN GENETIC ANALYSIS
This course focuses on the important concepts of classical, molecular, and population genetics. Discussion of Mendelian genetics is integrated with coverage of the relevant topics in cellular and molecular genetics. The course places special emphasis on problem solving skills and genetic analysis. Topics include the structure of genes and genomes across the wide range of living organisms; mechanisms of inheritance and recombination; gene expression and mutation; chromosome structure and the role of chromosomal changes in evolution; recombinant DNA technology and its application to modern biology; and population genetics and mechanisms of evolution. The laboratory includes experimentations with live organisms, including transmission of genetics in the fruit fly, Drosophila melanogaster, and genetic recombination in the bacterium, Escherichia coli. Exercises also include computer modeling of genetic systems and analysis of computer generated data. Each student clones and characterizes a restriction endonuclease fragment of the bacteriophage Lambda genome in an E. coli/plasmid vector system during a seven-week-long laboratory project. This project lab incorporates many of the basic tools of recombinant DNA technology. Prerequisite: BIOL 261 and CHEM 255. 4 semester hours

BIOL 297  RESEARCH DEVELOPMENT
This course is designed to familiarize the student with the fundamentals of developing a biological research program. Topics include an examination of the philosophy of science and scientific revolutions, literature review and bibliographic searching techniques, the design and implementation of a research project, and the written and graphical presentation of scientific material. Students may not receive credit for both BIOL 297 and BIOL 299. Sophomore standing or permission of the instructor is required. 2 hours lecture. 1.5 semester hours

BIOL 299  RESEARCH METHODS AND ANALYSIS
(SAME AS ENVR 299)
This course is designed to provide students with sufficient theoretical and practical knowledge to plan, conduct, evaluate, and present faculty-directed original research. Topics for discussion include the historical and philosophical development of scientific research, introduction to the scientific method, writing a research proposal, selection of research arena, qualitative and quantitative observations, sampling techniques, collecting, recording, summarizing, statistically analyzing, and graphically presenting data, bibliographic searching techniques, oral presentation of research, and writing a research paper. Prerequisite: sophomore standing in a science major and MATH 131/141 or permission of the instructor. 2 hours lecture. 3 hours laboratory. 3 semester hours

BIOL 301  INTRODUCTORY ECOLOGY
(SAME AS ENVR 301)
This course teaches ecological and environmental literacy. Participants will understand (1) the physical, biological, and evolutionary processes that determine ecosystem structure and function, and (2) the process of ecological inquiry that is the scientific method, through which natural phenomena are observed, interpreted, and reported. This course teaches students how to read global environmental signposts (climate changes, ozone depletion, and biodiversity loss), recognize their role in causing these trends, and evaluate the courses of action, in terms of consumer and disposer decisions, they must take in order to sustain themselves. Prerequisite: BIOL 262 or its equivalent, or permission of the instructor. 3 hours of lecture. 3 hours lab and field work. 4 semester hours

BIOL 302  CELL PHYSIOLOGY
Current understandings of cell structure and function are studied. Emphasis is placed on analysis of experimental results and study of the current research literature. Enzyme kinetics and the behavior of membranes are investigated in the laboratory. Quantitative aspects of cellular phenomena are a major focus. Prerequisite: BIOL 262 and CHEM 255. 3 hours lecture. 3 hours laboratory. 4 semester hours

BIOL 303  COMPARATIVE ANIMAL PHYSIOLOGY
Using an integrative and comparative approach, this course focuses on the basic principles and mechanisms of animal functions. A major goal of the course is the development of a qualitative and intuitive understanding of these basic principles and mechanisms. The experimental basis of animal physiology is the central theme of the course. The course examines specializations, ecological relationships, and behavioral characteristics of animals and emphasizes cellular and molecular topics throughout to underscore the importance of relating cellular activity to systemic functions. In the laboratory, students carry out a research project on basic animal physiology. Prerequisite: BIOL 261 and CHEM 255. 3 hours lecture. 3 hours laboratory. 4 semester hours

BIOL 306  DEVELOPMENTAL BIOLOGY
Students examine major events occurring in embryological development using examples taken from a wide range of organisms. Emphasis
is placed on recent experimental findings concerning initiation and regulation of development at the cellular and molecular levels. Relationships between development and evolution, as well as special topics from human embryology, are considered. In a laboratory sequence that focuses on plant and invertebrate models, students perform studies of comparative development and design and conduct independent experiments to elucidate developmental mechanisms. Prerequisite: BIOL 261 and CHEM 255. 3 hours lecture. 3 hours laboratory. 4 semester hours

**BIOL 307 COMPARATIVE VERTEBRATE ANATOMY**
A comparative study of the nine major organ systems found in vertebrates. Evolutionary and functional aspects of morphological differences among vertebrate groups are emphasized. The laboratory work primarily involves dissection and identification of anatomical structures found in fish and mammals. Where appropriate, amphibians, reptiles, and birds are also examined. Prerequisite: BIOL 261.3 hours lecture. 5 hours laboratory. 4 semester hours

**BIOL 308 GENERAL BOTANY**
This course covers several major themes in the study of botany. Topics include plant anatomy and physiology, plant evolution and genetics, plant classification and identification, and plant ecology. Major emphasis is placed on plant anatomy and physiology, and plant classification and identification. Students use live plants, preserved plant materials, and tissue slides to observe and experiment with plant anatomy and physiology. To observe and study plants in natural environments, students are expected to participate in some outdoor coursework, including one field trip. A research paper on a botanical topic of interest is required. Prerequisite: BIOL 261 or permission of the instructor. 3 hours lecture. 3 hours laboratory. 4 semester hours

**BIOL 309 ZOOLOGY**
This course explores the vast diversity in form and function found in the invertebrate phyla. The interactions between invertebrate morphologies and the ways in which invertebrates interact with their environments are emphasized. The evolutionary relationships between the phyla and the major hypotheses regarding the origins of major taxonomic groups are also examined. The laboratory consists of observation and experimentation with live examples of many invertebrate phyla. Prerequisite: BIOL 262 or permission of instructor. 3 hours lecture. 3 hours laboratory. 4 semester hours

**BIOL 310 MOLECULAR BIOLOGY**
An investigation of the regulation and control of cellular processes at a molecular level. Emphasis is placed on analysis of experimental results and study of the current research literature. The laboratory exposes the student to the methods of molecular biology, including gel electrophoresis, affinity chromatography, Western and Southern Blots, Polymerase Chain Reaction, and nucleic acid sequencing. Prerequisite: BIOL 262 and CHEM 255, or permission of instructor. 3 hours lecture. 3 hours laboratory. 4 semester hours

**BIOL 311 PLANT PHYSIOLOGY**
This introduction to the metabolism of green plants emphasizes photosynthesis, respiration, fermentation, and the role of growth regulators from a cellular point of view. Mineral nutrition and water absorption and transport in higher plants are discussed in lesser detail. Group experiments are performed in the laboratory. Prerequisite: BIOL 308 and CHEM 255, or permission of the instructor. 3 hours lecture. 3 hours laboratory. 4 semester hours

**BIOL 313 MECHANISMS OF EVOLUTION**
In this presentation of modern evolutionary theory, the mechanisms, processes, and patterns of evolution are emphasized. The history of evolutionary thought and its impact on the development of the biological sciences is explored. This course is intended to integrate and expand evolutionary concepts from population biology, genetics, ecology, and phylogenetic systematics. Prerequisite: BIOL 262, or permission of instructor. 3 hours lecture. 3 hours laboratory. 4 semester hours

**BIOL 314 DEVELOPMENTAL NEUROBIOLOGY**
The precise and reproducible connections between nerve cells allow animals to execute simple and complex behaviors. Research using model organisms has revealed a common set of molecular mechanisms underlying neural development. Uncovering processes through which undifferentiated cells adopt diverse neuronal identities is key to understanding nervous system development and function. A comparative approach to better understand nervous system development using model organisms like nematodes, fruit flies, and zebrafish enables students to explore evolutionarily conserved genetic pathways and molecular mechanisms in detail. Prerequisite: BIOL 261 and CHEM 255. 3 hours lecture. 3 hours laboratory. 4 semester hours

**BIOL 315 BIOMECHANICS**
Biomechanics is the study of the physical design of biological organisms. This course explores the diversity of form in members of all kingdoms of life in the context of function in the physical world. Physics and materials analysis concepts relevant to biomechanics will be explored. Several specific areas are examined in detail, such as locomotion at low Reynolds number, biomechanical design of trees, and functions of the arthropod exoskeleton. Prerequisite: BIOL 261. Pre- or Corequisite: PHYS 142 or 232. 3 hours lecture. 3 hours laboratory per week. 4 semester hours

**BIOL 317 ANGIOSPERM TAXONOMY**
SAME AS ENVRT 317
An introductory study of the classification, nomenclature, and identification of 30–40 common families of flowering plants, with particular emphasis on the local native flora and nearby areas. Field trips and plant collection are required. Prerequisite: BIOL 261. 3 hours lecture. 3 hours laboratory and field trips. 4 semester hours

**BIOL 319 PRINCIPLES OF MICROBIOLOGY**
A lecture and laboratory course in microbiology for biology majors and premedical students. The classification, structure, function, and metabolism of the major groups of microorganisms including prokaryotes, eukaryotes, archaebacteria, and viruses are discussed. The course places special emphasis on the relationship between microorganisms and man. Topics include host parasite relationships, the immune system, and the role of microorganisms in human diseases. Prerequisites: BIOL 262 and CHEM 255/257. Credit may be obtained for only one of the following courses: BIOL 219 or BIOL 319. 3 hours lecture. 3 hours laboratory. 4 semester hours

**BIOL 320 IMMUNOLOGY**
This is a discussion of both cellular and humoral immunity and their interrelationships. The first half of the course will specifically address cells of the immune system, their lymphokine products, structure and function of antigens and antibodies, and the production and use of monoclonal antibodies. The second half of the course examines mechanisms of microbial virulence and host immune response, tolerance, autoimmunity, trends in vaccine development, allergy, immunodeficiency diseases, and the human immunodeficiency virus. The laboratory part of the course will include exercises in the areas of basic histology, immunofluorescence microscopy, cell culture, monoclonal antibody production, purification, quantitation, and the response of lymphoid tissue to bacterial pathogens and inert particulate antigens. Prerequisite: BIOL 261. 3 hours lecture. 3 hours laboratory. 4 semester hours

**BIOL 321 ADVANCED ANATOMY AND PHYSIOLOGY**
This course reviews in depth the structure and function of the major organ systems of the human body: integumentary, skeletal, muscular, respiratory, cardiovascular, excretory, digestive, neurosensory, endocrine, immunological, and reproductive. Special emphasis is placed on how the various organ systems are interrelated and the homeostatic control mechanisms, which maintain a healthy individual. This course does not satisfy any biology or science elective requirements for a biology major. Prerequisites: CHEM 105 or equivalent; two courses in biology, at least one of which must be a course in anatomy and physiology. Corequisite: CHEM 205. 3 hours lecture. 3 semester hours

**BIOL 325 HUMAN PHYSIOLOGY**
Currently, human physiology is a rapidly advancing field of study largely due to the advances that occurred in the last three decades in the fields of cell and molecular biology. This course emphasizes the function of organ systems and their impact on whole body functions as well as the molecular and cellular mechanisms underlying them.
The course is designed to facilitate the acquisition of problem-solving and high-level cognitive skills in the context of human physiology. The course is divided into six units; each unit corresponds to one or two physiological systems. The units are (1) cell physiology, (2) excitable tissue (muscular and nervous systems), (3) the endocrine system and bioenergetics, (4) the cardiovascular and respiratory systems, (5) urinary system (kidney function; fluid, electrolyte, and acid-base balance), and (6) the digestive system. Many of the laboratory exercises involve use of computer models, computerized data acquisition, and computerized data analyses. Prerequisite: BIOL 261, CHEM 255. 3 hours lecture. 3 hours laboratory. 4 semester hours

BIOL 327 FUNCTIONAL ANATOMY OF MAMMALS
The course will focus on form-function relationships in extant mammals and related fossil forms. The course will survey the morphology of all the mammals, with special emphasis on insectivores, carnivores, rodents, primates, and ungulates (mammals with hooves). The goal is to familiarize students with the diversity of form in mammals and to correlate that variation with differences in behavior and ecology. Particular attention will be paid to the morphology of the musculoskeletal, digestive, and neurosensory systems in the context of locomotion and acquisition of food. The laboratory will allow for detailed morphological examination of a rodent, a carnivore, and an ungulate herbivore, as well as field trips to examine mammals in the field and in captivity. Prerequisite: BIOL 261. 3 hours lecture. 3 hours laboratory. 4 semester hours

BIOL 329 BIOINFORMATICS (SAME AS CSCI 329)
This course introduces the basic computational concepts and methods used in molecular biology and molecular genetics, and introduces students to the analysis of genetic sequences. The course discusses available computational tools for extracting biological information from DNA and protein sequences. It also provides a brief introduction to bioinformatics algorithms. The course teaches Biopython (Python for computational molecular biology) programming language in the UNIX environment. Does not satisfy upper-division biology elective requirement. Prerequisite: BIOL 262. 3 hours lecture. 5 hours laboratory. 4 semester hours

BIOL 340 TROPICAL ECOLOGY (SAME AS ENV R 340)
This course examines the nature, evolution, structural and functional components, and relationships that exist within tropical forests worldwide. A broad range of topics covering the physical, biological, and chemical aspects of tropical environments are explored. Specific topics include forest succession and architecture, tropical microclimate, vertical organization of canopy biota, evolution of tropical plants, tropical parasites, decomposition and nutrient cycling, plant/animal coevolutionary interactions, survival strategies, and the evolutionary history of tropical forests. This course is open to upper-division biology and environmental science majors. Prerequisites: BIOL 161, 162. 3 hours lecture. 3 semester hours

BIOL 342 TROPICAL ECOLOGY LABORATORY (SAME AS ENV R 342)
This laboratory course is the field component of BIOL/ENV R 340. Students design and carry out a research project that is completed during a one-week fieldtrip experience in a tropical forest environment. Students develop a research question and conduct an extensive literature search on a topic pertaining to tropical ecology prior to traveling to the research site. Students work closely with the instructor(s) to ensure that they are able to complete a project during the week-long field experience. After the project has been completed, students are responsible for analyzing and writing their results as if they intend to submit their research to a journal for publication. Students present their findings to the Widener community or at a regional or national meeting. This course is open to upper-division biology and environmental science students. Upper-division students from other majors within the sciences may be allowed to enroll with the permission of the instructor. Prerequisites: BIOL 161, 162. Corequisite: BIOL/ENV R 340. A total of 35 hours prior to the field experience and 45 hours in the field. 2 semester hours

BIOL 399 INDEPENDENT STUDY
Individual investigation of a problem in biology. Projects are smaller in scope than those undertaken in BIOL 499. Lab work, computation, readings, and orals as appropriate. Scope, topic, and prerequisites to be arranged individually. Credit to be arranged

BIOL 401 PHYSIOLOGICAL ECOLOGY OF EXTREME ENVIRONMENTS: LIFE AT THE EDGE
This course focuses on the evolutionary adaptation of physiology to the problems posed by the biophysical extremes of this world including warm deserts, arctic and alpine environments, freshwater and saline wetlands, deep sea environments, and human-disturbed environments. Although topics represent the extremes of this world, an important message is that all environments are variable and the rules at the extremes apply everywhere—life is always at the edge. The course includes a project-oriented lab that uses methods available to teach the processes of physiological inquiry described in this course. Prerequisites: BIOL 261 or instructor’s permission. 2 hours lecture. 6 hours laboratory. 4 semester hours

BIOL 405 HISTOLOGY
This course is a comprehensive study of the microscopic and submicroscopic structure of mammalian tissues. Emphasis is also placed on the function of cellular structures and recent research findings in the area of cell biology. Enrollment is limited to those with an undergraduate degree in biology or matriculants in the graduate program in physical therapy. Undergraduate biology majors may enroll with permission of the chair of biology. 3 hours lecture. 7 three-hour laboratories. 3 semester hours

BIOL 408 SENIOR THESIS PROPOSAL
Development of a research proposal for senior thesis. Proposal must be approved by a thesis committee for successful completion of the proposal. Prerequisites: BIOL 262 and 297 or 299. 1 semester hour

BIOL 409, 410 SENIOR THESIS IN BIOLOGY I AND II
Independent biological research based on a proposal developed in BIOL 408. Prerequisite: BIOL 408. 2 semester hours each

BIOL 419 APPLIED AND ENVIRONMENTAL MICROBIOLOGY (SAME AS ENVR 419)
A lecture and laboratory course in microbial ecology and applied microbiology. The role of microorganisms in the environment is studied with emphasis on their roles in the biogeochemical cycles of the elements essential for life. Applied topics such as the microbiology of foods, fermentation, antibiotic production, and other industrial processes are discussed. The laboratory involves the study of microorganisms isolated from various environmental samples. Prerequisite: BIOL 261 and CHEM 255, 257. 8 hours weekly. 2 hours lecture. 6 hours laboratory. 4 semester hours

BIOL 490 BIOLOGY INTERNSHIP
This subject-related work experience or other activity is offered only upon special application from the student and a supervising faculty member. Approval must be obtained in advance from the biology faculty and requires a specific outline of work to be done; the nature and extent of its academic relevance; and the academic and special preparation of the student for the proposed activity. Written approval must be obtained from the employer/sponsor, and arrangements must be made for regular contact between the student and the supervising faculty member. The student is responsible for making all arrangements. A final report must be submitted upon completion of the activity, and a pass/fail grade will be assigned. The number of semester hours earned will depend on the extent of the approved activity (12 semester hours corresponds to full-time work for a semester). Prereq-isites: Junior or senior standing, a GPA of at least 2.5 both in the major and cumulative in all courses, and approval of both the academic advisor of the student and the head of the Science Division. 3–12 semester hours

BIOL 499 INDEPENDENT STUDY
This is an individual investigation of a problem in biology. Lab work, computation, readings, and orals as appropriate. Scope, topic, and prerequisites to be arranged individually. Credit to be arranged

BIOL 188, 288, 388, 488, 588 SPECIAL TOPICS IN BIOLOGY
Topics offered in response to student and/or faculty interest. 3 semester hours each
BUSINESS ADMINISTRATION

BUS 110 INTRODUCTION TO BUSINESS CONCEPTS
This is an introductory course for freshman business students and students who may be undecided about their choice of major at Widener. The objective of this course is to excite and challenge students about the prospect of majoring in business and entering a business career. The course provides a basic grounding in business fundamentals emphasizing the integrated nature of management and how business relates to other subjects in the curriculum. Another objective of this course is to encourage students to grow and develop in their understanding of themselves, their relationship with others, and uses of team, communication, and leadership skills. Students with significant business experience may be eligible for a waiver for this course. Open to freshmen, or with permission of the SBA assistant dean. 3 semester hours

BUSINESS LAW

BLAW 150 LEGAL AND ETHICAL ENVIRONMENT OF BUSINESS
This course includes an examination of the contemporary legal and ethical environment as it relates to the formation and management of business and other organizations. A study of the major classifications of the law such as civil law, criminal law, constitutional law, and administrative law, as well as a review of our legal system, is therefore necessary. Emphasis is placed on recent legislation governing areas such as employment, consumer rights, and environmental issues, as well as the ethical dilemmas that are present in the modern business organization. This course is required of all majors in the School of Business Administration. 3 semester hours

BLAW 260 BUSINESS LAW
This course is designed to supplement BLAW 150 in providing the necessary legal education for the accounting major, and is also highly suggested for all other students, especially other business majors. The course covers many of those legal areas that affect a business in daily operations. Among the topics included are an in-depth treatment of contract law, the Uniform Commercial Code, and debtor-creditor relationships. The course is offered only in the spring semester. Prerequisites: Sophomore standing. Students interested in taking the CPA exam should take this course. 3 semester hours

BLAW 280 SPORTS AND THE LAW
(formerly SMGT 280)
This course includes an analysis of the legal process within the sport enterprise. A historical overview of the changes in sport law and the factors that have influenced them are discussed. Additionally, there is an in-depth analysis of contract law, tort law, constitutional law, administrative law, antitrust law, labor law, collective bargaining, and arbitration as it relates to sports. Issues dealing with both amateur and professional athletics are included. Among the more recent developments being studied are discrimination in amateur athletics and the role of free agency in professional sports. The approach used includes lectures, discussions, class presentations, guest lectures, films, and possible field trips. An emphasis is to be placed on conveying to the student an understanding of the role of the law in sports and not on replacing the role of the attorney with self-representation. 3 semester hours

BLAW 288 BUSINESS LAW FOR STUDENTS OF CRIMINAL JUSTICE
This course is designed as a supplement to the criminal justice curriculum. It is a required course for the Certificate of Accounting for criminal justice majors. Students become familiar with areas of the law that may affect them in the everyday rigors of their profession. The course begins with an in-depth analysis of the Constitution and the potential violations of rights that could occur. A discussion of various aspects of the law as they affect today's businesses follow. Included is a review of the law of business organizations, employment law, consumer protection, antitrust law, securities regulations, and environmental protections. Aspects of the UCC that might have an impact on the criminal justice major, such as the Law of Sales and Negotiable Instruments, is also considered. Emphasis is placed on the legal and ethical ramifications of the above topics by using classroom methods that include lectures, discussions, role-plays, and debates. Prerequisite: none. 3 semester hours

BLAW 351 EMPLOYMENT LAW
This course is designed to meet the needs of business majors, students in the social sciences, or students in the field of human resources. It provides an overview of the legal protection provided to the employer-employee relationship, including a study of various pieces of legislation, such as the Fair Labor Standards Act, Occupational Safety and Health Act, ERISA, etc. The course focuses on legal issues concerning discrimination on the basis of gender, age, race, and health. A study of the field of labor-management relations is also included. Emphasis is placed on the rights and duties of the employee as well as those of the employer. Legal and ethical dilemmas will be considered. Prerequisite: Junior standing. 3 semester hours

BLAW 357 CONTEMPORARY CONSUMER LEGAL ISSUES
This course provides an intensive review of special topics in consumer protection law. The common law concerning fraud is reviewed at the outset, followed by a review of relevant legislation. The Federal Trade Commission Act is analyzed, and the Truth-in-Lending Act is studied. Other topics include a study of state lemon law acts, state provisions for small claims, and consumer protection statutes in real estate. Implied warranties of habitability and other implied warranties in real estate, such as warranties for environmental safety, are considered. The course requires field work. Students are required to do case studies of actual businesses, which must correspond to the consumer laws under consideration. Written reports of these studies are presented to the class. Prerequisite: Junior standing. 3 semester hours

CHEMISTRY

The term “prerequisite” in a chemistry course description means that any course(s) so listed must have been completed with a grade of at least D prior to the start of the course in question.

CHEM 97 DEVELOPMENTAL CHEMISTRY
This course is designed for students with weak math and problem solving skills. It is intended to prepare students for CHEM 145. The development of problem-solving skills, and the introduction of basic chemical concepts is emphasized. Does not satisfy the general education or distribution requirement in science. 1.5 semester hours

CHEM 100 CHEMISTRY AND EVERYDAY LIFE
This course introduces chemical concepts and how they impact human beings in their daily activities. The goals of the course are to develop an appreciation for the molecular world and the fundamental role it plays in daily life and to develop an understanding of the major scientific and technological issues affecting our society. The course discusses matter, atomic theory, bonding, molecular structure, acids and bases, states of matter, and organic chemistry. Other topics include the role that chemistry plays in energy production, especially from fossil fuels and alternative fuel sources, and in the structure and properties of polymers and plastics including recycling issues. Designed as a science elective for business, humanities, and social science majors. Students may not receive credit for both CHEM 97 and SCI 107. CHEM 111 is a laboratory course designed to accompany this course, but students are not required to take both the lecture and the laboratory course. Prerequisite: MATH 101 or satisfactory performance on the Mathematics Placement Test. 3 semester hours

CHEM 101 INTRODUCTION TO CHEMISTRY I
This course is designed for students who are in a nonscience prephysical therapy major and students who do not intend to major in science or engineering. The various principles of chemical behavior are discussed and correlated with other sciences. Topics include bonding, structure, reactivity, stoichiometry, gas laws, solutions, solubility, equilibrium, energy relationships, periodic table, an introduction to organic chemistry, and hydrocarbons. The combination of both CHEM 101 and 102 is equivalent to CHEM 105. Prerequisite:
MATH 101 or satisfactory performance on the Mathematics Placement Test. CHEM 101 must be taken concurrently with CHEM 103. 3 hours lecture. 1 hour recitation. 3 semester hours

CHEM 102 INTRODUCTION TO CHEMISTRY II
This course is a continuation of CHEM 101 and is designed for non-science students who are in a pre-physical therapy major. The first part is devoted to establishing the fundamental structure, properties, and chemistry of a variety of organic functional groups. This background is then applied to the study of the chemistry of biological systems. Emphasis is placed on carbohydrates, lipids, proteins, hormones, enzymes, and nucleic acids. Prerequisite: CHEM 101 and 103. CHEM 102 must be taken concurrently with CHEM 104. The combination of both CHEM 101 and 102 is equivalent to CHEM 105. 3 hours lecture. 1 hour recitation. 3 semester hours

CHEM 103 INTRODUCTION TO CHEMISTRY LABORATORY I
This laboratory course is closely coordinated with CHEM 101 and serves to illustrate the principles examined in that course. Qualitative and quantitative experiments involving primarily organic and biological systems are carried out. The combination of both CHEM 103 and 104 is equivalent to CHEM 106. CHEM 101 must be taken concurrently with CHEM 103. 1 semester hour

CHEM 104 INTRODUCTION TO CHEMISTRY LABORATORY II
This laboratory course is closely coordinated with CHEM 102 and serves to illustrate the principles of organic and biochemistry examined in that course. Qualitative experiments involving primarily organic and biological systems are carried out. The combination of both CHEM 103 and 104 is equivalent to CHEM 106. CHEM 102 must be taken concurrently with CHEM 104. 1 semester hour

CHEM 105 GENERAL, ORGANIC, AND BIOCHEMISTRY
Designed for nursing majors and students who do not intend to major in science or engineering. This course presents principles of chemical constitution and their relation to chemical, physical behavior with particular emphasis on compounds of biological interest. Topics include atomic structure, chemical bonding, properties of gases and solutions, acid/base equilibria, organic functional groups and their reactions, and properties of biologically important molecules—proteins, carbohydrates, nucleic acids, and lipids. Nursing majors are required to take CHEM 106 concurrently with CHEM 105. Prerequisite: MATH 101 or satisfactory performance on the Mathematics Placement Test. 3 hours lecture. 1 hour recitation. 3 lab hours

CHEM 106 GENERAL, ORGANIC, AND BIOCHEMISTRY LABORATORY
A laboratory program closely coordinated with and designed to accompany CHEM 105. Experiments develop basic principles of laboratory technique with an emphasis on observations and measurement. Qualitative and quantitative characterizations and syntheses are performed. Nursing majors are required to take CHEM 106 concurrently with CHEM 105. The combination of both CHEM 103 and 104 is equivalent to CHEM 106. Prerequisite: MATH 101 or satisfactory performance on the Mathematics Placement Test. Corequisite: CHEM 105 or successful completion of CHEM 105. 3 laboratory hours. 1 semester hour

CHEM 111 IMPLICATIONS OF CHEMISTRY LAB
This laboratory augments the topics covered in CHEM 100 and highlights their applications to everyday life. Readily available materials are used so that the activities can be easily adapted to use in elementary classrooms. This course supplements CHEM 100 for early childhood, elementary, and special education students and may not be used to substitute for CHEM 106 or 147. Pre- or corequisite: CHEM 100. 3 laboratory hours weekly. 1 semester hour

CHEM 125 INTRODUCTION TO FORENSIC SCIENCE
(SAME AS SCI 125)
This course is designed for a general audience and is open to all students who have interest in forensic science and how chemistry plays an important role in this field. The course and its laboratory content include the scope of forensic chemistry, types of physical evidence, and techniques in the identification and analysis of physical evidence. Laboratory experiments involve analyzing a simulated crime scene using chemical techniques. The course is a required course for the forensic chemistry concentration and it will be available as a science distribution course with lab. Prerequisite: None. 2 hours lecture. 2 hours laboratory. 3 semester hours

CHEM 145 GENERAL CHEMISTRY I (FORMERLY FUNDAMENTALS OF CHEMISTRY I)
This is the first semester of a two-semester introductory chemistry sequence for science, engineering, and pre-med programs. Topics include elements, atomic structure, molecular structure, chemical reactions, stoichiometry, thermochemistry, gases, liquids, and solids. Prerequisite: MATH 101 or satisfactory performance on the Mathematics Placement Test. Corequisite: CHEM 147. 3 hours lecture. 1 hour recitation. 3 semester hours

CHEM 146 GENERAL CHEMISTRY II (FORMERLY FUNDAMENTALS OF CHEMISTRY II)
This is the second semester of a two-semester introductory chemistry sequence for science, engineering, and pre-med programs. Topics include kinetics, equilibria, acid base reactions, aqueous equilibria, thermodynamics, and electrochemistry. Prerequisite: CHEM 145. Corequisite: CHEM 148. 3 hours lecture. 1 hour recitation. 3 semester hours

CHEM 147 GENERAL CHEMISTRY LAB I (FORMERLY FUNDAMENTALS OF CHEMISTRY I LAB)
This course provides the basic laboratory exercises in general chemistry correlated to the material in CHEM 145. Fundamentals of measurement and quantitative aspects of chemistry are emphasized. The course includes safe handling of solids and liquids, physical separations, inorganic syntheses, solution concentrations, gas laws, energy transfer, microscale reactions, and molecular models. Prerequisite: MATH 101 or satisfactory performance on the Mathematics Placement Test. Corequisite: CHEM 145 or successful completion of CHEM 145. 3 hours laboratory. 1 semester hour

CHEM 148 GENERAL CHEMISTRY LAB II (FORMERLY FUNDAMENTALS OF CHEMISTRY II LAB)
This course provides the basic laboratory exercises in general chemistry correlated to the material in CHEM 146. Fundamentals of measurement and quantitative aspects of chemistry are emphasized. The course includes basic concepts of physical chemistry, including colligative properties, kinetics, and equilibria, in addition to acid-based chemistry, coordination chemistry, and electrochemistry. The use of computers in data collection and analysis is emphasized. Prerequisite: CHEM 147. Corequisite: CHEM 146 or successful completion of CHEM 146. 3 hours laboratory. 1 semester hour

CHEM 255 ORGANIC CHEMISTRY I
An introduction to the basic principles of the chemistry of carbon compounds. The chemistry of a number of functional groups is examined, with emphasis on structure-reactivity correlations, reaction mechanisms, and spectroscopic methods of structure determination. Prerequisite: CHEM 146, 148. 4 class hours. 4 semester hours

CHEM 256 ORGANIC CHEMISTRY II
A continuation of CHEM 255, with more emphasis on structure, properties, and synthesis of a large number of classes of organic compounds. Prerequisite: CHEM 255. 4 class hours. 4 semester hours

CHEM 257 ORGANIC CHEMISTRY LABORATORY I
This laboratory course provides experience in basic techniques for the preparation, isolation, purification, interconversion, and determination of physical properties of the common classes of organic compounds. Prerequisites: CHEM 148. Corequisite: CHEM 255. 3 hours laboratory. 1 semester hour

CHEM 258 ORGANIC CHEMISTRY LABORATORY II
This laboratory course is devoted to qualitative organic analysis using traditional and instrumental methods. Prerequisites: CHEM 257. Corequisite: CHEM 256. 3 hours laboratory. 1 semester hour
CHEM 299 RESEARCH EXPERIENCE  
(FORMERLY INDEPENDENT STUDY)

The sophomore research experience provides an opportunity for students to participate in an independent, investigative research project as part of the requirements for the BS in chemistry. Students carry out novel laboratory or field research in the chemical sciences. A written report is required for completion of the course. Three hours of lab work are required per semester hour. Prerequisite: Permission of instructor. 1–4 semester hours

CHEM 320 INDUSTRIAL CHEMISTRY AND CATALYSIS

This course covers the chemical process industries. After a brief introduction to economics and logistics, the processes leading to the top 50 industrial chemicals are discussed and interrelated. The final product and intermediates are also discussed in light of a changing world feedstock supply. Other industries, including dye, drugs, and explosives are also covered. Catalysis, since it leads to a better selectivity and lower energy cost, is becoming more and more important and is included in some detail. Prerequisite: CHEM 255, 256. 3 semester hours

CHEM 332 ENVIRONMENTAL CHEMISTRY  
(SAME AS ENVR 332)

This course deals with the study of the sources, reactions, transport, effects, and fates of chemical species in the air, soil, and water environments; and the effect of human activity on these. Emphasis is placed on thermodynamics and kinetics of reaction cycles, and on quantitation of chemical species. Prerequisite: CHEM 255, 257. 3 semester hours

CHEM 365 ANALYTICAL CHEMISTRY

Students concentrate on equilibria with specific reference to ionic solutions including acid-base, complex ion, redox, and solubility equilibrium phenomena, with applications to the development of procedures for the analysis of inorganic systems. Prerequisite: MATH 131. Pre- or corequisite: CHEM 255. 3 class hours. 3 semester hours

CHEM 366 INSTRUMENTAL ANALYSIS

A study of instrumentation and its applicability to structural determination and chemical analysis is made. Included are elementary electronics and circuitry, electrochemical, spectrophotometric, and chromatographic methods. Prerequisite: CHEM 365, 385; or permission of instructor. Corequisite: CHEM 368. 3 class hours. 3 semester hours

CHEM 367 ANALYTICAL CHEMISTRY LABORATORY

The core of this laboratory course will focus on analyzing a diverse array of samples and matrices (biological, chemical, environmental, agriculture, and others) using classical analytical quantitative methods of analysis. Sampling, experimental design, data reduction methods, and computer applications are also included. Corequisite: CHEM 365. 3 laboratory hours. 1 semester hour

CHEM 368 INSTRUMENTAL ANALYSIS LABORATORY

This laboratory focuses on the optimization and application of different instrumental techniques, including computer interfacing, spectroscopy, chromatography, and electrochemistry. Emphasis is placed on instrumental techniques used for environmental and clinical applications. Computers are used extensively for analyzing and presenting data. Corequisite: CHEM 366. 3 laboratory hours. 1 semester hour

CHEM 375 INORGANIC CHEMISTRY

This course presents an introduction to the chemistry of the elements with a focus on chemical bonding, periodic properties and the chemistry of metals and non-metals. This course is intended to provide knowledge of the fundamental properties of important elements and their compounds. Major topics to be covered include the solid state, coordination compounds, materials chemistry and organometallic chemistry. Prerequisites: CHEM 145-148, 255, and 257.

CHEM 385 PHYSICAL CHEMISTRY I

This course provides a comprehensive study of the structure, properties, and interactions of matter. Equations of state, thermodynamics, thermochemistry, and both chemical and phase equilibria are examined in detail. A strong mathematics background is recommended. Prerequisites: CHEM 145–148, CHEM 255–258, PHYS 162, or permission of the instructor. 4 class hours. 4 semester hours

CHEM 386 PHYSICAL CHEMISTRY II

This course continues the examination of the structure, properties, and interactions of matter. Specific focus areas include molecular energy distributions, the kinetic theory of gases with introductory statistical mechanics, and quantum mechanics. Concepts are described in mathematical detail using calculus and differential equations. Prerequisites: CHEM 145–148, CHEM 255–258, PHYS 162, or permission of the instructor. 4 class hours. 4 semester hours

CHEM 389 PHYSICAL CHEMISTRY LABORATORY II

Fundamental concepts such as calorimetry, kinetics, and quantum state energy transitions determined spectroscopically are a sampling of the experiments implemented in this laboratory course. The materials covered are inclusive of both semesters of the physical chemistry lecture. Prerequisite: CHEM 385 or 386. 3 hours weekly. 1 semester hour

CHEM 390 CHEMICAL LITERATURE

The organization and efficient use of the chemical literature. Topics include the use of standard reference works, primary and secondary literature sources, and Chemical Abstracts. Computer searching of library and chemical database (e.g., STN) will be emphasized. Prerequisite: CHEM 255. 1 semester hour

CHEM 399 RESEARCH EXPERIENCE  
(FORMERLY INDEPENDENT STUDY)

The junior research experience provides an opportunity for students to participate in an independent, investigative research project as part of the requirements for the BS in chemistry. Students carry out novel laboratory or field research in the chemical sciences. A written report is required for completion of the course. Three hours of lab work are required per semester hour. Prerequisite: Permission of instructor and junior standing. 1–4 semester hours

CHEM 408 SENIOR THESIS PROPOSAL

Development of a research proposal for senior thesis. Proposal must be approved by a thesis committee for successful completion of the requirements of this course. Prerequisite: CHEM 256 and CHEM 258. 1 semester hour

CHEM 409/410 SENIOR THESIS IN CHEMISTRY I/II

Independent chemistry research based on a proposal developed in CHEM 408 in conjunction with a faculty advisor. An oral thesis defense presented to the thesis committee follows successful completion of the project. (The semester hours are not equal to the weekly class or laboratory hours. Research requires a substantial time commitment.) Prerequisite: CHEM 408. 2 semester hours each

CHEM 425 FORENSIC CHEMISTRY

This upper-level chemistry course is built on concepts of CHEM 125. The course covers chemistry topics most commonly applicable to the everyday functions of a crime laboratory professional. Students learn modern instrumental methods of analysis as applied to analyzing illicit drugs, combustibles in arson and fire investigation, gun-residues in fire-arms, toxins in toxicology, and DNA analysis. Prerequisites: CHEM 125 and CHEM 366, or permission of the instructor. Corequisite: CHEM 427. 3 hours lecture. 3 semester hours

CHEM 427 FORENSIC CHEMISTRY LABORATORY

This laboratory course provides experience in basic techniques for the applications of the principles, methods, and instrumentation of chemistry to forensic problems. It covers topics in chemistry most commonly applicable to the everyday functions of a crime laboratory professional. Prerequisites: CHEM 125 and CHEM 366, or permission of the instructor. Corequisite: CHEM 425. 3 hours laboratory. 1 semester hour

CHEM 447 SPECIAL TOPICS

A consideration of selected topics at an advanced level includes the areas of organic, inorganic, analytical, and physical chemistry. Subjects to be presented are determined by the mutual interests of students and staff. Prerequisite: junior or senior status and permission of instructor. 3 class hours. 3 semester hours

CHEM 454 POLYMER CHEMISTRY

An introductory course in the organic and physical chemistry of high polymers. The following topics are discussed: polymer synthesis,
molecular weight determinations, physical and mechanical properties of polymers, reactions of macromolecules, applications of specific polymer compositions. Prerequisite: CHEM 256, 386. 3 class hours. 3 semester hours

CHEM 456  BIOCHEMISTRY
This introduction to the structures, functions, and transformations occurring within living cells is in terms of established chemical principles. Emphasis is placed on the chemistry of biomacromolecules, thermodynamics, kinetics, and mechanisms of enzymatic reactions and selected aspects of molecular biology. Prerequisite: CHEM 256, 3 class hours. 3 semester hours

CHEM 461  ADVANCED SYNTHESIS AND SPECTROSCOPY
This course focuses on advanced synthesis and spectroscopic techniques. Applications of NMR, mass spectrometry, and Fourier Transform Infrared are studied. Advanced synthesis methods such as enantioselective Aldol reactions and Diels-Alder reactions, among others, will be discussed. Special emphasis is placed on understanding the theoretical basis of these instruments, operational techniques, the use of specialized methods to solve specific chemical problems, and the interpretation of spectral information. Prerequisite: CHEM 385 and 386, or permission of the instructor. Corequisite: CHEM 463. 1 lecture hour. 1 semester hour

CHEM 463  ADVANCED SYNTHESIS AND SPECTROSCOPY LABORATORY
Students design and carry out a multistep chemical synthesis and use advanced spectroscopic techniques to follow the progress of the synthesis. This requires understanding the theoretical basis for NMR, Mass Spectrometry, and Fourier Transform Infrared spectroscopy. Techniques include dry-box, vacuum-line techniques, and high resolution mass spectrometry; H-1, C-13, DEPT, COSY, HET-COR, and other NMR experiments. Corequisite: CHEM 461. 6 laboratory hours. 2 semester hours

CHEM 475  ADVANCED INORGANIC CHEMISTRY
An advanced overview of the chemistry of the elements. The course begins with an examination of chemical bonding in covalent, ionic, and metallic substances. It continues with a discussion of theories of acids and bases, the chemistry of the main group elements, coordination chemistry, and the chemistry of the transition elements. Prerequisite: CHEM 386 or permission of instructor. 3 semester hours

CHEM 477  ADVANCED INORGANIC LABORATORY
This laboratory course emphasizes advanced methods of synthesis (Schlenk-wear-dry-box, vacuum-line techniques) and characterization (FT-NMR, FT-IR, magnetic susceptibility, HPLC) in inorganic chemistry. Pre- or corequisite: CHEM 475. 3 laboratory hours. 1 semester hour

CHEM 485  BONDING THEORY
An introduction to modern theories of the chemical bond. The course begins by reviewing the principles of quantum mechanics, then applies these principles, with appropriate approximations, to simple model systems, to atoms, and to increasingly complicated molecules. Topics include molecular orbital theory, valence bond theory, Hückel theory, and molecular mechanics. Computer methods, particularly for semi-empirical and molecular mechanical calculations, will be emphasized throughout the course. Pre- or corequisite: CHEM 386 or permission of the instructor. 3 semester hours

CHEM 490  CHEMISTRY INTERNSHIP
This subject-related work experience or other activity is offered only upon special application from the student and a supervising faculty member. Approval must be obtained in advance from the chemistry faculty and requires a specific outline of work to be done; the nature and extent of its academic relevance; and the academic and special preparation of the student for the proposed activity. Written approval must be obtained from the employer/sponsor, and arrangements must be made for regular contact between the student and the supervising faculty member. The student is responsible for making all arrangements. A final report must be submitted upon completion, and a pass/fail grade will be assigned. The number of semester hours earned will depend on the extent of the approved activity (12 semester hours corresponds to full-time work for a semester). Prerequisites: Junior or senior standing, a GPA of at least 2.5 both in the major and cumulative in all courses, and approval of both the academic advisor of the student and the head of the Science Division. 3–12 semester hours

CHEM 499  RESEARCH EXPERIENCE (FORMERLY INDEPENDENT STUDY)
The senior research experience provides an opportunity for students to participate in an independent, investigatory research project as part of the requirements for the BS in chemistry. Students carry out novel laboratory or field research in the chemical sciences. A written report and an oral presentation (at projects day) are required for completion of the course. Four hours of lab work are required per semester hour. The program requires a minimum of three credit hours during the senior year. Prerequisite: Permission of instructor and senior standing. 1–4 semester hours

CHEM 188, 288, 388, 488, 588 SPECIAL TOPICS IN CHEMISTRY
Topics offered in response to student and/or faculty interest. 3 semester hours each

COMMUNICATION STUDIES

COMS 130  MASS MEDIA AND SOCIETY
This course examines the historical evolution and the present day structure and composition of the mass media and its related industries. It also briefly examines the impact of mass media on individuals and society and introduces students to mass communication research. 3 semester hours

COMS 180  PUBLIC SPEAKING & PRESENTATION
The course provides students with the skills needed to deliver compelling speeches and presentations. Students will learn to communicate information powerfully for both small groups and large audiences. 3 semester hours

COMS 213  VISUAL LITERACY
This course examines the structure and effectiveness of visual form and media (photography, film, television, digital and other kinds of images). It aims to develop students' perceptual, cognitive and analytical skills of how meaning is created visually. 3 semester hours

COMS 217  BROADCAST NEWS WRITING
This course surveys the basic tools and skills used in writing broadcast news. In addition to a theoretical overview, the course is also a skills class aimed at teaching writing for broadcast operations. Students are expected to learn competent reporting and writing techniques. Does not satisfy the general social science requirement. 3 semester hours

COMS 220  MEDIA LAW AND ETHICS
This course presents the basic principles of communications law and ethics. Major topics are explored through case studies utilizing, as appropriate, current issues. Both the ethics of decision-making and the legal status of decisions are studied. 3 semester hours

COMS 230  COMMUNICATION THEORY
Theories and research in many different areas of communication are introduced in this course. The first half of the course surveys theories and research in the fields of interpersonal, group, organizational, and public communication. The second half of the course focuses on mass communication theories (at both the individual and societal levels) and research. Prerequisite: COMS 130. 3 semester hours

COMS 251  FILM ANALYSIS (WE)
This course introduces students to the basic methods of film analysis. Methods of film production are examined with particular emphasis placed on the study of films as cultural products. This is a writing-enriched course. No prerequisite. 3 semester hours

COMS 260  BASIC VIDEO
This course introduces video concepts and production techniques. In combination with readings, screenings, and discussions, students begin hands-on experience. Principles of shooting and composition,
lighting, sound, and editing are examined and followed up with individual and group projects. This course does not satisfy the general social science requirement. Prerequisite: COMS 213. 3 semester hours

COMS 262 DIGITAL PHOTOGRAPHY
This course introduces fundamental principles and creative techniques used in digital still photography. Students are introduced to basic optics, lenses, and still camera operations. Other topics include composition, design, creative lighting, and visual sensitivity. Students learn the basics of Photoshop and digital photography hardware/software. Additional lab fee required. This course does not satisfy the general social science requirement. No prerequisite. 3 semester hours

COMS 264 LAYOUT AND DESIGN
This course introduces basic graphic design principles and how the computer can be used as a conceptual image producing tool. Students gain practical computer design experience using leading industry standard hardware and software. The study of design concepts introduced and how they may be applied to communications problems and issues. This course does not satisfy the general social science requirement. Prerequisite: COMS 213. 3 semester hours

COMS 265 RADIO PRODUCTION
This course introduces students to studio recording and digital audio editing. Students work on voicing and production techniques for radio, using microphones, and writing copy. Students produce public service announcements, radio promos, sound effects, newscasts, and more. Students also host their own radio show on student station WDNR during the course term. This course does not satisfy the general social science requirement. 3 semester hours

COMS 266 BASIC WEB DESIGN
This course is a basic course in web design. It introduces HTML and the DreamWeaver software program. Students learn principles of design that apply to web page publishing. This course does not satisfy the general social science requirement. 3 semester hours

COMS 275 INTRODUCTION TO PUBLIC RELATIONS
This course introduces the field of public relations, its functions and its various applications. It examines basic concepts and principles of public relations and the history of the field. The basic public relations process—research, planning, execution, evaluation—is applied to a course project. 3 semester hours

COMS 277 INTEGRATED MARKETING COMMUNICATIONS WRITING
This course covers advanced writing instruction and analysis of all types of public relations and advertising writing. Students emerge with a thorough understanding of persuasive writing and media relations, as well as a completed portfolio. Writing styles studied include news releases, backgrounders, fact sheets, television and radio advertisements, PSAs, brochures, and pitch letters. Special emphasis is placed on grammar, punctuation, editing, and rewriting. 3 semester hours

COMS 280 INTRODUCTION TO ADVERTISING
A thorough introduction to the field of advertising and examination of advertising as a socioeconomic force in modern society. Concepts and activities that form the foundations of a professional practice provide a picture of how advertisements are planned and executed. Media selection and consumer research are also introduced. 3 semester hours

COMS 285 FILM WRITING (WE)
This course examines the basics of writing for the screen. Topics include pitching, format, structure, dialogue, characterization, and the screen play as framework for production of a film/video. Students study how to create a story through editing, credits, and scene readings. The class is conducted as a workshop with all students reading, writing, viewing, and constructively critiquing the work of others. This is a writing-enriched course. 3 semester hours

COMS 290 INTERPERSONAL COMMUNICATION
This course introduces students to principles of interpersonal communication. The course examines basic verbal and nonverbal elements that affect communication between individuals in a variety of interpersonal and small group contexts: friendship, romantic relationships, marriage, the family, the social peer group, and the work group. 3 semester hours

COMS 295 DIRECTING FILM AND VIDEO
This course introduces basic theoretical and practical understandings of the pivotal role of the director in the creation of feature films and documentaries. Students learn to analyze the director’s input in the planning, scripting, shooting, and editing of film and video. They will understand how directorial decisions are made and what impact stylistic choices have in drama and documentary. They will also be equipped to think more critically about cinema language and the meaning of film texts. 3 semester hours

COMS 309 ADVANCED AUDIO
This course is an intensive studio workshop focusing on techniques of audio production and post-production. Students learn the technical and aesthetic aspects of sound and develop critical listening skills. Students prepare a “portfolio piece” representative of a professional project. Prerequisite: COMS 265. Does not satisfy the general social science requirement. 3 semester hours

COMS 316 MEDIA CRITICISM (WE)
This course examines the function and nature of media criticism. It examines how professional media critics view their work and how they compare and contrast with the academic media critic and the literary critic. Numerous examples of media criticism are viewed and analyzed to determine what makes for excellence and value in criticism. This is a writing-enriched course. 3 semester hours

COMS 317 BROADCAST NEWS PRODUCTION
This course introduces basic practices of electronic news production. Emphasis is placed on applying skills learned in the writing and studio core courses to broadcast news. Prerequisite: COMS 217, COMS 260. Does not satisfy the general social science requirement. 3 semester hours

COMS 330 POPULAR CULTURE
This course examines elements of American popular culture as symbols or texts that reflect both the society and the public. Contemporary cultural artifacts such as television shows, advertisements, and music videos are examined via a range of analytic approaches including: Freudian, Marxist, Semiotic, cultural, and post-modern. 3 semester hours

COMS 335 MASS MEDIA AND CHILDREN
This course acquaints students with the issues, theories, and research findings pertinent to children and the mass media. Classic and emerging issues and theories will be covered. The emphasis is on television, given its dominance among media competing for children’s attention, but the course also focuses on other media, including radio, newspapers, books, video games, and the internet. No prerequisite. 3 semester hours

COMS 360 ADVANCED VIDEO
This course is an intensive studio and field workshop with an emphasis on the pre-production, production, and post-production process. Students plan, script, shoot, and edit their independent projects. Students are encouraged to develop alternative views that both examine and challenge the conventions of commercial media. Digital nonlinear editing techniques and skills are introduced. Prerequisite: COMS 260. Does not satisfy the general social science requirement. 3 semester hours

COMS 362 PHOTOJOURNALISM
This course builds upon basic photographic skills and explores visual representations of people and events through an analysis of magazines and newspapers. The course relies on photo assignments with fixed deadlines as encountered by working photojournalists. Prerequisite: COMS 262. Does not satisfy the general social science requirement. 3 semester hours

COMS 364 COMPUTER GRAPHICS
This course presents advanced concepts about how an image effects and influences as it relates to advertising, image perception, and the internet. It begins with desktop publishing and moves to more advanced digital photo manipulation techniques. The Adobe Photoshop software application is used extensively along with other
industry leading software applications. Prerequisite: COMS 264, or permission of instructor. Does not satisfy the general social science requirement. 3 semester hours

COMS 367 TELEVISION WORKSHOP
This course introduces students to TV production techniques in a professional studio setting. Students are divided into production teams to conceptualize, script, direct, and produce news-oriented programming. Students are assigned both field production and studio production. Prerequisite: COMS 217, COMS 260. Does not satisfy the general social science requirement. 3 semester hours

COMS 368 INTERACTIVE MEDIA
This course is an in-depth study of critical aspects of interactive multimedia design and production. Through lectures, workshops, the Worldwide Web, and possibly field trips and outside speakers, this course explores the merging of electronic media, image, sound, video, and computer technology into an interactive experience. The student produces a CD-ROM that may include an interactive portfolio, entertainment CD-ROM, informational CD-ROM. Prerequisite: COMS 260 and COMS 264 or instructor’s permission. Does not satisfy the general social science requirement. 3 semester hours

COMS 375 PUBLIC RELATIONS CAMPAIGNS
This course reviews and evaluates various strategies and case studies in understanding public relations problems and solutions. Student teams design their own strategic public relations program for an actual client by incorporating various public relations tools. Prerequisite: COMS 275. 3 semester hours

COMS 380 ADVERTISING CAMPAIGNS
This course introduces the structure and design of a full advertising campaign from start to finish. Student teams apply advertising principles and practices to develop their own strategic campaign. Prerequisite: COMS 280. 3 semester hours

COMS 382 COMMUNICATION RESEARCH
This course teaches the goals, objectives, and methods of communication research. The relationship between theory and research is stressed. The course provides both a primer on designing, writing, and presenting primary communication research, as well as an overview of interpreting and evaluating research conducted by others. Both qualitative and quantitative research methods are introduced, including experiments, surveys, content analyses, focus groups, interviews, and participant observation. Prerequisite: PSY 385. 3 semester hours

COMS 390 ORGANIZATIONAL COMMUNICATION
This course introduces students to the field of organizational communications and its practices in both nonprofit and business organizations. The course is both theoretical and practical in nature. Students are expected to learn the basic understandings on which communication in organizations is founded and the skills to effectively communicate with audiences within and outside of organizations. Students are also exposed to organizational problems and communication solutions within those organizations. 3 semester hours

COMS 395 EDITING FILM AND VIDEO
This course introduces editing theory and digital editing practice. Students examine editing methods, styles, and ideas through readings and analysis of a variety of film/video examples. Students use the Final Cut Pro nonlinear editing facilities and read technical information on nonlinear editing practice. Students apply their understanding of editing styles and theories to the creation of editing projects. 3 semester hours

COMS 409/410 SENIOR CAPSTONE I/II
These courses feature an extensive research project. Students propose and carry out research in an area pertinent to their academic focus in community studies. Both semesters must be completed successfully. Prerequisites: PSY 385 and COMS 382. 6 semester hours

COMS 419 SENIOR CAPSTONE I/II CONDENSED
The COMS 409–410 sequence taken in one semester. Offered only in fall semester. Open only to December graduates or seniors who will be student teaching in the spring semester. Prerequisites: PSY 385 and COMS 382. 6 semester hours

COMS 420 COMMUNICATION STUDIES PRACTICUM
This course features actual experience in the mass media field. Students intern in a media-related industry such as a television station, newspaper or advertising agency. Students work six to eight hours per week on-site and keep daily logs of their activities. They are expected to tie their experience in the field with their academic experience in a 12–15 page term paper at the end of the semester. Limited to juniors and seniors. May be repeated once for credit. 3 semester hours

COMS 499 INDEPENDENT STUDY
Individual study for a limited number of specially qualified advanced students in consultation with a member of the communication studies faculty. Admission to the course is at the discretion of the faculty member who would be involved, and requires written permission of the faculty supervisor and the social science division head. 6 semester hours maximum credit

COMS 188, 288, 388, 488 SPECIAL TOPICS IN COMMUNICATION STUDIES
Topics offered in response to student and/or faculty interest. 3 semester hours

COMPUTER SCIENCE

CSCI 101 INTRODUCTION TO PERSONAL COMPUTERS
This course introduces microcomputer applications as tools for productive automation of work. It introduces the computer system and the operating system. It instructs the student in the rudiments of three popular software applications—word processing, spreadsheets, and presentation graphics. This course may not be taken by CSCI students. It is for students majoring in the liberal arts or teacher education and does not count toward satisfying the S/T distribution requirements. 3 semester hours

CSCI 102 ADVANCED SPREADSHEET
This course presents the concepts and uses of spreadsheet modeling using one of the most popular integrated software applications packages. Students examine and use many advanced techniques, including advanced spreadsheet concepts, graphics, database management and macros. This course may not be taken by CSCI majors. It is for students majoring in the liberal arts and sciences and does not count toward satisfying the S/T distribution requirement. Prerequisite: CSCI 101 or permission of the instructor. 3 semester hours

CSCI 125 ANIMATION AND VIRTUAL WORLDS WITH ALICE
In this course, students learn to create small virtual worlds and animations using Alice (http://alice.org), an innovative 3D programming environment. Using Alice, each student can be the director of a movie in which 3D objects in a virtual world move around according to the directions the student provides. Students discover how much fun it is to write computer animations by creating their own storyboards and movies. No previous experience with programming is required. 3 semester hours

CSCI 130 INTRODUCTION TO COMPUTER FORENSICS
Computer forensics is the scientific examination and analysis of data held on, or retrieved from, computer storage media in such a way that the information can be used as evidence in a court of law. This course introduces students to the fundamentals of computer forensics and cyber-crime scene analysis. The various laws and regulations dealing with computer forensic analysis are discussed. Students introduced to various computer forensics and steganography tools. This course is counted as a science elective. 3 semester hours

CSCI 131 INTRODUCTION TO PROGRAMMING
This introductory course is designed for the Arts and Sciences student who has no previous experience in programming. The Python language is used to work with lists, strings, arrays, and files using loops, user-defined functions, and Python library functions. 3 semester hours
CSCI 143  PROGRAMMING IN C
A study of the C programming language, including syntax and use in developing algorithms and implementing them for a variety of applications. Some previous experience with programming is desirable. Credit may not be received for both CSCI 143 and CSCI 151. 4 semester hours

CSCI 144  JAVA PROGRAMMING
A basic discussion of applets. Introduction to object-oriented terminology including encapsulation, inheritance, etc. and their function within Java. Development of Java building blocks: data types, variables, arithmetic expressions, arrays, conditional statements, and loops. Creation of classes and Java applications. Basics of applets; creating HTML pages that contain applets. Java classes for drawing shapes and characters. Basics of animation and interactivity. Prerequisite: CSCI 143, or experience in programming. 3 semester hours

CSCI 151, 152  INTRODUCTION TO COMPUTER SCIENCE I AND II
This course combines a thorough introduction to the C language with a survey of more advanced topics in computer science, such as database management, artificial intelligence, principles of computer networks, compiler design, etc. The supervised lab includes a graded sequence of exercises in C covering strings, arrays, files, pointers, and structures, pointers to structures, and arrays of structures. It also includes introductory exercises supporting the advanced topics. Three hours lecture; three hours laboratory. 4 semester hours each

CSCI 247, 248  DATA STRUCTURES AND ALGORITHMS I AND II
Stacks, queues, linked lists, trees, and heaps are treated theoretically and in the context of the Java language. The course includes an introduction to Java. Complexity analysis of algorithms including sorting and searching algorithms, graph algorithms, and recursion. Three hours lecture; one hour laboratory. Prerequisite for CSCI 247: CSCI 152 or CSCI 143. Corequisite for CSCI 247: MATH 151. Prerequisite for CSCI 248: CSCI 247 and MATH 151. 4 semester hours each

CSCI 264  ASSEMBLY LANGUAGE
This course is an in-depth study of a particular assembly language (currently the x86). The aim of the course is to illuminate the structure and behavior of computers. It covers arithmetic, logic, and stack operations, the general organization of a CPU, main memory, and peripheral systems. The structure of executable files, linking, interfacing assembler with a high-level language and the operating system, and protected instructions are also discussed. Supervised laboratory exercises are used to illustrate all the main topics of the course. Some familiarity with a high-level programming language is desirable. 4 semester hours

CSCI 329  BIOINFORMATICS (SAME AS BIOL 329)
This course introduces the basic computational concepts and methods used in molecular biology and molecular genetics, and introduces students to the analysis of genetic sequences. The course discusses available computational tools for extracting biological information from DNA and protein sequences. It also provides a brief introduction to bioinformatics algorithms. The course teaches Biopython (Python for computational molecular biology) programming language in the UNIX environment. 3 hours lecture. 5 hours laboratory. 4 semester hours

CSCI 331  QUANTUM COMPUTING I
This course is a basic introduction to quantum computing relying mainly on linear algebra. It includes a review of linear algebra as applied to quantum mechanics. The main concepts covered are qubits, quantum logic gates, and models of simple quantum computers. The models include those of Feynman, Benioff, and Deutsch and are used to create simulations of simple quantum computers. Prerequisite: PHYS 232 or PHYS 261. Corequisite: MATH 331. 3 semester hours

CSCI 332  QUANTUM COMPUTING II
This course is a continuation of CSCI 331. Topics covered include Shor’s algorithm for factoring numbers, teleportation of quantum states, and quantum cryptography, including error-correcting codes and code-breaking. Prerequisite: CSCI 331. 3 semester hours

CSCI 344  PROGRAMMING LANGUAGES
Comparative study of various programming languages (e.g., procedural, functional, and logic programming languages) from the user’s and the implementor’s view points; analysis and evaluation of data structures and control structures; syntax and semantics of programming languages; and design concepts of programming languages. Prerequisite: CSCI 248. 3 semester hours

CSCI 347  COMPUTER ARCHITECTURE I
(SAME AS EE 473)
An introduction to computer system architecture, evolution of computer systems, design of various functions using decoders, multiplexers and programmable logic devices (PLDs). Design and analysis of sequential circuits. Fixed and floating-point data representation. Register transfer language. Design of a basic computer and its programming. Design of hardwired and microprogrammed controllers. A case study of Intel® family of microprocessors and its programming. Prerequisite: CSCI 264. 3 semester hours

CSCI 348  COMPUTER ARCHITECTURE II
(SAME AS EE 474)
A continuation of CSCI 347 that includes design of I/O systems, memory hierarchy, memory connection to CPU, design of cache memory, virtual memory, memory management hardware, design of computer arithmetic algorithms and their hardware. Introduction to pipelining and RISC architecture, vector processing, and multiprocessor systems. Prerequisite: CSCI 347. 3 semester hours

CSCI 349  PARALLEL COMPUTING I
This course introduces students to the basic issues of parallel computing including the different models of parallel algorithms and interconnection networks that support them. The concept of message passing is covered. The performance trade-offs among different ways of paralleling an application are discussed, as well as different scientific and engineering applications that can benefit from parallel computing. With the aid of a Beowulf computer cluster, students design and implement parallel programs for a few of the applications. Prerequisite: CSCI 248. 3 semester hours

CSCI 350  PARALLEL COMPUTING II
A continuation of CSCI 349 Parallel Computing I. More advanced topics of parallel computing are discussed. This course also emphasizes more applications of parallel computing. At the end of the course, every student is required to complete a project for solving some problem pertaining to his/her academic field of study. Prerequisite: CSCI 349. 3 semester hours

CSCI 355  ARTIFICIAL INTELLIGENCE I
Basic concepts of tree searching, heuristic search, game playing, first-order logic knowledge representation, and automated reasoning are introduced in conjunction with a thorough study of programming in LISP. Recursion is emphasized. Logic programming is also discussed. Prerequisite: PHIL 120 and CSCI 248. 3 semester hours

CSCI 356  ARTIFICIAL INTELLIGENCE II
Various areas of artificial intelligence are introduced including vision processing, natural language processing, advanced and current topics in expert systems, mathematical theorem proving, machine learning, and neural network. Prerequisite: CSCI 355. 3 semester hours

CSCI 363  COMPUTATION, AUTOMATA, AND FORMAL LANGUAGES I
This is the first course in a two-course sequence in the theory of computing. It covers finite automata and regular expressions including Kleene’s theorem. Proofs are stressed. Prerequisite: CSCI 248 and MATH 152. 3 semester hours

CSCI 364  COMPUTATION, AUTOMATA, AND FORMAL LANGUAGES II
Completion of the study of the Chomsky hierarchy including pushdown automata, context free languages and parsing, Turing machines, and selected topics in computability and decidability. Prerequisite: CSCI 363. 3 semester hours
CSCI 371  COMPUTER GRAPHICS
Basic concepts of raster graphics algorithms and systems, interactive graphics, geometrical transformations, and 3D viewing. Advanced topics selected from representation of curves, surfaces, and solids; geometric modeling and graphics standards; color models; image synthesis including visible surface determination, shading, illumination, and ray tracing; modeling of texture, growth and change with fractals, grammar-based models, particle systems; animation; image processing and coding methods; high-performance hardware architectures including frame-buffer strategies and parallel processing. Prerequisite: CSCI 248. 3 semester hours

CSCI 373  SOFTWARE ENGINEERING
Study of methodologies for the development of large-scale software systems: requirements analysis, system design techniques, implementation, system testing, validation, and maintenance, particularly in a team-programming environment. Prerequisite: CSCI 248. 3 semester hours

CSCI 381  COMPUTER NETWORK I
Basic concepts of computer networks including network topologies, message, circuit and packet switching, communication protocols, and the 7-layered OSI Reference Model for communication architectures. Physical layer, including data communications over telephone networks, Fourir analysis of signals, frequency and time division multiplexing, modulation, filtering, modems, Nyquist and Shannon theorems. Prerequisite: MATH 142 and MATH 152. 3 semester hours

CSCI 382  COMPUTER NETWORK II
Continuation of CSCI 381. Medium-access sublayer and local area networks. Data Link layer; error detection and correction, and flow control. Network layer, routing and congestion control, and Inter-net-working. Discussion of transport, session, presentation, and application layers. Prerequisite: CSCI 381. 3 semester hours

CSCI 391  PRACTICAL CRYPTOLOGY
Cryptography is about creating and breaking codes. This course covers the historical development of cryptographic methods and cryptanalysis tools. Before modern cryptographic algorithms are discussed in detail, an overview of the classical encryption algorithms is given. Both symmetric (private key) and asymmetric (public key) encryption schemes are analyzed. The course also focuses on methods and algorithms for data integrity and authenticity and protection of information. Prerequisites/corequisites: CSCI 151 for MATH, CSCI, and CIS majors; CSCI 131 for science majors; EE 342 for engineering majors. 3 semester hours

CSCI 392  NETWORK AND COMPUTER SECURITY
This course is designed to extend coursework in practical cryptography and parallel computing. The course teaches topics in computer security, including topics in the theory of security and protocols for securing computer networks. This course includes lectures/presentations by guest speakers from the fields of computer and network security. Practical skills include the development of a security protocol, written for and implemented in a parallel computing environment. Prerequisite: CSCI 391. Corequisite: CSCI 248. 3 semester hours

CSCI 398  RESEARCH TOPICS
This course introduces students to potential research topics for the senior project. Students attend lectures given by members of the computer science faculty and begin preliminary research into the topic of their choice. By the end of the semester, students will develop a proposal for a project to be completed in CSCI 408/409. 1 semester hour

CSCI 408, 409  SENIOR PROJECT I, II
Design and implementation of a project approved by the faculty. Prerequisite: Senior standing. 2 semester hours each

CSCI 434  DATABASE SYSTEMS I
Study of the semantics, design theories, architecture and manipulation of relational database systems; review of hierarchical and network models; query processing and optimization strategies; principles of security, recovery and concurrency control. Projects will be assigned to use a commercially available database system. Prerequisite: CSCI 248. 3 semester hours

CSCI 435  DATABASE SYSTEMS II
The contents of this course include the theory of expert systems, logic programming and database systems, and their application to science problems. Emphasis is placed on new ideas and general concepts of knowledge base systems, including principles, architectures, techniques and tools, algorithms for efficient processing of queries, heuristic search in problem solving, inferences and reasoning, and current topics in database systems. Prerequisite: CSCI 434. 3 semester hours

CSCI 442  SIMULATION
Introduction to systems modeling and simulation with digital computers. Discrete event simulation as well as continuous systems simulation are studied. Model validation, error analysis and control in simulation experiments, programming model simulation and analysis of simulation results, introduction to simulation languages. Prerequisite: MATH 273, CSCI 248. 3 semester hours

CSCI 451  OPERATING SYSTEMS I
Basic concepts of operating systems. Process creation and control, scheduling of resources, interprocess communication, device, memory and file management, user interfaces. Lab assignments may include designing and implementing components of a multiprogrammed operating system, such as a command handler, a process control block manager, a process scheduler/dispatcher, an interprocess message handler, an interrupt handler, device drivers, dynamic memory allocation mechanisms, a page-fault handler, a file handler, and a multiprogramming executive. Prerequisite: CSCI 248. 3 semester hours

CSCI 452  OPERATING SYSTEMS II
Continuation of Operating Systems I. Source-code level study of the kernel of an operating system, such as UNIX. Distributed and real-time operating systems, virtual machines, reliability, security, performance analysis. Lab assignments include performance measurement with software and hardware monitors. Prerequisite: CSCI 451. 3 semester hours

CSCI 462  COMPI LER DESIGN AND CONSTRUCTION
As a companion course to CSCI 363, this course presents compiler construction theory and techniques including top-down and bottom-up parsing algorithms and attribute grammars. Prerequisite: CSCI 363. 3 semester hours

CSCI 490  COMPUTER SCIENCE INTERNSHIP
This subject-related work experience or other activity is offered only upon special application from the student and a supervising faculty member. Approval must be obtained in advance from the computer science faculty and requires a specific outline of work to be done; the nature and extent of its academic relevance; the academic and special preparation of the student for the proposed activity. Written approval must be obtained from the employer/sponsor, and arrangements must be made for regular contact between the student and the supervising faculty member. The student is responsible for making all arrangements. A final report must be submitted upon completion of the activity, and a pass/fail grade will be assigned. The number of semester hours earned will depend on the extent of the approved activity. 12 semester hours corresponds to full-time work for a semester. Approval: junior or senior standing, a GPA of at least 2.5 both in the major and cumulative in all courses, and approval of both the student’s academic advisor and the head of the Science Division. 3–12 semester hours

CSCI 499  INDEPENDENT STUDY
Students conduct independent assignments under faculty supervision. 1–4 semester hours

CSCI 188, 288, 388, 488, 588
SPECIAL TOPICS IN COMPUTER SCIENCE
Topics offered in response to student and/or faculty interest. 3 semester hours each
CREATIVE WRITING

CRWR 151 THE WRITING LIFE
This course provides students with an introduction to the discipline of creative writing. Students will read several works by writers who reflect on their own processes and begin establishing for themselves—through such practices as daily journaling—a writing life of their own. A project investigating the writing process of an established author will be required. 3 semester hours

CRWR 156 INTRODUCTION TO FICTION WRITING
(SAME AS ENGL 156)
This course introduces the beginning fiction writer to the technical aspects of the short story: setting, character, dialogue, point of view, and plot. In addition, each class emphasizes the aesthetic dimensions of language. Not open to students who have completed ENGL 306 or CRWR 306. 3 semester hours

CRWR 157 INTRODUCTION TO POETRY WRITING
(SAME AS ENGL 157)
This course introduces the beginning poet both to the aesthetic and qualitative dimension of poetry writing and to the technical and quantitative considerations of meter, form, rhyme, image, simile, metaphor, and symbol. Not open to students who have completed ENGL 307 or CRWR 307. 3 semester hours

CRWR 305 ADVANCED PROSE WRITING
(SAME AS ENGL 305)
An in-depth study of prose writing and creative nonfiction. Students will work on enhancing writing skills in such areas as journal writing, autobiography/memoir, creative nonfiction, specialized research projects, and the development of a writer's portfolio. Prerequisites: ENGL 101 or 103 required and ENGL 102 strongly recommended. 3 semester hours

CRWR 306 ADVANCED FICTION WRITING
(SAME AS ENGL 306)
Dialogue, characterization, plotting techniques, and analysis of the forms of short fiction are considered. Several short stories are written, as well as a number of short dialogues and descriptions. Prerequisites: CRWR 151 or 156. 3 semester hours

CRWR 307 ADVANCED POETRY WRITING
(SAME AS ENGL 307)
This course provides guided practice in composing verse, exercises in developing imagery and prosodic analysis, with the purpose of imparting an enriched understanding and appreciation of poetry, as well as inspiring creativity. Prerequisites: CRWR 151 or 157. 3 semester hours

CRWR 308 PLAYWRITING
(SAME AS ENGL 308)
Practice in writing one-act plays on assigned themes, with special attention to the tone of dialogue, techniques of exposition, and visualization of characters and scene. Prerequisites: ENGL 156, 157, 306, 307, or CRWR 151. 3 semester hours

CRWR 341 HUMOR WRITING
In this course, students learn how to write humorous poems, stories, and creative nonfiction essays. Satire, absurdist humor, gentle humor, and black humor are included. Writers such as Dave Barry, Eugene Ionesco, Flannery O'Connor, Barbara Pym, and Anne Sexton provide models for students' work. Prerequisite: CRWR 151 or other creative writing course. 3 semester hours

CRWR 351 THE CONTEMPORARY LITERARY SCENE
In this course, students examine developments in creative writing (fiction, poetry, drama, nonfiction) of the last 25 years. Special attention is devoted to thematic, stylistic, and structural concerns. Prerequisite: Previous creative writing course required. 3 semester hours

CRWR 361 WRITING FOR PUBLICATION
Students learn how to write for and publish in various kinds of publications. Small press and major press work will be examined in both print and on-line journals. In addition, students learn about the history of literary publishing in America and trends that will shape the future of publishing. Prerequisite: CRWR 151. 3 semester hours

CRWR 379 SPECIAL TOPICS IN CREATIVE WRITING
Various subgenres and technical aspects of creative writing are explored with each offering of this course. Subjects include historical fiction, regional writing, science fiction and fantasy, setting, and character. Prerequisite: Permission of instructor or previous creative writing course required. 3 semester hours

CRWR 409 SENIOR SEMINAR
(FOR CREATIVE WRITING MAJORS ONLY)
This capstone course allows creative writing majors the opportunity to revise work originally written in other creative writing courses and generate new work. Students create a 50-page creative writing portfolio, which includes a critical introduction that discusses such matters as influence, aesthetic issues, and the writing process. 3 semester hours

CRWR 188, 288, 388, 488, 588
SPECIAL TOPICS IN CREATIVE WRITING
Topics offered in response to student and faculty interest. 3 semester hours each

CRIMINAL JUSTICE

CJ 105 INTRODUCTION TO THE CRIMINAL JUSTICE SYSTEM
A general introduction to the study of the American system of criminal justice. The crime problem, the police, the judicial system, and correctional agencies are examined. Both the legal and behavioral realities of each stage of the criminal justice process are discussed and analyzed. 3 semester hours

CJ 185 CRIME AND JUSTICE IN AMERICA (HONORS)
This honors course examines the processes of justice in America from an analytical perspective. Law Enforcement, adjudication and punishment systems are examined with an emphasis on the competing models of "due process" and "crime control," and how such models are manifested in criminal justice practice. No prerequisite required. 3 semester hours

CJ 205 LAW ENFORCEMENT AND POLICE IN SOCIETY
An introduction to a range of historical, political, and sociological problems in institutions vested with the responsibility to enforce laws, and/or preserve order. Emphasis is also placed on the study of the relationship between police and the communities in which they serve. Prerequisite: CJ 105. 3 semester hours

CJ 210 CRIMINAL COURTS
An analysis of judicial decision making with an emphasis on the structure and performance of American trial and appellate courts. In addition to reviewing the basic legal concepts that underlie the criminal courts, students examine research findings on the behavior of judges, juries, prosecutors, defense attorneys, defendants, and other key actors in the judicial process. Prerequisite: CJ 105. 3 semester hours

CJ 215 THE CORRECTIONAL SYSTEM
A general overview of the American corrections system and a survey of today's most important correctional problems. Emphasis is placed upon the nature of the prison experience, alternatives to incarceration, judicial intervention in correctional affairs, and the controversy concerning the effectiveness of rehabilitation programs. Prerequisite: CJ 105. 3 semester hours

CJ 225 PRINCIPLES OF CRIMINAL INVESTIGATION
This course is an introduction to the fundamentals of the criminal investigation process. It is designed to provide students with an understanding of the investigative process, beginning with the detection of a crime and culminating with the presentation of the case in court. In addition to the basic investigative processes, students examine crime scene searches, including the proper procedures for recording, collecting, and preserving evidence. Students also identify the elements of crime, as defined in applicable state law, and incorporate the rules of evidence and criminal procedure as appropriate. Prerequisite: CJ 105. 3 semester hours
CJ 230  DOMESTIC VIOLENCE AND THE JUSTICE SYSTEM (SAME AS WS 230)
The main objective of the course is to introduce students to the subject of family violence, especially as it relates to the legal system in the United States. This will be accomplished by exploring (a) the historical roots of domestic violence, (b) social science theoretical perspectives, (c) the roles and the players, (d) the typical criminal prohibitions, (e) the experiences of victims who seek help from the court, religious, and medical authorities, and (f) efforts at developing prevention and intervention strategies. In addition, the course will seek to develop skills in students to find and evaluate information on family violence, especially as it is found in sociological sources and court records. 3 semester hours

CJ 235  GENDER, RACE, CLASS, CRIME, AND JUSTICE
This course focuses on how various dimensions of social stratification influence the nature and types of crimes committed, responses of the criminal justice system to such crime, and strategies for reform. With a primary emphasis on gender, race and class, students study not only the effects of stratifying factors on socialization, but also how such socialization processes relate to crime and society’s reaction to criminal deviance. Prerequisite: CJ 105. 3 semester hours

CJ 245  WOMEN AND CRIMINAL JUSTICE
(SAME AS WS 245)
This course explores theoretical and empirical research that relates to gender and criminal justice. The course is divided into three sections: women as offenders, women as victims, and women as criminal justice practitioners. Emphasis is placed on the intersection of victimization and offending for women and girls. Topics include the nature and pattern of criminal offending by women and girls, their treatment by the criminal justice system, and how their gender may influence their punishment. The course also addresses the experiences of women as survivors of domestic violence, sexual abuse, and sexual harassment. Additional topics include women’s experiences as law enforcement officers, attorneys, judges, and correctional officers. 3 semester hours

CJ 267  MEDIA, CRIME, AND CRIMINAL JUSTICE
(SAME AS COMS 267)
The purpose of this course is to provide an introduction to the study of the influence of the mass media, especially film and television, on public perceptions of crime and the effectiveness of the criminal justice system in contemporary America. Drawing on contemporary communications theory, the accuracy of media depictions of crime and the criminal, of the operations of criminal justice and the part played by media imagery in the cause or prevention of criminal behavior are subject to critical analysis. The role of the mass media in the construction of a collective image of crime and justice that is sharply at odds with real trends is explored in order to highlight the growing potential for conflict between public demand for crime control and the requirements of due process and the preservation of civil rights and personal freedom. Prerequisite: CJ 105 or COMS 130, or instructor’s permission. 3 semester hours

CJ 285  ORGANIZED CRIME
This course addresses that branch of criminality commonly known as “organized crime.” Discussions focus on a more precise understanding of the term itself, as well as the various forms this type of criminal deviance has taken. There is also an analysis of the impact of notorious criminals whose exploits have shaped organized crime throughout the 20th century. 3 semester hours

CJ 305  CRIMINAL EVIDENCE
Exploring authentication, reliability, and credibility of evidence through lecture, role playing, and discussion, the course uses and learns the Federal Rules of Evidence. Students will learn, for example, why certain types of evidence are not permitted in courtrooms; gain insight into investigation and research techniques which will be likely to establish a credible basis for prosecution, defense, or presentation of academic or scientific argument. 3 semester hours

CJ 315  JUVENILE DELINQUENCY AND JUVENILE JUSTICE
This course provides an overview of the phenomenon of juvenile delinquency and the system designed to handle this form of social deviance. Topics to be covered include discussions of theoretical explanations of delinquency, the evolution of the concept of juvenile justice, and the system’s response to the problems of child abuse, status offenders, delinquent youth gangs, and trends in juvenile crime. Prerequisite: CJ 105; freshmen must have permission of instructor. 3 semester hours

CJ 320  WHITE COLLAR CRIME
This course will examine various forms of white collar crime, including corporate crime, occupational crime, and governmental crimes. Case studies will illustrate the features of many of the different offenses that are included under the term “white collar crime,” including consumer frauds, embezzlement, bribery, and insider trading. An introduction to some of the legal issues involved in the investigation and prosecution of white collar crime will be provided. The course will also review some of the theoretical explanations for this form of criminality and will consider the challenges associated with the enforcement of relevant laws, the investigation and prosecution of such offenses, and the sentencing of white-collar offenders. 3 semester hours

CJ 325  CRIMINAL LAW AND PROCEDURE
This course addresses the phenomenon of the criminal law and the procedures involved in the criminal justice system. Topics to be covered include the issues of the legal presumptions of innocence and individual culpability, rules of evidence, legal representation, and sentencing/punishment. The course also addresses Constitutional guidelines governing the procedures of arrest, adjudication, and appeal. Prerequisite: CJ 105. 3 semester hours

CJ 330  CAPITAL PUNISHMENT
This course is designed as a comprehensive study of the practice of capital punishment in America. Historical, philosophical, legal, and criminological sources are used to explore what is arguably one of the most controversial issues facing criminal justice today. Through various written assignments, students are encouraged to develop an understanding of capital punishment that is based on fact, rather than emotion, and one that recognizes the complex interplay of legal and moral issues at the heart of the public debate on this punishment practice. 3 semester hours

CJ 335  COMMUNITY-BASED YOUTH DEVELOPMENT
INTERVENTION STRATEGIES AND PRACTICES: INTEGRATING CRIMINAL JUSTICE AND PSYCHOLOGICAL APPROACHES
(SAME AS PSY 335)
This is an interdisciplinary criminal justice and psychology year-long course on community intervention strategies and practices for at-risk youth. Theories and research that explain problem behaviors (i.e., mental health, substance abuse, delinquency) are reviewed, focusing on both the macro-structural factors emphasized in criminology and the micro-level perspective emphasized in psychology. Current intervention and prevention programs are examined and combined with field experience to train students in the principles of civic engagement, as well as in the mentoring and treatment of at-risk youth. Open to criminal justice or psychology majors with junior standing or above, or with instructor’s permission. 6 semester hours

CJ 345  CRITICAL ISSUES IN CRIMINAL JUSTICE
Selected issues confronting the criminal justice system and society in the United States are examined through assigned readings, discussion, visiting speakers, and research papers or projects. 3 semester hours

CJ 346  POLICE/COMMUNITY RELATIONS
This course focuses on the challenges presented by policing in modern communities. Focusing on the “practical” side of policing, topics include the impact of selection, training and professional socialization on community law enforcement, as well as the effects of discretion, racial diversity and urban crime. 3 semester hours

CJ 355  COMMUNITY-BASED CORRECTIONS
This course examines the development and popularity of community-based sanctions in American corrections. Beginning with an understanding of the historical development of such programs for both adults...
and juveniles, students will study the traditional options of probation and parole, as well as the more recent innovations of electronic monitoring, intensive supervision, “boot camps,” and the like. The overall focus of the course will be on assessing the effectiveness of such programs, both in terms of stemming the tide of recidivism among criminal offenders and easing the incarceration burden on our jails and prisons. 3 semester hours

CJ 382 RESEARCH METHODS IN CRIMINAL JUSTICE
This research seminar teaches the application of the scientific method to the study of issues related to crime and criminal justice. Topics include the relationship between theory, hypotheses, and empirical research; various methodological designs including survey research and quasi-experimental and qualitative methods; as well as ethical concerns that govern the study of crime and justice. Required of all criminal justice majors. Prerequisite: PSY 385. 3 semester hours

CJ 405 ETHICS IN CRIMINAL JUSTICE
This senior level seminar addresses various aspects and approaches to the practice and study of ethics in the criminal justice system. Topics include philosophical approaches to crime, justice, and punishment, as well as practical ethics for those who work in the system. After studying the concepts of ethical justice, students apply ethical principles to law, law enforcement, and corrections. Required for all seniors in the major. Prerequisite: Senior standing in the major. Students from other majors, by permission of instructor only. 3 semester hours

CJ 409, 410 SENIOR RESEARCH
Research in an area of the student’s special interest. Required of all majors in criminal justice. Prerequisite: CJ 382, PSY 385. 6 semester hours

CJ 419 SENIOR RESEARCH
The CJ 409–410 sequence taken in one semester. Offered only in fall semester. Open only to December graduates or seniors who will be student teaching in the spring semester. Prerequisite: CJ 382, PSY 385. 6 semester hours

CJ 423 CRIMINAL JUSTICE INTERNSHIP
Subject-related work experience. Setting must be approved by the faculty. Required of all criminal justice majors in senior year; others not eligible. 6 semester hours

CJ 499 INDEPENDENT STUDY
Individual study for specially qualified advanced students. Requires permission of criminal justice faculty member. 3 semester hours

DANCE

DAN 101 MODERN DANCE I
This course provides an introduction to the principles and practice of modern dance. Ongoing dance technique classes incorporate aspects of modern and postmodern dance, dance improvisation. Bartenieff Fundamentals, Pilates mat work, and stretching and relaxation techniques. Through these movement experiences, students develop their technical dance skills, learn basic concepts of dance design, and further their understanding and cultivation of the body as an instrument of expression. The course provides a basis for understanding the aesthetic principles of modern dance through movement experiences, critical viewing and analysis of masterworks of modern dance choreography, and class discussions. Students will attend one or more live dance performances. May be repeated three times. 1 semester hour

EARTH AND SPACE SCIENCE

ESSC 103 PLANET EARTH
The purpose of this course is to expand one’s awareness of science in general with particular emphasis on the geosciences. The principal topics include study of Earth, its oceans, resources, and climate; Earth as compared to other planets in our solar system; and the fate of Planet Earth. Enrollment is limited to nonscience majors. 3 semester hours

ESSC 105 INTRODUCTION TO THE OCEANS
An introduction to estuarine and marine environments designed primarily for college students with little science background interested in discovering the sea. Investigations primarily in marine biology, geology, and resources. Field and laboratory experiences introduce the student to a number of communities in detail. Enrollment limited to nonscience majors. 3 hours lecture, laboratory/field. 3 semester hours

ESSC 106 LIFE ON EARTH
This course considers the history of nature from the emergence of tiny one-celled organisms more than 3,000 million years ago to life forms of the present day. Lectures include an examination of animal and plant life living today and of the fossil record tracing the most significant threads in the history of life on earth. Enrollment limited to nonscience majors. 3 semester hours

ESSC 108 INTRODUCTION TO ASTRONOMY
(SAME AS PHYS 108)
This course is designed for nonscience majors. The course provides an overview of the whole universe. Astronomy topics include understanding the planets, the Sun, stars and stellar evolution, the Milky Way, galaxies, and cosmology. The history of astronomy, telescopes, and the nature of light and gravity are also covered. Students are expected to have basic math and calculator skills. Evening observation sessions using the Widener Observatory are a required part of the course. No prerequisites. 3 hours lecture, 1 hour observing. 3 semester hours

ESSC 109 INTRODUCTION TO WEATHER AND CLIMATE
(SAME AS PHYS 109)
This course is designed to provide a descriptive survey of weather and climate for nonscience majors. Subjects include composition and structure of the atmosphere, solar and terrestrial radiation, temperature, atmospheric stability, forms of condensation and precipitation, pressure and wind systems, severe weather (thunderstorms, tornadoes, and hurricanes), weather analysis and forecasting methods, air pollution, the changing climate, world climates, and optical phenomena in the atmosphere. The laboratory component ESSC 119 is a separate course. Credit will not be granted for both this course and ENVR/PHYS 209 Meteorology. No prerequisites. 3 hours lecture. 3 semester hours

ESSC 113 PLANET EARTH LABORATORY
Lab associated with ESSC 103. Selected laboratory and/or field exercises related to appropriate text topics on Planet Earth. Corequisite: ESSC 103. 3 lab hours weekly. 1 semester hour

ESSC 118 ASTRONOMY LABORATORY
(SAME AS PHYS 118)
This laboratory course is designed to complement ESSC 108. Lab exercises include identifying moon features, optics, understanding stars properties, spectral analysis, classification of galaxies, etc. The laboratories are mostly pen and paper exercises to be completed in class. This course fulfills the College of Arts and Sciences science laboratory requirement. Corequisite: ESSC 108. 2 hours laboratory. 1 semester hour

ESSC 119 WEATHER AND CLIMATE LABORATORY
(SAME AS PHYS 119)
This laboratory course is designed to complement ESSC 109. Students engage in exercises that involve analyses of daily weather cycles, employing instruments to determine atmospheric temperature and humidity, learning about the forms of condensation and precipitation, studies of global pressure and wind systems, analyses of surface and upper-air weather maps, understanding the nature of air pollution, and classification of world climates. This course fulfills the College of Arts and Sciences science laboratory requirement. Corequisite: ESSC 109. 2 hours laboratory. 1 semester hour

ESSC 200 PRINCIPLES OF ENVIRONMENTAL SCIENCE
(SAME AS ENVR 206)
This course provides an intensive examination of the fundamental principles that govern and shape our environment. While designed primarily as an introduction to the field of environmental science for science majors, this course is intended for all students who want to learn about environmental issues and problems. Topics include
ecosystems, human populations, geologic processes, atmospheric and hydrologic systems, pollution, energy resources, urbanization, and environmental history and ethics. Prerequisite: none. 3 hours lecture. 3 semester hours

ESSC 201 ENVIRONMENTAL GEOLOGY
(SAME AS ENVR 201)
This course details treatment of the structure of the earth’s crust, its igneous, sedimentary and metamorphic rocks, their kinds, origin and importance. This course covers such topics as erosion processes, mountain building, development of continents and landforms, volcanism, earthquakes, glaciation—a survey of the geological past. Lab includes studies of rocks, minerals, fossils, geologic and topographical maps, aerial photographs, and local field work. 3 hours lecture. 3 hours laboratory. 4 semester hours

ESSC 202 EARTH HISTORY
The history of the earth and its inhabitants through geologic time is traced. This interpretation of earth history explores such areas as dating the past, relationship of earth’s history to life development and evolution of plants and animals, study of the geological-geologic provinces of North America. 3 hours lecture. 3 semester hours

ESSC 203 ANCIENT LIFE
Morphology and classification of plant and animal fossils are taught. Lab includes selected field trips and the identification and classification of common index fossils. 3 hours lecture. 3 hours laboratory. 4 semester hours

ESSC 205 MINERALOGY
A study of the physical properties, occurrences, associations, and origins of minerals includes consideration of fundamental principles of crystallography. The laboratory involves the examination, identification and classification of the common economic and rock-forming minerals. Three hours lecture, three hours laboratory. 4 semester hours

ESSC 206 PHYSICAL GEOGRAPHY
Students consider distribution of the world’s landforms, their characteristics, causes, and significance. Topographic and geologic features of the physiographic provinces, distribution of the world’s climates, vegetation types, soils and mineral resources are investigated. 3 hours lecture. 3 hours lab. 4 semester hours

ESSC 207 OCEANOGRAPHY
This course introduces the physical and biological nature of the oceans: their topography and circulation, chemical composition, physical and chemical characteristics of marine habitats, relationship to geologic, geographic and economic problems. Quantitative chemical and physical methods employed in the laboratory include processing oceanographic data. Three hours lecture, three hours laboratory. Field trips are required. 4 semester hours

ESSC 208 ASTRONOMY AND ASTROPHYSICS
(SAME AS PHYS 208 AND ENVR 208)
This course provides a calculus-based introduction to astronomy and astrophysics for all science and engineering students, including qualified freshmen. Topics include celestial mechanics, planets and the solar system, the Sun and energy generation, electromagnetic radiation, optics, stars and stellar evolution, the Milky Way and other galaxies, cosmology, and the start of the Universe. Evening observation sessions using the 16-inch telescope at the Widener Observatory are a required part of the course. Corequisite: MATH 131 or MATH 141. 3 hours lecture. 1 hour observing. 3 semester hours

ESSC 209 METEOROLOGY
(SAME AS PHYS 209 AND ENVR 209)
This introductory course teaches an understanding of the Earth’s atmosphere, including the forces producing weather and climate, the dynamics of air movements, pressure changes, mass density, volume relationships, as applied to the changing atmosphere, and the production of hurricanes, tornadoes, and thunderstorms. Also studied are atmospheric structure, the effects produced by solar radiation on the Earth’s magnetic field—auroras, Van Allen belts, and similar phenomena. Meteorological instrumentation is studied in laboratory experiments designed to integrate theory with practice, together with the production of weather maps by students from empirical data recorded in the laboratory. This course is designed primarily for students majoring in science or engineering. 3 hours lecture. 2 hours laboratory. 4 semester hours

ESSC 210 INVESTIGATING ENVIRONMENTAL SCIENCE
This is a laboratory course designed to complement ENVR 200. Lab inquiry activities will include topics in experimental ecology in model ecosystems, ecosystem modeling, and environmental assessment/environmental quality. There will be weekly assignments and/or projects for each topic, and a final exam. Corequisites: BIOL 161, 162, CHEM 145–148, ENVR 200. 3 hours laboratory/field. 1 semester hour

ESSC 212 EARTH HISTORY LABORATORY
Lab associated with ESSC 202. Includes related laboratory and field investigations in interpreting earth history. Corequisite: ESSC 202. 1 semester hour

ESSC 220 MARINE GEOLOGY (SAME AS ENVR 220)
A study of the sediments, rocks, structure, geophysics, microfossils, stratigraphy and history of the ocean basins and their margins. Lab includes field work. 6 hours weekly. 3 hours lecture. 3 hours laboratory. 4 semester hours.

ESSC 490 EARTH AND SPACE SCIENCE INTERNSHIP
This course is offered only upon special application from the student and a supervising faculty member. Approval must be obtained in advance from the environmental science faculty and requires a specific outline of work to be done; the nature and extent of its academic relevance; and the academic and special preparation of the student for the purpose. Written approval must be obtained from the employer/sponsor, and arrangements must be made for regular contact between the student and the supervising faculty member. The student is responsible for making all arrangements. A final report must be submitted upon completion of the activity, and a pass/fail grade will be assigned. The number of semester hours earned will depend on the extent of the approved activity (12 semester hours corresponds to full-time work for a semester). Prerequisites: Junior or senior standing, a GPA of at least 2.5 both in the major and cumulative in all courses, and approval of both the student’s academic advisor and the head of the Science Division. 3–12 semester hours

ESSC 499 INDEPENDENT STUDY
Individual investigation of a problem in earth and space science. Lab work, computations, readings, and orals as appropriate. Scope, topic, and prerequisites are arranged individually. 1–4 semester hours

ESSC 188, 288, 388, 488, 588 SPECIAL TOPICS IN ENVIRONMENTAL SCIENCE
Topics offered in response to student and/or faculty interest. 3 semester hours each

ECONOMICS

EC 103 HONORS PRINCIPLES OF MACROECONOMICS
This course is devoted to an introductory study of aggregate economic activity. Attention focuses on the aggregation concepts used to compute national product accounts, the rate of unemployment, and the consumer price index. Distinctions between actual and equilibrium values, as well as real and nominal measures are highlighted. A simple Keynesian equilibrium model and the aggregate demand/aggregate supply framework are developed and utilized to examine various fiscal and monetary policy options. This course substitutes for EC 201 on student transcripts. Students cannot receive credit for both EC 103 and EC 201. This course is restricted to university honors students. 3 semester hours

EC 104 HONORS PRINCIPLES OF MICROECONOMICS
This course is an introductory study of the principles of microeconomic theory and how these principles are used in the analysis of current economic problems and issues. The underlying decision-making process at the household and firm level is explored. Topics include price theory and resource allocation under various market structures, the implications of externalities, and the reality of the global economy
to the decision-making process. Emphasis is placed on class participation and the integration of principles through class applications. This course substitutes for EC 202 on student transcripts. Students cannot receive credit for both EC 104 and EC 202. This course is restricted to university honors students. 3 semester hours

**EC 201 PRINCIPLES OF MACROECONOMICS**

An introductory study of the determinants of the aggregate level of economic activity in a global economy. Attention focuses on the demand for output by households (consumption), businesses (investment), government and trade with the rest of the world (net exports), as well as the roles played by fiscal and monetary policies. In addition, interest centers on the problems of inflation, unemployment, federal budget deficits, and stimulating economic growth. Topics include measuring the levels of output and income, Keynesian and classical models of aggregate demand and supply, the banking system and money creation, impacts of government fiscal and monetary policies, inflationary processes and models of inflation, unemployment-inflation tradeoff controversies, public debt burdens, international trade policies, and determinants of economic growth. This course may be used to satisfy the social science general education distribution requirement. Prerequisite: Sophomore standing. 3 semester hours

**EC 202 PRINCIPLES OF MICROECONOMICS**

An introductory study of the operations of output (product) and input (resource) markets as they relate to demand and supply decisions by households, businesses, government, and the rest of the world (foreign trade patterns). Attention centers on the role of prices in allocating scarce resources among competing uses, as well as imperfections in and failures of markets to effectively allocate such resources. Among the topics covered are introduction to economizing problems and issues, market systems and demand and supply analysis, consumer behavior and product demand, production functions and costs, output pricing under various market structures, input pricing under various market structures with special emphasis on labor markets, and demand and supply determinants of international trade patterns. This course may be used to satisfy the social science general education distribution requirement. Prerequisite: Sophomore standing. 3 semester hours

**EC 300 ECONOMIC ISSUES IN A GLOBAL ENVIRONMENT**

Based on macro and micro principles of economics, major economic issues facing society are examined and analyzed from a global context. Among the issues studied are the economic role of government, natural resource development and use, labor markets and human resource development, capital markets and investment in productive capacity, impacts of fiscal and monetary policies on economic activity levels, international trade and finance policies, strategies for economic growth and development, and economic systems and economic reform. Prerequisite: EC 201 and 202 or equivalents. 3 semester hours

**EC 305 HISTORY OF ECONOMIC THOUGHT**

This is a study of the historical development of economic thought from the early philosophers through the scholasticists and mercantilists to the socialists, classical, and neoclassical economists. This is followed by an examination of the evolution of economic thought in the 20th century through the Keynesian resolution and counter-revolution. Prerequisite: EC 201 and 202 or equivalents. 3 semester hours

**EC 311 MICROECONOMIC THEORY**

Analysis of household and business firm economic behavior under various market conditions; consumer demand; production theory; costs and output pricing; factor pricing and resource use; government regulation and resource allocation. Prerequisite: EC 202 or equivalent, MATH 118 or equivalent. Course offered only in fall semester. 3 semester hours

**EC 312 MACROECONOMIC THEORY**

Analysis of aggregate income and employment determination under varying degrees of market competition; national income and product accounting; consumption theories; investment theories; role of foreign trade and the import function; government stabilization policies—fiscal and monetary; business cycle fluctuations; inflation theories; introduction to economic growth. Prerequisite: EC 201 or equivalent, MATH 117. Course offered only in spring semester. 3 semester hours

**EC 315 WOMEN, MEN, AND WORK (SAME AS WS 315)**

This course focuses on gender issues in the labor force and the household. Topics include labor force participation patterns and trends, allocation of time between household and market work, unemployment, leadership styles, occupational segregation, discrimination, and sexual harassment. Prerequisite: EC 202. 3 semester hours

**EC 316 THE ECONOMICS OF SPORTS (SAME AS SMGT 410)**

See SMGT 410 for course description.

**EC 320 ECONOMICS OF ANTITRUST AND REGULATIONS**

An economic analysis of the role of antitrust and regulation in the U.S. economy. The course examines such issues as monopolization, mergers, collusion, price discrimination, patents, and regulations. Prerequisite: EC 202 or equivalent. 3 semester hours

**EC 397, 398 ECONOMIC INTERNSHIP**

Subject-related field experience encompassing a minimum of 100 hours of on-site field activity per 3 semester hours of credit. It is offered only upon special application from the student and a sponsoring faculty member. Approval must be obtained in advance from the economics faculty and requires a specific outline of work to be done; the nature and extent of its academic relevance; student academic and other preparations qualifying the individual for the proposal activity; and methods to be used in evaluating the quality of the work. Students enrolling must make arrangements for regular contact with supervising faculty members. Prerequisite: Junior or senior standing and the approval of the the head of the Department of Economics, Finance, and Marketing. 3–6 semester hours

**EC 401 MONEY AND FINANCIAL INSTITUTIONS**

Students analyze the effects of credit and money flows on aggregate economic activity: e.g., roles of financial intermediaries and central banking; sources and uses of funds (flow of funds analysis and accounts); term structure of interest rates; portfolio choice and macroeconomic behavior; alternative monetary theories; and the role of money in inflationary process. Prerequisite: EC 201 and 202 or equivalents. 3 semester hours

**EC 406 GOVERNMENT EXPENDITURE AND TAX POLICIES**

This course is devoted to the economic analysis of the effects that government expenditures (purchases of products, transfer payments, and subsidies) and taxation have on business and how household spending and saving decisions are influenced by government fiscal policies. Topics include the efficient use of resources, economic growth, and income redistribution patterns. Prerequisite: EC 201 and 202 or equivalents. 3 semester hours

**EC 408 INTERNATIONAL ECONOMICS**

This course is an analysis of international trade and economic relations: theory of comparative advantage; factor pricing and terms of trade; international finance and balance of payments disequilibria; foreign exchange markets; commercial policies and protectionism, including use of tariffs and quotas. Prerequisite: EC 201 and 202 or equivalents. 3 semester hours

**EC 410 LABOR ECONOMICS**

This course undertakes to describe, analyze and theorize about the organization, institutions, and behavior of the labor market. This course concentrates on the application of economic theory to the problems of labor markets. Prerequisite: EC 201 and 202 or equivalents. 3 semester hours

**EC 440 MANAGERIAL ECONOMICS**

Analysis of economic decision-making models employed by managers to achieve the organization’s goals. Economic tools of analysis applied to nonbusiness and nonprofit organizations, as well as traditional business organizations; optimization techniques, estimation of demand curves, empirical cost analysis, capital budgeting, and forecasting. Prerequisite: QA 252 or equivalent. 3 semester hours
ED 451 ECONOMICS SEMINAR
Designed to provide economics majors with the opportunity to apply economic theory and analytical tools to contemporary issues of economic and social policy, through class discussion and assigned research topics. Prerequisite: Senior standing and completion of all core courses in the School of Business Administration except MGT 452. 3 semester hours

ED 453 FINANCIAL SERVICES SEMINAR
This is an integrative course that looks at the entire spectrum of the financial services market. Organizational structure in the industry is explored, spanning a continuum that includes the individual financial planner through the large corporate financial services provider. The focus is on market variables that are driving strategic change in the financial services industry, and how successful players in the field integrate information to develop, implement, and monitor strategic financial plans. Prerequisites: FIN 305 and senior standing. Corequisites: EC 401, FIN 320. 3 semester hours

EC 498 ECONOMICS INTERNSHIP
This course is developed for the Economics major provides opportunities to obtain practical experience by applying knowledge gained through classwork in an actual business environment. Students work on projects developed with industry partners and prepare reports on these experiences with their academic and industry supervisors. Prerequisite: Junior or senior standing. Note: This course can only be taken pass/fail as a free elective. 3 semester hours

EC 499 INDEPENDENT STUDY IN ECONOMICS
Intensive study and analysis of some economic topic will be presented as a major research paper under the close supervision of an assigned faculty member. Prerequisite: EC 311 and 312; available to qualified students upon approval of faculty advisor and the head of the Department of Economics, Finance, and Marketing. 3 semester hours

EDUCATION

ED 101 INTRODUCTION TO TEACHING
Intended for students who want to learn more about the teaching profession, this course has been designed to provide an opportunity to explore and to experience the nature and role of a classroom teacher as facilitator for learning, as classroom manager, and as decision maker. Through class discussions, school visits, field trips, interaction with practicing teachers, and field placements, students witness first-hand what a good teacher does. The duties, responsibilities, and preparation of the classroom teacher is emphasized concurrently with an examination of the foundations of education. As part of this course, students participate in field experiences inside and outside of regularly scheduled class times, which enable them to relate the course content to teaching. All students must have required clearances before the semester begins. Please contact the Office of Field Experience and Certification for more information. Corequisite: ED 102. 3 semester hours

ED 102 INTRODUCTION TO EDUCATIONAL TECHNOLOGY
In this course, students are provided with the technical skills and theoretical knowledge necessary to use emerging technologies (computers, internet, multimedia applications) in their coursework and when student teaching. This course complements and complies with the International Society for Technology in Education Foundation Standards for teacher preparation programs. Corequisite: ED 101. 1 semester hour

ED 201 EDUCATIONAL PSYCHOLOGY (SAME AS PSY 201)
This course is an introduction to the application of psychological theories and principles to educational settings. Topics include basic concepts in measurement and assessment, theories of learning and motivation, developmental characteristics of learners, individual differences, classroom management and teacher behavior, and diversity in the schools. Taken during the freshman or sophomore year, this course is a prerequisite for other education courses. As part of this course, students participate in field experiences inside and outside of regularly scheduled class times, which enable them to relate the course content to teaching. All students must have required clearances before the semester begins. Please contact the Office of Field Experience and Certification for more information. Prerequisite: ED 101. 3 semester hours

ED 202 CHILD DEVELOPMENT (SAME AS PSY 202)
This course is an introduction to the application of child development theories, principles, and research to educational settings. Students are required to examine the physical, cognitive, and social-emotional developmental processes, as well as the family, culture, and community aspects of the child from conception through middle childhood. Students are also required to explore classroom methods for children in early intervention programs, preschool programs/child development centers, and elementary schools. This is a service-learning course. Taken during the freshman or sophomore year, this course is a prerequisite for other education courses. Education majors must receive a “B” or better in this course to remain in the Teacher Certification program. Students cannot receive credit for both PSY 211 (Human Growth and Development I) and ED/PSY 202 (Child Development). Prerequisites: ED 101 and 102, PSY 105. 3 semester hours

ED 206 TEACHING READING IN THE CONTENT AREAS
This course is intended for students who will teach in a content area at the middle, junior, or high school level. Strategies to motivate and help secondary school students develop vocabulary and comprehend content text are presented. As part of this course, students participate in field experiences inside and outside of regularly scheduled class times, which enable them to relate the course content to teaching. All students must have required clearances before the semester begins. Please contact the Office of Field Experience and Certification for more information. Prerequisite: ED 101 and 201. 3 semester hours

ED 213 EARLY ADOLESCENT PSYCHOLOGY (SAME AS PSY 213)
Through the content and experiences in this course, candidates for middle level certification develop and apply the major concepts and theories associated with young adolescent development. Candidates become familiar with the research on adolescent development, motivation, and learning styles. The course is designed and taught in such a way that faculty and candidates are able to make explicit connections with middle level content areas, cognitive development, literacy, special education, and English language learning. Course content, competencies, and assessed outcomes are expected to be aligned with the PDE 430, and with the National Middle School Association (NMSA) performance standards for middle level teacher preparation. Prerequisites: PSY 105, ED 1211. 3 semester hours

ED 223 CHILDREN’S LITERATURE
This course is designed to develop participants’ appreciation of children’s literature. Students read, evaluate, and discuss literature of various genre and cultures for children from birth to grade 6. Students will gain practice in selecting and presenting literature to children. Creative arts is incorporated into the teaching and learning of children’s literature. As part of this course, students participate in field experiences inside and outside of regularly scheduled class times, which enable them to relate the course content to teaching. All students must have required clearances before the semester begins. Please contact the Office of Field Experience and Certification for more information. Prerequisite: ED 101. 3 semester hours

ED 250 EFFECTIVE INSTRUCTIONAL PRACTICES AND DELIVERY METHODS FOR ALL LEVELS OF SPECIAL EDUCATION SUPPORT (PRE-K–8) (SAME AS PSY 250)
This course involves the foundations of special education. The purpose is four-fold; to: (1) examine historical background information related to the field of special education (legislation and litigation); (2) review components necessary for effective collaboration and consultation with parents, school personnel, and other professionals,
and related multicultural issues/perspectives; (3) examine the nature and characteristics of various disabilities; and (4) discuss services and programs to help meet the educational, social, and/or personal goals for students with disabilities. This is achieved via case studies, large and small group class discussions, chapter readings, class assessments, and related exercises. Prerequisite: PSY 105. 3 semester hours

ED 306 METHODS—SECONDARY EDUCATION SOCIAL STUDIES/CITIZENSHIP
This course is designed to prepare prospective secondary school teachers for the challenges and responsibilities associated with teaching middle and high school social studies. The course will provide students with (1) the opportunity to consider their philosophy of education as it applies to the goals of social studies, (2) a knowledge of the major social studies disciplines and standards, (3) an appreciation for the different learning needs of students, and (4) a variety of methods and teaching strategies to teach effectively in a performance-based learning environment. As part of this course, students participate in field experiences inside and outside of regularly scheduled class times, which enable them to relate the course content to teaching. All students must have required clearances before the semester begins. Please contact the Office of Field Experience and Certification for more information. Prerequisite: ED 101 and 201. 3 semester hours

ED 307 METHODS—SECONDARY ENGLISH
This course is designed to prepare prospective secondary teachers for the instructional and administrative duties and responsibilities associated with the methods of teaching English. The four major components of the course include curriculum development and planning; classroom management and discipline; appropriate instructional practices and procedures relative to this area of certification; and familiarity with instructional media and materials. As part of this course, students participate in field experiences inside and outside of regularly scheduled class times, which enable them to relate the course content to teaching. All students must have required clearances before the semester begins. Please contact the Office of Field Experience and Certification for more information. Prerequisite: ED 101 and 201. 3 semester hours

ED 308 METHODS—SECONDARY MATHEMATICS
This course is designed to prepare prospective secondary teachers for the instructional and administrative duties and responsibilities associated with the methods of teaching mathematics. The four major components of the course include curriculum development and planning; classroom management and discipline; appropriate instructional practices and procedures relative to this area of certification; and familiarity with instructional media and materials. The Principles and Standards for School Mathematics, a publication of NCTM (National Council of Teachers of Mathematics), provides a central focus for this course. As part of this course, students participate in field experiences inside and outside of regularly scheduled class times, which enable them to relate the course content to teaching. All students must have required clearances before the semester begins. Please contact the Office of Field Experience and Certification for more information. Prerequisite: ED 101 and 201. 3 semester hours

ED 309 METHODS—SECONDARY SCIENCE
This course is designed to prepare prospective secondary teachers for the instructional and administrative duties and responsibilities associated with the methods of teaching science. The four major components of the course include curriculum development and planning; classroom management and discipline; appropriate instructional practices and procedures relative to this area of certification; and familiarity with instructional media and materials. As part of this course, students participate in field experiences inside and outside of regularly scheduled class times, which enable them to relate the course content to teaching. All students must have required clearances before the semester begins. Please contact the Office of Field Experience and Certification for more information. Prerequisite: ED 101 and 201. 3 semester hours

ED 310 METHODS—MODERN LANGUAGE
This course is designed to prepare prospective secondary teachers for the instructional and administrative duties and responsibilities associated with the methods of teaching modern language. The four major components of the course include: curriculum development and planning; classroom management and discipline; appropriate instructional practices and procedures relative to this area of certification; and familiarity with instructional media and materials. As part of this course, students participate in field experiences inside and outside of regularly scheduled class times, which enable them to relate the course content to teaching. All students must have required clearances before the semester begins. Please contact the Office of Field Experience and Certification for more information. Prerequisite: ED 101 and 201. 3 semester hours

ED 315 METHODS—EARLY CHILDHOOD AND ELEMENTARY SOCIAL STUDIES
This course is designed to prepare preservice early childhood and elementary school teachers to teach social studies effectively in a performance-based learning environment. A careful consideration is given to (1) identifying meaningful goals and standards in terms of what students should know and be able to do, (2) developing effective instructional strategies and teaching methodologies to accomplish those goals, and (3) designing appropriate assessments that measure how well the learning needs of all students are being met. As part of this course, students participate in field experiences inside and outside of regularly scheduled class times, which enable them to relate the course content to teaching. All students must have required clearances before the semester begins. Please contact the Office of Field Experience and Certification for more information. Prerequisite: ED 101 and 201. 3 semester hours

ED 316 METHODS—EARLY CHILDHOOD AND ELEMENTARY READING AND LANGUAGE ARTS I
This course is designed to prepare preservice teachers to work with children on prereading, reading and language arts skills. Topics covered include cognitive and language development, emergent literacy (language arts skills from birth to school age), balanced literacy, word recognition, and comprehension skills. As part of this course, students participate in field experiences inside and outside of regularly scheduled class times, which enable them to relate the course content to teaching. Students observe lessons related to these and other topics. They will also prepare and deliver lessons to small groups of children. All students must have required clearances before the semester begins. Please contact the Office of Field Experience and Certification for more information. Prerequisite: ED 101, 201, and 223. 3 semester hours

ED 318 METHODS—EARLY CHILDHOOD AND ELEMENTARY MATHEMATICS
This course is designed to prepare preservice early childhood and elementary school teachers to effectively teach mathematics. The Principles and Standards for School Mathematics, a publication of NCTM (National Council of Teachers of Mathematics), provides a central focus for this course. Topics studied include the changing mathematics curriculum, how children learn mathematics, instructional strategies and learning activities related to specific mathematical topics, use of technology, and assessment of mathematics learning. A problem-solving approach to the teaching of mathematics is presented throughout the course. As part of this course, students participate in field experiences inside and outside of regularly scheduled class times, which enable them to relate the course content to teaching. All students must have required clearances before the semester begins. Please contact the Office of Field Experience and Certification for more information. Prerequisite: ED 101 and 201, MATH 111 and 112, or equivalents. 3 semester hours

ED 319 METHODS—EARLY CHILDHOOD AND ELEMENTARY SCIENCE
This course uses an inquiry-based perspective for teaching science. The science process skills are practiced and studied as a means of introducing students to science investigation. Students explore the application of alternative learning theories to develop early childhood
and elementary level hands-on, minds-on science unit plans. As part of this course, students participate in field experiences inside and outside of regularly scheduled class times, which enable them to relate the course content to teaching. All students must have required clearances before the semester begins. Please contact the Office of Field Experience and Certification for more information. Prerequisite: ED 101 and 201. 3 semester hours

**ED 321 METHODS—EARLY CHILDHOOD AND ELEMENTARY READING AND LANGUAGE ARTS II**

Instruction in methods and materials for teaching all communication skills is given. The expressive (speaking and writing) and the receptive (listening and reading) modes are emphasized and their interdependence considered. Topics include emergent literacy, concept development, language development, balanced literacy, and the writing process. As part of this course, students participate in field experiences inside and outside of regularly scheduled class times, which enable them to relate the course content to teaching. Students observe lessons related to these and other topics. They will also prepare and deliver lessons to small groups of children. All students must have required clearances before the semester begins. Please contact the Office of Field Experience and Certification for more information. Prerequisite: ED 101, 201, 223, and 316. 3 semester hours

**ED 324 IMPLEMENTING THE ELEMENTARY CURRICULUM**

The focus of this course is on classroom organization and the establishment of an environment conducive to learning. Topics include classroom management approaches and procedures, discipline models, and creating a comprehensive discipline program. The course will focus on celebrating diversity, motivating students to learn, and fostering partnerships with parents, schools, and community. The course is designed to prepare elementary school teachers to teach health and physical education activities in the curriculum. This course includes a field placement component for which students will plan, present, and evaluate developmentally appropriate lessons. All students must have required clearances before the semester begins. Please contact the Office of Field Experience and Certification for more information. Prerequisite: ED 101 and 201. 3 semester hours

**ED 325 IMPLEMENTING THE EARLY CHILDHOOD CURRICULUM**

This course is designed to cover specific early childhood topics that include historical contributions to early childhood education, developmentally appropriate early childhood programs, state and federal regulations, and NAEYC (National Association for the Education of Young Children) Guidelines, Accreditation, and Standards. The course focuses on developing a developmentally appropriate classroom and fostering partnerships with parents, schools, and community. Topics include planning the curriculum and enhancing cognitive, physical, personal, and social development. The course has a field placement component for which students will plan, present, and evaluate developmentally appropriate lessons. All students must have required clearances before the semester begins. Please contact the Office of Field Experience and Certification for more information. Prerequisite: ED 101 and 201. 3 semester hours

**ED 326 EDUCATION OF STUDENTS WITH DEVELOPMENTAL AND PHYSICAL DISABILITIES**

This course will provide students with an understanding of the major issues in the fields of developmental disabilities and physical disabilities. Students will examine identification criteria, instructional strategies, and program development. Objectives stress adapting environments, material, and instruction to facilitate inclusion and teaching functional life skills within a special education curriculum. This course also includes a 60-hour fieldwork component in settings for students with developmental and physical disabilities. During field placement, students are expected to plan and implement instruction for students with special needs. All students must have required clearances before the semester begins. Please contact the Office of Field Experience and Certification for more information. Prerequisite: ED 250. 5 semester hours

**ED 327 EDUCATION OF STUDENTS WITH LEARNING AND EMOTIONAL DISABILITIES**

This course provides a historical perspective and a critical overview of definitions, identification procedures, educational strategies, and service delivery options for students with emotional/behavioral disabilities. Current trends in assessment and educational interventions will be emphasized. Students will investigate community support services for families of children with learning and emotional/behavioral disabilities. This course also includes a 60-hour fieldwork component in settings for students with learning and emotional disabilities. During field placement, students are expected to plan and implement instruction for students with special needs. All students must have required clearances before the semester begins. Please contact the Office of Field Experience and Certification for more information. Prerequisite: ED 250. 5 semester hours

**ED 328 INSTRUCTIONAL DESIGN IN SPECIAL EDUCATION**

This knowledge-based course covers techniques of instructional design, assessment, and intervention strategies focused on students with disabilities. In addition to presenting basic principles of instructional design, the course focuses on using methods for individualizing instruction and assessing student progress. Course activities emphasize curriculum planning from formative and summative assessment data, and adapting curricula to meet the needs of students with disabilities. Activities include lecture, discussion, peer group assignment, and independent research. ED 660 may be taken in place of ED 328 with permission of the student’s advisor. Prerequisite: ED 250. 3 semester hours

**ED 329 COLLABORATION AND INCLUSION**

This course helps students develop an understanding of the major issues involved in working as members of a team and in helping others form multiple teaching positions in general and special education. This course focuses on effective strategies for facilitating inclusion of students with special needs in the general education classroom, and collaboration with families, general and special educators, paraeducators, and related service providers in the school and community. A multidisciplinary approach to assessment and intervention is emphasized. Prerequisites: ED 409 and 411. 3 semester hours

**ED 346 EDUCATION OF STUDENTS WITH DEVELOPMENTAL AND PHYSICAL DISABILITIES**

This course provides students with an understanding of the major issues in the fields of developmental disabilities and physical disabilities. Students examine identification criteria, instructional strategies, and program development. Objectives stress adapting environments, material, and instruction to facilitate inclusion and teaching functional life skills within a special education curriculum. Students attend class sessions with members of ED 326, but those in ED 346 complete a 20-hour field experience working with children and youth with developmental disabilities at a school or a disability support organization program in addition. This course does not substitute for graduate courses in developmental disabilities/mental retardation or physical disabilities or for the five-credit ED 326. All students must have required clearances before the semester begins. Please contact the Office of Field Experience and Certification for more information. Prerequisite: ED 250. 3 semester hours

**ED 347 EDUCATION OF STUDENTS WITH LEARNING AND EMOTIONAL DISABILITIES**

This course provides a historical perspective and a critical overview of definitions, identification procedures, educational strategies, and service delivery options for students with learning and emotional/behavioral disabilities. Current trends in assessment and educational interventions are emphasized. Students investigate community support services for families of children with learning and emotional/behavioral disabilities. Students attend class sessions with members of ED 327, but those in ED 347 complete a 20-hour field experience working with children and youth with learning disabilities or language disorders at a school or a disability support program in addition. This course does not substitute for graduate courses in learning disabilities.
or emotional disturbance or for the five-credit ED 327. All students must have required clearances before the semester begins. Please contact the Office of Field Experience and Certification for more information. Prerequisite: ED 250. 3 semester hours

ED 376 PSYCHOLOGY/EDUCATIONAL TESTING (SAME AS PSY 376)
A critical examination of potentials and limitations of the presently used tests of intelligence, achievement, aptitude, interests, attitudes, and personality. The use of tests in educational and psychological research, counseling and guidance, and industry is also examined. The development, use and standardization of tests for evaluation and research is included. ED 503 may be taken in place of ED 376 with permission of the student advisor. Prerequisite: PSY 105. 3 semester hours

ED 378 PROBLEM BEHAVIOR IN CHILDREN: ASSESSMENT AND THERAPY (SAME AS PSY 278)
An introduction to the principles, practices, and applications of applied behavior analysis and behavior modification in special education and counseling. Specifically, this course examines functional assessments, behavior/classroom management strategies, reinforcement techniques, token economies, and cognitive-behavior/social skills training designed for children and adolescents with emotional and behavioral disorders. Ethical issues associated with each type of individual and classroom intervention are also explored. As part of this course, students participate in field experiences outside of regularly scheduled class times, which enable them to relate the course content to teaching. Prerequisite: PSY 105. 3 semester hours

ED 409 STUDENT TEACHING SEMINAR
The student teaching seminar is taken in conjunction with ED 411 Student Teaching. It includes a sequence of topics that are addressed by full-time faculty, adjunct faculty, and invited school district and state professionals. Topics include lesson planning, diversity, inclusion, Praxis examinations, technology, classroom management, interviewing and hiring practices, state-based standards in K–12 education, and professional development. 0.5 semester hours

ED 411 A/B STUDENT TEACHING: EARLY CHILDHOOD, ELEMENTARY, AND SECONDARY EDUCATION
Student teachers observe and teach in classroom situations during the course of this semester. The classroom experience is a period of fourteen weeks and is under the supervision of a professor from the teacher education program and also experienced teachers from local cooperating schools. The student teaching experience requires full-time presence in the school for one full semester. In conjunction with this experience, student teachers are required to take ED 409, a weekly seminar directly related to student teaching activities. Open to seniors only. All students must have required clearances before the semester begins. Please contact the Office of Field Experience and Certification for more information. Prerequisite: Permission of the director of field experience and certification. 12 semester hours

ED 411 C STUDENT TEACHING: SPECIAL EDUCATION
Student teaching requires students to complete two placements (of seven weeks each): one in a setting serving students with moderate to severe needs, one serving students with mild needs. In addition, students will be encouraged to participate in volunteer experiences (e.g., Special Olympics) that will bring them in contact with the wider special education community. In conjunction with this experience, student teachers are required to take ED 409, a weekly seminar directly related to student teaching activities. NOTE: Students completing a dual major in special education/elementary education will student teach seven weeks in each setting. All students must have required clearances before the semester begins. Please contact the Office of Field Experience and Certification for more information. Prerequisites: Permission of the director of field experience and certification. 12 semester hours

ED 499 INDEPENDENT STUDY
Individual investigation of a problem in education, involving original research on the part of the student. Scope, topic, and prerequisites are arranged individually with the associate dean for education. 1–3 semester hours

ED 188, 288, 388, 488 SPECIAL TOPICS IN EDUCATION
Topics offered in response to student interest. 3 semester hours each

ED 1101 FAMILY AND COMMUNITY RELATIONS
This course focuses on how candidates use their understanding and knowledge about the complex characteristics of children’s families and communities to create and sustain respectful, reciprocal relationships that support and empower families, and to involve families in their children’s development and learning. (PA Department of Education Pre-K–4 Program Specific Guidelines, 2008). 3 semester hours

ED 1102 EFFECTIVE INSTRUCTIONAL PRACTICES AND DELIVERY METHODS FOR ALL LEVELS OF SPECIAL EDUCATION SUPPORT (PRE-K–8)
This course involves the foundations of special education. The purpose is four-fold, to (1) examine historical background information related to the field of special education (legislation and litigation); (2) review components necessary for effective collaboration and consultation with parents, school personnel, and other professionals; (3) examine the nature and characteristics of various disabilities; and (4) discuss services and programs to help meet the educational, social, and personal goals of students with disabilities. This is achieved via case studies, large and small group class discussions, chapter readings, class assessments, and related exercises. 3 semester hours

ED 1103 EVIDENCE BASED INSTRUCTION IN EDUCATING STUDENTS IDENTIFIED WITH A HIGH INCIDENCE DISABILITY
This course provides a historical perspective and a critical overview of definitions, identification procedures, educational strategies, and service delivery options for students with learning disabilities and emotional/behavioral disabilities. Current trends in assessment and educational interventions are emphasized. The purpose of the course is to (1) examine historical background information related to these disability groups; (2) examine the nature and characteristics of learning and emotional/behavioral disabilities; and (3) develop knowledge of services and programs for students with these disabilities. This is achieved via case studies, class discussions, chapter readings, class assessments, and related exercises. This course includes a fieldwork component in a setting for students with learning and emotional/behavioral disabilities. Prerequisites ED 1101 and 1102. 3 semester hours

ED 1104 LANGUAGE DEVELOPMENT IN EARLY CHILDHOOD EDUCATION
This course focuses on young children’s language and reading development and the relationship between language and reading acquisition. Students learn concepts central to language development, language achievements at different ages, concepts of emergent literacy, and models of reading acquisition and skilled reading. Prerequisites: ED 1101 and 1102. 3 semester hours

ED 1121 INTRODUCTION TO TEACHING AND EDUCATIONAL TECHNOLOGY
This is an introductory course, and learning experiences focus on the art and science of teaching and the practical applications and responsibilities of the teaching profession. Participants have the opportunity to explore the roles of teachers in various settings. The foundations, history, and philosophy of education are examined and current trends in education are presented. Through classroom discussions, technology experiences, interviews, and other activities, students assess themselves against the criteria for excellence in teaching. As adult learners who bring their own experiences to the classroom, it is expected that learners will challenge their own views of the structure, politics, and theories of teaching. Students learn the technical skills and theoretical knowledge necessary to use emerging technologies (computers, Internet, multimedia applications) in their coursework and when student teaching. This course complements and complements the International Society for Technology in Education Foundation standards for teacher preparation programs and competencies as outlined by the Pennsylvania Department of Education. 3 semester hours

ED 1201 FAMILY COLLABORATION AND DIVERSITY
This course involves the way “candidates must use their understanding and knowledge about the complex characteristics of children’s families and communities to create and sustain respectful, reciprocal relationships that support and empower families, and to involve all
families in their children’s development and learning.” (Pennsylvania Department of Education PreK–4 Program Specific Guidelines, 2008). Prerequisites ED 202, 1103, 1104. 3 semester hours

**ED 1202 ADVOCACY, COLLABORATION, AND COOPERATIVE LEARNING: ISSUES AND TRENDS**

This course seeks to help candidates understand the importance of creating “a community of learners,” within and outside of the classroom. Foci include collaboration and relationship building with families, other educators, and community agencies. The course also focuses on the value of advocating for sound educational practices and policies and challenges candidates to consider the ethical issues implicit in advocacy campaigns. Focusing on a variety of educational topics, candidates continue to develop their personal beliefs about professional dispositions and the best strategies and policies for the enhancement of early childhood and elementary education. Prerequisites: ED 202, 1103, 1104. 3 semester hours

**ED 1203 MATH FOUNDATIONS (PRE-K-4)**

This course is designed to prepare pre-service early childhood teachers to effectively teach mathematics to students in pre-kindergarten and kindergarten. Early Childhood Mathematics: Promoting Good Beginnings, a joint position statement of the National Association for the Education of Young Children (NAEYC) and the National Council for Teachers of Mathematics (NCTM) [http://www.nctm.org/about/content.aspx?id=6352], and NCTM’s Curriculum Focal Points provide a central focus for this course. Topics studied are how young children learn mathematics, teaching strategies, techniques, and learning activities related to specific mathematical topics, use of technology, and assessment of mathematics learning. The Pennsylvania Department of Education competencies covered in this course include those listed for number and operation, algebra, geometry, measurement, and data analysis and probability. As part of this course, the students participate in field experiences with preschool and kindergarten children that enable them to relate the course content to teaching. Prerequisites: ED 1201, 1202, 1206. 3 semester hours

**ED 1204 ENGAGING YOUNG CHILDREN IN THE LEARNING PROCESS**

This course focuses on the development of the social child and the implications on learning. Candidates must know and understand prerequisite skills for learning that promote academic achievement and school success. Candidates learn that academic achievement is founded on emotional and social skills and that learning is a process that requires self-regulation, self-awareness, confidence, motivation, and problem-solving skills. Candidates examine Pennsylvania’s learning standards Pre-K–4 for personal and social development. Candidates learn to integrate the development of social and personal skills throughout instruction, including getting along with others, following directions, identifying and regulating one’s emotions and behavior, thinking of appropriate solutions to conflict, persisting on task, engaging in social conversation and cooperative play, correctly interpreting other’s behavior and emotions, and feeling good about self and others. Candidates consider students’ potential in the broader sense of their self concept and peer relationships when making decisions about what and how to teach. Candidates learn to use their knowledge of self concept, motivation, peer relationships, development of character, aspiration, and civic virtues to develop instruction that nurtures students’ intellect. This course also describes the information that pre-K–4 candidates need to know in order to develop professional attitudes and behaviors. Candidates demonstrate knowledge of and competence in fostering professionalism in school and community settings. Prerequisites: ED 1201, 1202, 1206. 3 semester hours

**ED 1205 INTENSIVE READING, WRITING, AND MATHEMATICS INTERVENTION APPROACHES**

This course involves development and implementation of effective curriculum and materials to educate students with special needs in reading, writing, and mathematics. Prerequisites: ED 1201, 1202, 1206. 3 semester hours

**ED 1206 EARLY LANGUAGE DEVELOPMENT, BIRTH TO AGE 6**

Language development skills are central to successful learning in the academic areas. Students who are language impaired are at a high risk for learning difficulties because language content, form, and function are basic prerequisites to academic learning. An emphasis on language development prior to formal instruction in academic subjects such as reading is essential to successful teaching and learning. Children who begin reading instruction with inadequate language skills are at high-risk for encountering reading problems. Many researchers have identified that deficient readers are deficient in language skills such as syntactical errors, reduced vocabulary, articulation, inability to interpret spoken words completely, poor memory for sequence of words, and inability to tell the difference between objects unless they are visible. Consequently, these deficiencies involve basic language production errors. Consequently, they adversely affect both reading development and academic achievement. Sequentially, therefore, language development precedes reading development. A student will encounter difficulty in successfully learning to read and write if his language development is inadequate. The basis of the Pre-K–4 experience is language development. Language development provides a fundamental base and retrieval system that allows for both the encoding and decoding of information. (Pennsylvania Department of Education Pre-K–4 Program Specific Guidelines, 2008). Prerequisites ED 202, 1103, 1104. 3 semester hours

**ED 1221 IMPLEMENTING THE MIDDLE SCHOOL CURRICULUM**

This course provides middle school teacher candidates with a framework for understanding the unique philosophy of middle level education and its impact on program structure and curriculum design at that level. Emphases include curriculum theory, traditional and alternative models for middle level curricula, as well as research, trends, and current issues in middle school education. Prerequisites: ED 213, 1121. 3 semester hours

**ED 1222 ADOLESCENT LITERACY**

This course surveys adolescent literature. The course emphasizes extensive reading and evaluation of literature appropriate for adolescent students in grades 6 through 12 or ages 11–18, developing criteria for selecting and using literature to match developmental stages, and analysis and discussion of issues in this field. Candidates must use the relevant national standards for grades 4–8 (i.e., National Council for Teacher of English (NCTE)/IRA standards) to create opportunities and resources for students to develop the literacy and language skills they need to pursue life’s goals and to participate as informed, productive members of society. Prerequisite: ED 1221. 3 semester hours

**ED 1301 CHILD DEVELOPMENT, PRENATAL TO AGE 9 (GRADE 4), ATYPICAL DEVELOPMENT**

In this course, students use typical developmental milestones in an effort to understand and evaluate atypical development. Students become acquainted with the prenatal and early developmental genetic and environmental influences that contribute to atypical developmental outcomes, the methods of assessment and instruction used by early intervention providers, and the legal and practical practices associated with these methods. The home environment, collaboration with family members and professionals, diagnosed categories of disability, the use of observational assessments and various methods of direct and indirect instruction (including play) are introduced. An understanding of family values, community supports, evidence-based practice, and functional behavioral assessment are used to show how educators must include a view of the whole child when designing appropriate and effective instruction. Prerequisites: ED 1201, 1204, 1205, TED 1211. 3 semester hours

**ED 1302 EARLY LITERACY FOUNDATIONS—READING**

The core curriculum for reading education should equip graduating teachers to produce readers who are successful in the classroom and on standardized tests and use reading effectively to negotiate the world. This course enables new teachers to understand and use effective instructional strategies. Coursework, field experiences, skills in
assessment, and skills in developing intervention strategies need are organized coherently to address the development of strong reading skills and habits. The course and related experiences also must include direct and specific linkages to content in mathematics, the sciences, and social science so that candidates acquire and demonstrate knowledge and skills for nonfiction literacy instruction, assessment, and interventions. (Adapted from the Pennsylvania Department of Education Pre-K–4 Program Specific Guidelines, 2008). Prerequisites: ED 1301–1305. 3 semester hours

ED 1307 SCIENCE METHODS
As a result of this course, candidates will demonstrate their understanding of learning as a process that integrates all areas of development. They will recognize the wide range of students that they will encounter—those beginning school with previous exposure to high quality science experiences, those with learning challenges, and those whose innate curiosity about the world around them has yet to be tapped by effective science instruction. As a result of recognizing the many different types of children and areas of development to be addressed, candidates learn to utilize a variety of instructional strategies so that all children can become engaged in science learning. Candidates learn how to think like scientists and help their students develop the same set of age appropriate knowledge and skills. To this end, the course uses an inquiry-based perspective for teaching science. Science process skills are practiced and studied as a means of introducing students to science investigation. Teacher candidates explore the application of alternative learning theories to develop early childhood and elementary level hands-on, minds-on science unit plans. As part of this course, students participate in field experiences to apply these units. All students must have required clearances on file in the Office of Field Experiences and Certification. Prerequisites: ED 1301–1305. 3 semester hours

ED 1308 INTEGRATING THE ARTS
This course helps candidates to understand and know Pennsylvania’s Pre-K–4 learning standards. The course focuses on arts and humanities, motor development, and health and social development of the young child. Prerequisites: ED 1301–1305. 3 semester hours

ED 1309 EVIDENCE BASED INSTRUCTION IN EDUCATING STUDENTS IDENTIFIED WITH BEHAVIORAL DISABILITIES (TARGETING SOCIAL AND EMOTIONAL DISABILITIES)
This course involves the management of student behavior from an applied behavioral perspective. The principles that underlie learned behavior and how to apply them in various settings to modify or change behavior are emphasized. The course is taught using lectures, discussion, activities, and film. Prerequisites: ED 1301–1305. 3 semester hours

ED 1310 SUBJECT AREA CONTENT ACCESS FOR STUDENTS WITH LEARNING DISABILITIES
This course involves an introduction to definitions, concepts, and strategies of inclusive education in providing content access for students with learning disabilities. The course examines the philosophical, legal, and educational foundations and implications of inclusive education. Best practices for promoting participation of students with and without learning disabilities in general education are identified and discussed. Prerequisites: ED 1301–1305. 3 semester hours

ED 1321 LANGUAGE ARTS INSTRUCTION AND ASSESSMENT IN THE MIDDLE SCHOOL
This course focuses on literacy instruction and assessment for students in middle school. Prerequisites: ED 250, 1221. 3 semester hours

ED 1322 INSTRUCTION AND ASSESSMENT—MATHEMATICS
This course prepares preservice middle level teachers to effectively teach mathematics in grades four through eight and to design assessments that target academic standards and assessment anchor content standards in mathematics. The National Council for Teachers of Mathematics (NCTM) Principles and Standards for School Mathematics and Curriculum Focal Points, and the National Middle School Association (NMSA) Initial Level Teacher Preparation Standards provide a central focus for this course. Topics studied are the foundations and perspectives of teaching mathematics, the development of mathematical concepts and procedures, teaching strategies, learning activities related to specific mathematical topics, and the use of technology. The Pennsylvania Department of Education
competencies covered in this course include those listed for number and operation, algebra, geometry, measurement, and data analysis and probability. As part of this course, students participate in field experiences that enable them to relate the course content to teaching. Prerequisites: ED 1321, 1326. 3 semester hours

**ED 1323 SOCIAL STUDIES INSTRUCTION AND ASSESSMENT IN MIDDLE SCHOOL**

The purpose of this course is to provide students an opportunity to (1) examine the major issues and challenges in the field of social studies; (2) learn to develop lesson plans, assessments, and curriculum units appropriate to the needs of students in grades 4 through 8 and aligned with state and professional association standards; and (3) experience through assignments, instruction, and field placements a variety of strategies that enable them to teach social studies effectively in an integrated and engaging performance-based learning environment. The goals of this course reflect the academic standards of the Pennsylvania Department of Education and the content standards and performance expectations of the National Council for Social Studies’ *National Standards for Social Studies Teachers* (2000) “to assure that (1) social studies teachers possess the knowledge, capabilities, and dispositions associated with the central concepts, tools of inquiry, and structures of the disciplines that make up the social studies and (2) that they are able to create learning experiences that make these aspects of the subject matter meaningful for learners” (p. 17). Prerequisites: ED 1321, 1326. 3 semester hours

**ED 1325 ADVANCED ASSESSMENT IN MIDDLE SCHOOL**

The course content is organized to provide candidates with the knowledge and skills to recognize students having difficulty, identify student challenges, design interventions (with collaborative assistance from colleagues when needed), and test the effectiveness of appropriate interventions. Course content enables candidates to learn how to understand and use data about student learning (standardized tests and other assessment practices), adapt and modify instruction, use technology appropriately, and adapt curriculum successfully. Explicit attention is paid to Pennsylvania’s academic standards and assessment anchor content standards for grades 4–8, as well as be consistent with authentic, screening, diagnostic, formative, benchmark, and summative assessments. This course includes 15 hours of Stage Three (pre-student teaching) fieldwork. Candidates work with small groups of students in school or in after school settings under the supervision of a certified teacher. For this phase of clinical (field) experience, middle level candidates will be admitted to the education program and have taken at least one methods course, but will not be in full control of a class. (PDE’s Framework for Grades 4–8 Program Guidelines, 2008) Prerequisites: ED 1321, 1326. 3 semester hours

**ED 1326 CLASSROOM MANAGEMENT IN THE MIDDLE SCHOOL**

This course examines the issues involved with the control of behavior in a middle school classroom setting. The course discusses the different philosophies, models, and concrete strategies that can be used to guide and maintain classroom organization and control, as well as those strategies used to defuse or redirect inappropriate adolescent behaviors. Student motivation and the relationship between curriculum content and student motivation are discussed. Students learn to use functional behavioral assessments within the classroom and the specific strategies necessary to deal with severe behaviors. Building a positive, supportive, and challenging learning environment is emphasized as the pivotal mechanism for the shaping of appropriate academic behaviors in both inclusive and general classroom situations. Note that this course includes a 15-hour level 3 field experience component. Prerequisite: ED 250, 1222. 3 semester hours

**ED 1401 STUDENTS WITH DEVELOPMENTAL DISORDERS: INSTRUCTIONAL AND ASSESSMENT PRACTICES**

This course provides students with an understanding of the theoretical and conceptual issues currently under debate in the field of developmental disabilities. Students examine the identification criteria, instructional strategies, and program development for children with mental retardation and autistic spectrum disorders. Objectives stress adapting environments, materials, and instruction to facilitate inclusion and teaching functional life skills within a special education curriculum. Prerequisites: ED 1306–1310. 3 semester hours

**ED 1402 EVIDENCE BASED EFFECTIVE INSTRUCTION IN EDUCATING STUDENTS IDENTIFIED WITH A LOW INCIDENCE DISABILITY**

This course provides information on the nature and needs of students (Pre-K–8) with low-incidence disabilities. This includes individuals with moderate to severe mental retardation, autism, physical disabilities and/or multiple disabilities. The course begins with an overview of the psychological, social, and emotional characteristics of students with low-incidence disabilities. A variety of assessments (functional, criterion-referenced, curriculum-based, and state alternative assessments) are reviewed. Emphasis is on instructional strategies for the acquisition of age appropriate functional skills in both general education and community-based settings. Current research-based evidence to support effective practice is emphasized. Prerequisites: ED 1301–1305. 3 semester hours

**ED 1403 EVIDENCE BASED PRACTICES IN EARLY CHILDHOOD EDUCATION**

This course assists candidates in identifying and becoming involved with the Pre-K–4 field and developing their leadership capacity. Issues of evidence based practice as related to advocacy, collaboration, cooperation, and issues and trends in early childhood education are addressed. Prerequisites: ED 1301–1305. 3 semester hours

**ED 1405 COLLABORATION AND INCLUSION**

This course helps students develop an understanding of the major issues involved in working as a member of a team and in helping others from multiple teaching positions in general and special education. This course focuses on effective strategies for facilitating inclusion of students with special needs in the general education classroom, and collaboration with families, general and special educators, paraprofessionals, and related service providers in the school and community. A multidisciplinary approach to assessment and intervention is emphasized. Prerequisites: ED 1401–1403. 3 semester hours

**ED 1410 STUDENT TEACHING—EARLY CHILDHOOD EDUCATION AND SPECIAL EDUCATION**

Student teachers observe and teach in classroom situations during the course of this semester. The classroom experience is a period of fourteen weeks and is under the supervision of a professor from the teacher education program and also experienced teachers from local cooperating schools. The student teaching experience requires full-time presence in the school for one full semester. Open to seniors only. All students must have required clearances before the semester begins. Please contact the Office of Field Experience and Certification for more information. Prerequisite: Permission of the director of field experience and certification. 12 semester hours

**ED 1411 STUDENT TEACHING—MIDDLE YEARS**

Student teachers observe and teach in classroom situations during the course of this semester. The classroom experience is a period of fourteen weeks and is under the supervision of a professor from the teacher education program and also experienced teachers from local cooperating schools. The student teaching experience requires full-time presence in the school for one full semester. Open to seniors only. All students must have required clearances before the semester begins. Please contact the Office of Field Experience and Certification for more information. Prerequisite: Permission of the director of field experience and certification. 12 semester hours

**ED 1412 STUDENT TEACHING—SECONDARY EDUCATION**

Student teachers observe and teach in classroom situations during the course of this semester. The classroom experience is a period of fourteen weeks and is under the supervision of a professor from the teacher education program and also experienced teachers from local cooperating schools. The student teaching experience requires full-time presence in the school for one full semester.
Open to seniors only. All students must have required clearances before the semester begins. Please contact the Office of Field Experience and Certification for more information. Prerequisite: Permission of the director of field experience and certification. 12 semester hours

**ED 1420  TEACHING GEOGRAPHY AT THE MIDDLE LEVEL**

The purpose of this course is to provide students an opportunity to (1) examine the major issues and challenges in the field of geography education; (2) learn to develop lesson plans and assessments appropriate to the needs of students in grades 4–8 and aligned with relevant state and professional association standards; (3) experience through assignments and instruction a variety of strategies that enable them to teach geography and relevant social studies concepts effectively in an integrated and engaging performance-based learning environment; and (4) improve their own understanding of important geography concepts. Prerequisite: ED 1121. 3 semester hours

**ED 1421  LITERACY INTERVENTION IN THE CONTENT AREAS FOR LEARNERS WITH DISABILITIES**

This course involves development and implementation of effective curriculum and materials to educate students with special needs in reading, writing, and mathematics. Prerequisites: ED 1422, 1424. 3 semester hours

**ED 1422  TEACHING ENGLISH LANGUAGE LEARNERS**

This course includes both culture and English language skills in a comprehensive format. It seeks to provide students with the theories as well as practical and effective resources necessary to meet the educational challenges faced by mainstream classroom teachers of culturally diverse English learners. Students study current and established theories of culture and language through a variety of formats, including readings, classroom observations, literature reviews, and class discussions. Upon completion of the course, students have a basic understanding of the theoretical and foundational base of multicultural education and English as a second language, which will better equip them to accommodate diversity in the classroom. Prerequisites: ED 1322, 1323, 1325. 3 semester hours

**ED 1423  COLLABORATION AND INCLUSION**

This course helps students develop an understanding of the major issues involved in working as a member of a team and in helping others from multiple teaching positions in general and special education. This course focuses on effective strategies for facilitating inclusion of students with special needs in general education, classroom, and collaboration with families, general and special educators, paraprofessionals, and related service providers in the school and community. A multidisciplinary approach to assessment and intervention is emphasized. Prerequisites: Ed 1422, 1424. 3 semester hours

**ED 1424  SCIENCE INSTRUCTION AND ASSESSMENT IN MIDDLE SCHOOL**

This course is intended to prepare teacher candidates for a wide variety of middle level students. Teacher candidates learn how to examine curricular resources through the lenses of accuracy of factual knowledge, organization according to young adolescent conceptual development, and how well the materials link to students’ natural curiosity to build skills and knowledge in the sciences. This course enables teacher candidates to evaluate students’ knowledge of science; conceptual and skill development; and metacognitive abilities in relation to this knowledge base. Teacher candidates learn how to utilize effective instructional strategies drawn from evidence based best practices. As a result, teacher candidates understand students’ learning in the context of science; learn how to recognize and respond to their students’ preconceptions and limited knowledge; and have extensive opportunities to practice instructional strategies to address these issues. Prerequisites: ED 1322, 1323, 1325. 3 semester hours

**TED 1211  TECHNOLOGY: INSTRUCTIONAL, ASSISTIVE, UNIVERSAL DESIGN TO SUPPORT READING, MATHEMATICS AND WRITING**

This course involves the way candidates must use their understanding and knowledge about the complex characteristics of children’s families and communities to create and sustain respectful, reciprocal relationships that support and empower families, and to involve all families in their children’s development and learning. (Pennsylvania Department of Education Pre-K–4 Program Specific Guidelines, 2008). Prerequisites: ED 1201, 1202, 1206. 3 semester hours

**ENGINEERING**

**ENGR 100  UNDERGRADUATE ENGINEERING RESEARCH COURSE**

Independent research with a faculty member on a topic of mutual interest. Credit is granted only to students who function as unpaid undergraduate research assistants, working with a faculty member on research in the professor’s area of expertise. Prerequisite: Consent of instructor. Optional course. 1–3 semester hours

**ENGR 111  ENGINEERING TECHNIQUES**

An introduction to engineering techniques, experimentation, data analysis, modeling, graphics, and technical writing. Ethics and professionalism are also covered. Team projects are included. Lab exercises are drawn from the four major disciplines of engineering. This is a writing-enriched course. One lecture and one two-hour lab per week. 2 semester hours

**ENGR 112  COMPUTER PROGRAMMING AND ENGINEERING PROBLEM SOLVING**

An introductory course in structured computer programming and its use in solving engineering problems. The emphasis is on the logical analysis of problems and the formulations leading to solutions. One lecture and one two-hour lab per week. 2 semester hours

**ENGR 113  COMPUTER-AIDED ENGINEERING DESIGN**

An introduction to graphics and computer-aided drafting skills using Auto-CAD. This course explores various application areas to include electrical/electronics, construction, robotics, and solar and mechanical systems. One lecture and one two-hour lab per week. 2 semester hours

**ENGR 114  ENGINEERING GRAPHICS AND COMPUTER-AIDED DESIGN**

An introduction to engineering graphics and visualization, including sketching, line drawing, and solid modeling, using a commercial CAE package to demonstrate various concepts. This course develops students’ ability to think visually, communicate spatial information to an engineering audience through parametric solid modeling drafting standards, and begin to recognize the connection between a virtual design and an actual component. One lecture and one two-hour lab per week. 2 semester hours

**ENGR 200  UNDERGRADUATE ENGINEERING RESEARCH COURSE**

Independent research with a faculty member on a topic of mutual interest. Credit is granted only to students who function as unpaid undergraduate research assistants, working with a faculty member on research in the professor’s area of expertise. Prerequisite: Consent of instructor. Optional course. 1–3 semester hours

**ENGR 213  STATICS**

Topics in this course include vector algebra, concurrent force systems and equilibrium of a particle, general force systems and equilibrium of a rigid body, elements of structural analysis, shear and bending moment diagrams, centroids, hydrostatic forces, moments of inertia, and friction. Prerequisite: MATH 131 or 141. Corequisite: PHYS 161. 3 semester hours

**ENGR 214  DYNAMICS**

Topics in this course include kinematics of a particle; kinematics of a particle using Newtonian, energy, and momentum methods; kinematics of rigid bodies in two dimensions; mass moments of inertia and kinetics of rigid bodies; and mechanical vibrations. Prerequisite: ENGR 213. Corequisite: MATH 133 or 142. 3 semester hours

**ENGR 219  ELECTRIC CIRCUITS**

The fundamental laws and procedures of electric circuit analysis, including Kirchhoff’s laws, superposition, Thévenin’s and Norton’s theorems. Elementary transients, sinusoidal steady-state analysis,
impedance, power transfer, and operational amplifiers. Corequisites: MATH 133 or 142, PHYS 162. 3 semester hours

ENGR 220 ANALYSIS OF LINEAR ELECTRICAL SYSTEMS
Polyphase systems, AC power, frequency response, Bode diagrams, 2-port networks, transformers, Fourier series, and Laplace transforms as applied to electric circuit analysis. Prerequisites: ENGR 219, MATH 133 or 142, PHYS 162. 3 semester hours

ENGR 223 ELECTRIC CIRCUITS LABORATORY
Laboratory experiments related to the topics in ENGR 219. Selected topics in linear algebra, matrix methods, and the solution of simultaneous equations are covered. Corequisite: ENGR 219. 1 semester hour

ENGR 224 ANALYSIS OF LINEAR ELECTRICAL SYSTEMS LABORATORY
Lab experiments related to the topics in ENGR 220. Corequisite: ENGR 220. 1 semester hour

ENGR 300 UNDERGRADUATE ENGINEERING RESEARCH COURSE
Independent research with a faculty member on a topic of mutual interest. Credit is granted only to students who function as unpaid undergraduate research assistants, working with a faculty member on research in the professor’s area of expertise. Prerequisite: Consent of instructor. Optional course. 1–3 semester hours

ENGR 314 INTRODUCTION TO CONTROL SYSTEMS
An introduction to the analysis and design of feedback control systems. Application of Laplace transforms and block diagrams to the description of control systems. Stability analysis and performance evaluation. Supported by laboratory demonstrations. Prerequisite: ENGR 220. 3 semester hours

ENGR 315 PROBABILITY, STATISTICS, AND RANDOM PROCESSES FOR ENGINEERS
This course is designed to give the engineering student an introduction to the essentials of probability, statistics, and random processes. The engineering application of these concepts is reinforced by example. Topics include conditional probability, Bayes' theorem, continuous and discrete random variables and their distribution functions, point and interval estimation, hypothesis testing, ensemble and time averages, stationarity, and ergodicity. Prerequisite: MATH 133 or 142. 3 semester hours

ENGR 320 FLUID MECHANICS
A study of incompressible fluids at rest and in motion. Hydrostatics, buoyancy, and stability. Eulerian and Lagrangian descriptions; the velocity field. Control-volume analysis and the conservation of mass, energy, and momentum. Inviscid flows; the Euler and Bernoulli equations. Viscous flows; the boundary layer, lift, and drag. Dimensional analysis and similarity. Laminar and turbulent flow in pipes, fittings and open channels. Application and computer techniques to the solution of problems. Prerequisites: ENGR 214 and MATH 241. 3 semester hours

ENGR 323 MECHANICS OF DEFORMABLE BODIES
Fundamental principles of mechanics: equilibrium; force-deformation relations; geometric compatibility; stress and strain. Introduction to the analysis of simple structural elements subjected to axial loads, shear, bending, and torsion. Combined stresses at a point. Euler buckling theory. Prerequisite: ENGR 213. Corequisite: MATH 133 or 142. 3 semester hours

ENGR 325 THERMODYNAMICS
Properties of pure substances. The ideal gas. The principle of corresponding states. First and second laws of thermodynamics. Enthalpy, entropy, and availability. Thermodynamic processes and the thermodynamic cycle. Equations of state and other thermodynamic relations for simple compressible substances. Introduction to power and refrigeration cycles. Prerequisites: CHEM 146, PHYS 162, and MATH 142 or 133. 3 semester hours

ENGR 326 MATERIALS ENGINEERING
The interrelationship between the structure of materials in the solid state (atomic, molecular, crystalline, and aggregate structure) and their engineering properties. Theory of the behavior of materials including metals, polymers, ceramics, asphalt, concrete, wood, and composites. Introduction to corrosion. Processing techniques. Discussion of destructive and nondestructive testing, statistical quality control, joining, composite materials, polymers, and degradation. Prerequisites: ENGR 213 and CHEM 145. 3 semester hours

ENGR 400 UNDERGRADUATE ENGINEERING RESEARCH COURSE
Independent research with a faculty member on a topic of mutual interest. Credit is granted only to students who function as unpaid undergraduate research assistants, working with a faculty member on research in the professor’s area of expertise. Prerequisite: Consent of instructor. Optional course. 1–3 semester hours

ENGR 401, 402 SENIOR PROJECT I, II
A capstone experience in which the student undertakes an engineering project incorporating standards and realistic constraints that include the following considerations: economic; environmental; sustainability; manufacturability; constructability; ethical; health and safety; social; and political. These projects involve creative conception, design, development, construction, and evaluation. Students work in small groups under the guidance of a faculty advisor. Progress reports are required in both semesters. A formal written report and an oral presentation are also required at the conclusion of the project. Prerequisite: Senior status. 2 semester hours each

ENGR 412 ENGINEERING ECONOMICS
An introduction to the economic environment of industry. Time value of money, cash flow analysis, rate of return, depreciation, taxes, and linear programming. Review of corporate economic practices to develop basic understanding of the economic evaluation of engineering alternatives and new engineering programs. Several cases of engineering decision-making situations are analyzed. Fall and spring terms. Prerequisite: Junior status. 3 semester hours

ENGR 488 SPECIAL ENGINEERING TOPICS
Offering special topics or follow-up courses to senior students when there is sufficient demand and faculty interest. 4 semester hours

ENGR 499 INDEPENDENT STUDY
The student, under the general supervision of a faculty member or qualified specialist from industry, pursues an approved research topic of his or her own choice. The student is encouraged to investigate areas for which background material is not included in the regular curriculum. The student researcher is encouraged to become progressively more independent and experience research as it is done in graduate thesis work. Enrollment is restricted to students recommended by a faculty member. Credit to be arranged.

CHEMICAL ENGINEERING

CHE 222 CHEMICAL ENGINEERING PRINCIPLES
Stoichiometry of industrial-scale chemical and biochemical processes. Process variables and their measurement. Correlation of physical and thermophysical properties. Material and energy balances on nonreacting and reacting systems. Ethics, safety, and loss prevention. Prerequisites: ENGR 112, 113, or 114, and CHEM 146. 3 semester hours

CHE 327 CHEMICAL ENGINEERING LABORATORY I
Principles of material and energy balances, fluid mechanics, and heat transfer applied to small-scale equipment for chemical and biochemical processes. The evaluation of experimental observations and report writing are emphasized. This is a writing-enriched course. Corequisite: CHE 329. 1 semester hour

CHE 329 TRANSPORT PHENOMENA
The transport of momentum, heat, and mass. Emphasis is placed on the mathematical formulation of problems, and the discussion of engineering problems in physical terms. Motion of viscous fluids, including boundary-layer theory and turbulent momentum transfer; conductive, convective, and radiative heat transfer; molecular diffusion and convective mass transfer. Corequisites: MATH 242 and CHE 222. 4 semester hours
CHE 330  CHEMICAL ENGINEERING THERMODYNAMICS  
Review of first and second laws; heat effects; PVT and secondary thermodynamic relationships for real fluids; properties of mixtures, fugacity, activity; phase equilibria; chemical equilibria.  
Prerequisites: CHE 222 and ENGR 325. 3 semester hours

CHE 332  MASS-TRANSFER OPERATIONS  
General principles of equilibrium and nonequilibrium mass-transfer operations as applied to gas absorption, distillation, extraction, and humidification. Equipment design procedures are emphasized.  
Prerequisite: CHE 329 and 330. 4 semester hours

CHE 425  PROCESS DESIGN METHODS  
Development of process design information and decisions for batch and continuous processes; estimation of fixed investment and product cost; optimum design of equipment and operations; bases for rules of thumb; computer simulation for equipment design and flow-sheeting; energy conservation; process safety and environmental considerations in design. This is a writing-enriched course.  
Prerequisite: CHE 332. Corequisite: ENGR 412. 3 semester hours

CHE 427  CHEMICAL/BIOCHEMICAL ENGINEERING LABORATORY II  
Continuation of CHE 327 to include operations such as absorption, distillation, drying, extraction, bioseparations, and, bioreactions. This is a writing enriched course. Corequisite: CHE 329. 1 semester hour

CHE 428  PROCESS DESIGN  
Presentation and discussion of real process design problems, with case studies in chemical processing. Emphasis on conception of processes, as well as analysis and economic balances, to specify optimum design and operating conditions. Prerequisite: CHE 425. 3 semester hours

CHE 429  CHEMICAL REACTION ENGINEERING  
Kinetics of homogeneous reactions; differential and integral analysis of kinetic data; design of ideal reactors for simple and complex reactions; analysis of nonisothermal reactors; introduction to fluid-fluid and catalyzed gas-solid reactions. Prerequisite(s): CHE 329 and 330. 3 semester hours

CHE 430  INTRODUCTION TO BIOTECHNOLOGY  
Survey of the application of engineering principles to biotechnology, including the use of agents such as enzymes and genetically engineered organisms. The culture of hybridomas, as well as plant and animal cells, is discussed. Emphasis is on the engineering systems and principles that allow the biotechnological agents to be used in a practical context. The analysis and design of reactors for biologically mediated transformations is addressed. Bioreactors are surveyed including both traditional and novel types. Current literature is drawn upon extensively. Prerequisites: CHE 329 and 332 (or by permission of instructor). 3 semester hours

CIVIL ENGINEERING

CE 205  SURVEYING  
Measurements and errors in measuring. Leveling distance and angular measurements. Traversing, topographic surveys, and mapping. Traverse calculations including determination of areas. One-one hour lecture and one two-hour laboratory per week. Formerly offered as CE 305. 2 semester hours

CE 206  STRUCTURES AND MATERIALS LABORATORY  
Basic lab tests to measure engineering properties of construction materials such as concrete, steel, timber, masonry, etc. Experimental analysis and evaluation of behavior of structural elements and systems under various loading states. This is a writing-enriched course with emphasis on technical writing skills. One one-hour lecture and one three-hour laboratory per week. Corequisite: ENGR 323. Formerly offered as CE 306. 2 semester hours

CE 250  TRANSPORTATION ENGINEERING  
Study of the general concepts in planning and design of airports, highways, railroads, water transportation, and mass transit systems. Methodology of determining transportation systems requirements and feasibility. Formerly offered as CE 350. 3 semester hours

CE 304  WATER RESOURCES AND ENVIRONMENTAL ENGINEERING LABORATORY  
Lab and field experiments to introduce, demonstrate, or apply theory from fluid mechanics, hydrology, chemistry, and environmental engineering. One one-hour lecture and one three-hour laboratory per week. This is a writing-enriched course. Prerequisite: CHEM 146. 2 semester hours

CE 330  WATER AND WASTEWATER TREATMENT  
Water quality standards and regulations governing the design and operation of water and wastewater treatment systems. Reaction kinetics and material balances for the design and analysis of reactors and environmental systems. Design and analysis of water and wastewater treatment systems. Prerequisite: CE 347. Corequisite: ENGR 320. Formerly offered as CE 440. 3 semester hours

CE 334  REINFORCED CONCRETE DESIGN  
Design of reinforced concrete structural elements such as beams, one-way slabs and columns for moment, shear, and axial force. Deflection computation techniques and the design of reinforced concrete systems. Emphasis is on ultimate strength method of design. Prerequisites: CE 342, ENGR 323. Formerly offered as CE 444. 3 semester hours

CE 342  STRUCTURAL ANALYSIS I  
Analysis of statically determinate beams, trusses, and frames for axial force, shear, and moment. Displacement of structures using equilibrium, geometric, energy, and virtual work methods. Influence lines. Introduction to the solution of statically indeterminate problems. Prerequisite: ENGR 213. 3 semester hours

CE 343  SOIL MECHANICS  
Soil description, clay mineralogy, phase relationships, and classification systems. Fundamentals of stress distribution, principal stresses, and effective stresses. One- and two-dimensional flow through porous media. Consolidation theory and time rate of settlement. Elements of shear strength and applications to foundations, retaining walls, and slope stability. Lab tests of basic soil properties. Three one-hour lecture and one two-hour laboratory per week. Prerequisite: ENGR 323. 4 semester hours

CE 345  STRUCTURAL ANALYSIS II  
Matrix flexibility and stiffness techniques applied to the solution of statically determinate and indeterminate framed structures. Approximate analysis techniques including moment distribution. Computer applications. Prerequisite: CE 342. 3 semester hours

CE 347  ENVIRONMENTAL ENGINEERING  
Basic concepts of environmental analysis and planning; introduction to water supply, water and wastewater treatment, air pollution, noise pollution, municipal waste, hazardous waste, and biodiversity; relationships among local, regional, and global environments; environmental-economic relationships. Prerequisite: CHEM 146. 3 semester hours

CE 401  LAND DEVELOPMENT  
An integrated theory and applications course on urban area site planning. Site planning analysis, zoning, subdivisions, environmental concerns, techniques of design, and public meeting presentations. The course is taught from a project perspective, with practical applications from a nearby site. Prerequisites: CE 205, 343, 435. 3 semester hours

CE 431  COMPUTATIONAL METHODS IN CIVIL ENGINEERING  
Numerical solution of ordinary and partial differential equations and applications in civil engineering. Programming in the Matlab environment. Prerequisite: Math 242. Formerly offered as CE 341. 3 semester hours

CE 435  HYDRAULICS AND HYDROLOGY  
Design of water supply networks, including pump stations; gradually varied open-channel flow; and design of sanitary sewer systems. Frequency analysis of hydrologic events; rainfall-runoff analyses including unit hydrograph and synthetic hydrograph methods; and design of stormwater sewers and control systems. Prerequisites: CE 347, ENGR 320. Formerly offered as CE 348. 3 semester hours
CE 441  STRUCTURAL STEEL DESIGN
General principles of structural design. Design of structural steel elements under the action of axial, shear, bending, and combined stresses. Stability of structural elements. Connections. Composite design. Introduction to the design of framed structures. Prerequisites: CE 342, ENGR 323. 3 semester hours

CE 445  CIVIL ENGINEERING
PROFESSIONAL PRACTICE SEMINAR
Presentation and discussion of current civil engineering problems and practices. Standards of professionalism and ethics. Professional practice issues and professional licensure. Prerequisite: Senior standing. 1 semester hour

CE 446  FOUNDATION ENGINEERING
Design of simple and combined footings, retaining walls, piles, and drilled pier foundations. Prerequisites: CE 334, 343. 3 semester hours

CE 448  MUNICIPAL AND INDUSTRIAL WASTE ENGINEERING
Design of waste control systems: generation; storage; collection; transfer; disposal; reuse; recycling; materials and energy recovery; equipment; routing methodologies; waste systems analysis; economic, environmental, and regulatory considerations. Prerequisite: CE 347. 3 semester hours

CE 449  CONSTRUCTION ENGINEERING AND MANAGEMENT
Systems, practices, and procedures for resource, schedule, and financial management. Planning, estimating, and scheduling of manpower and equipment. Design and construction engineering. Organizations, contracts, analysis, and reporting. Computer-based network systems and applications, including CPM/PERT. Prerequisite: Junior standing. 3 semester hours

CE 450  HIGHWAY ENGINEERING
Design of alignment, grades, channelization, and intersections. Traffic engineering, drainage, and introduction to asphalt and concrete pavement design. Prerequisite: CE 250. 3 semester hours

CE 453  ADVANCED SOIL AND ROCK ENGINEERING
Advanced topics in settlement and stability analyses. Rock mechanics, interaction of structure and supporting medium. Prerequisite: CE 343. 3 semester hours

CE 457  ENVIRONMENTAL IMPACT ANALYSIS
This course is an analysis of environmental impacts with emphasis on preparation of environmental impact statements; NEPA regulations and CEQ guidelines; physical impacts; land use and related impacts, socioeconomic impacts; health risk assessment; public involvement; assessment methodologies; and presentation. Prerequisite: CE 347. Corequisite: CE 435. 3 semester hours

CE 461  INTRODUCTORY FINITE ELEMENTS
Background theory and formulation of the finite element method. Applications to one- and two-dimensional problems. Computer programming and techniques of analysis. Prerequisite: CE 345. 3 semester hours

CE 462  ADDITIONAL TOPICS IN STRUCTURAL DESIGN
Advanced topics in the design of reinforced and prestressed concrete, structural steel, masonry, and wood structures. Seismic design and connections. Computer applications in structural design. Prerequisites: CE 334, 441. 3 semester hours

ELECTRICAL ENGINEERING

EE 230  LOGIC DESIGN
An introduction to digital system design methods including Boolean algebra, minimization of combinational switching functions, Karnaugh maps, the Quine-McClusky method, number systems, typical logic gates, codes, code conversion methods, design of sequential switching circuits, flip-flops, electronic switching circuit packages, and typical design problems. 3 semester hours

EE 232  LOGIC DESIGN LABORATORY
A laboratory course related to the topics of EE 230 Logic Design. Students design, simulate, construct, and test various logic circuits. Corequisite: EE 230. 1 semester hour

EE 313  ELECTROMAGNETICS
A study of distributed electromagnetic systems and their lumped parameter characteristics. The applications of Maxwell’s equations (in differential and integral forms) to electrostatic, magnetostatic, and time varying fields. Simple boundary value problems using Laplace’s and Poisson’s equations. Development of concepts embodying wave phenomena, generalized conductances, and conservation principles. Prerequisites: ENGR 220, MATH 241. 3 semester hours

EE 333  SENSORS LABORATORY
Students are introduced to the operation of various sensors through a series of laboratory activities that detect physical quantities such as vibration, strain, rotational speed, and temperature. The essentials of signal conditioning are also covered. Prerequisite: ENGR 220. 1 semester hour

EE 334  POWER ENGINEERING LABORATORY
This laboratory course is related to the topics in EE 335. Students get hands-on experience with transformers, induction machines, synchronous machines, and a small-scale physical model of a transmission line. They experimentally validate the electrical models and characteristics of these components of the power systems derived in EE 335. Corequisite: EE 335. 1 semester hour.

EE 335  POWER ENGINEERING
This course focuses on theory, modeling, and performance of power system components, such as synchronous machines, induction machines, transformers, and transmission lines. Prerequisite: ENGR 220. 3 semester hours

EE 336  SIGNAL ANALYSIS
This course focuses on the representation, design, and analysis of continuous and discrete-time signals and systems. Topics include convolution, Fourier series, Fourier transform, Nyquist sampling theorem, z-transform, and linear filters. Associated laboratory work. Prerequisite: ENGR 220. 4 semester hours

EE 337  ELECTRONICS I
An introduction to the operation of solid state devices at the circuit component level through various modeling and graphical methods. Analytical techniques include small signal circuit models, biasing considerations, and AC/DC load lines. The OP AMP, PN junction diode, Zener diode, BJT and FET family of transistors are presented. Applications include rectifiers, regulators and amplification schemes. One-credit laboratory is included. Prerequisite: ENGR 219; PHYS 261 is also strongly recommended. 4 semester hours

EE 338  ELECTRONICS II
Building on the inventory of solid-state devices introduced in EE 337, this course develops greater sophistication in circuit applications. Topics such as differential/difference amplifiers, frequency response, GBW product, BW compensation, power amplification, negative feedback amplifier theory, stability, and positive feedback oscillators are covered. Students must complete a design project. Prerequisites: EE 337 and ENGR 220. 4 semester hours

EE 341  DATA STRUCTURES AND ALGORITHMS
Introduction to basic data structures and abstract data types such as arrays, tables, stacks, queues, trees, and graphs; use of recursive algorithms in problem solving; introduction to the notion of computational complexity and its use in analysis of algorithms; comparison of various algorithms for sorting and searching; algorithms for solving engineering problems, including depth-first and breadth-first search, shortest path, backtracking and maximal flow algorithms; introduction to the development of algorithms for parallel and distributed architectures. Students must complete a design project. Corequisite: EE 342. 4 semester hours

EE 342  C++ PROGRAMMING
This course is an introduction to C++ procedural programming, control structures, functions, arrays, pointers, and strings. Extens-sions of C++ to object-based programming include classes, abstract data
types, encapsulation, member access control, constructors, and destructors. C++ is an object-oriented language that uses operator overloading, inheritance, virtual functions, polymorphisms, I/O streams, templates, and exception handling. The course is intended primarily for students in the electrical engineering program enrolled in the computer track. Prerequisite: ENGR 112. 3 semester hours

EE 473 INSTRUMENTATION AND EXPERIMENTAL TECHNIQUES
This laboratory course is based on material in EE 471, EE 473, and EE 477. Students design, implement, and test circuits or systems in controls, computers, and communications. Prerequisites: EE 471, 473, 477. 2 semester hours

EE 474 DIGITAL FILTER DESIGN
After a review of discrete-time system theory and the z-transform, the fundamental properties and design of digital filters are presented, particularly IIR filters and linear-phase FIR filters. Special emphasis is placed on frequency and time domain properties, especially the symmetry properties of linear-phase filters. Prerequisite: EE 473. 3 semester hours

EE 475 INTRODUCTION TO IMAGE PROCESSING
An introduction to the theory and application of image processing techniques. Topics include image acquisition and display; the human visual response; image enhancement, smoothing, and sharpening; selected topics from two dimensional signal and system theory; image segmentation and restoration; and pseudocolor image processing. Prerequisite: EE 336. 3 semester hours

EE 476 COMMUNICATIONS SYSTEMS
An introduction to the theory and design of digital and analog communication systems. Includes a brief review of the Fourier transform, Fourier series, and signal analysis. The generation, detection, and performance of baseband pulse modulation, bandpass digital modulation, and analog modulation systems are discussed. If time permits, additional topics may include link budget analysis and spread spectrum systems. Prerequisites: EE 336, EE 337, ENGR 315, or by permission of the instructor in place of ENGR 315. 3 semester hours

EE 477 OPTICAL FIBER COMMUNICATION SYSTEMS
An introduction to optical communication systems covering the characteristics of the optical fiber as well as photodetection/photo-transmission devices. Specific topics include dispersion and attentuation in Si and GRIN fiber, LEDs/silicon laser diodes in photodetection. Prerequisites: EE 313, EE 337. 3 semester hours

EE 478 SPECIAL TOPICS IN ELECTRICAL ENGINEERING
Senior elective offering special topics according to student and faculty interest. 3 semester hours

ME 215 FUNDAMENTALS OF ENGINEERING MATERIALS AND DESIGN

ME 303 MECHANICAL MEASUREMENTS I
Basic principles underlying the construction and use of sensing and recording instrumentation for mechanical measurements. Data reduction and error analysis. Discussion of and lab experience in the use of transducers for the measurement of displacement; strain and stress; force and torque. One lecture and one three-hour lab per week. This is a writing-enriched course. Corequisite: ENGR 323. 2 semester hours

ME 304 MECHANICAL MEASUREMENTS II
A continuation of ME 303. Emphasis is on measurement of mechanical and thermodynamic properties of liquids and gases; pressure, temperature, viscosity, conductivity, etc. A variety of basic experiments illustrating the principles of fluid mechanics, thermodynamics, and heat transfer are conducted. One lecture and one three-hour lab per week. This is a writing-enriched course. Corequisites: ENGR 320, 325. 2 semester hours

ME 346 THERMODYNAMICS I
Energy analysis; vapor and gas power cycles; vapor and gas refrigeration cycles; thermodynamic properties of mixtures and solutions; psychrometry and air conditioning; reacting mixtures and combustion. Prerequisite: ENGR 325. 3 semester hours

ME 351 KINEMATICS
Geometry of motion—position, velocity, and acceleration. Motion analysis of linkages—quadric chains, slider-crank mechanisms, quick-return mechanisms, and intermittent motion mechanisms. Mechanism trains. Static and dynamic force analysis in mechanisms. Graphical, analytical, and numerical methods of solution. Prerequisite: ENGR 214. 3 semester hours

ME 352 MECHANICS OF ENGINEERING MATERIALS
Topics include deflection of beams; energy methods and structural analysis; analysis of stress and strain, stress and strain transformations, stress-strain relations, stresses in thin-walled pressure vessels, and failure criteria; buckling instability; and elementary plasticity. Prerequisite: ENGR 323. 3 semester hours
ME 354  COMPUTATIONS IN MECHANICAL ENGINEERING
The use of digital computers as a tool for the solution of engineering problems. Solution of roots of equations, systems of linear algebraic equations, regression, interpolation, differentiation, integration, and ordinary differential equations. Applications from statics, dynamics, fluid mechanics, thermodynamics, and solid mechanics. Corequisite: MATH 242. 3 semester hours

ME 407  MECHANICAL ENGINEERING SEMINAR I
Presentation and discussion of current engineering problems and solutions. Each student makes a presentation with faculty and visiting engineers participating as available. Prerequisite: senior status. 1 semester hour

ME 408  MECHANICAL ENGINEERING SEMINAR II
Professionalism in engineering, including ethics, safety, management, and society. Presentations and discussions. Prerequisite: senior status. 1 semester hour

ME 453  ENGINEERING VIBRATIONS
The response of single degree of freedom systems, damped and undamped, is found for harmonic and impulsive excitations. Application is made for the control of undesirable vibrations in structures, machines, and vehicles. Theory of measurement instruments, seismic, velocity, and acceleration. Two or more degrees of freedom systems are considered and analyzed using matrix formulation and computer solutions. Prerequisite: ENGR 214, ME 354. 3 semester hours

ME 455  HEAT TRANSFER
Introduction; steady and transient conduction; foundations of free and forced convection in internal and external flows; principles of thermal radiation including the concepts of black and gray surfaces, and gas radiation. Prerequisite: ENGR 320, 325. Corequisite: ME 354. 3 semester hours

ME 461  DESIGN
Introduction to the design of mechanical elements and assemblages. Design of components to static and dynamic failure criteria. Consideration of material use; economics; weight; ease of manufacture; etc. The integration of components into an assemblage with necessary compromises. Short projects to design components and assemblages to given criteria by synthesis and analysis. Prerequisite: ME 352. Corequisite: ME 351. 4 semester hours

ME 462  DESIGN OF MECHANICAL SYSTEMS
Individual and team design of several predominantly mechanical systems as an ongoing part of the course. Design topics include gear design, optimization, engineering statistics, and risk and reliability in design. Prerequisite: ME 461. 4 semester hours

ME 464  DESIGN OF FLUID- THERMAL SYSTEMS
Pipe and duct flow, piping system design, pumps and pumping systems, pump selection and specification, heat exchangers and their integration in thermal systems, piping networks. Design aspects include working systems, mathematical modeling, system simulation, computer-aided design, safety, reliability, and introduction to optimization. Team design of a fluid-thermal system is an ongoing part of the course. Prerequisites: ME 346, 455. 4 semester hours

ME 471  TOPICS IN MECHANICAL ENGINEERING
Special topics of current interest in mechanical engineering. Specific course offerings decided annually. Recent courses are Biomechanics, Bio-Heat and Mass Transfer, Introduction to the Finite Element Method, Applied Fluid Dynamics, Mechanics of Advanced Materials, and Heat Transfer Processes. Prerequisite: Senior status. 3 semester hours

ENGLISH

ENGL 100  FUNDAMENTALS OF ENGLISH
This course reviews the fundamentals of English composition: parts of speech, punctuation and mechanics, spelling, diction, sentence structure, the paragraph, outlining, the theme. The course, designed to assist students in increasing their level of competency in written expression, provides intense drill in fundamentals and frequent short writing exercises. Some writing exercises are designed to teach students the use of the dictionary and the use of the library. After successful completion of ENGL 100, students must enroll in ENGL 101. Not open to students who have received credit for ENGL 101. ENGL 100 may not be used as a humanities elective or to satisfy the humanities distribution requirement for Arts and Sciences students. 3 semester hours

ENGL 101  COMPOSITION AND CRITICAL THOUGHT
This intensive course in expository writing focuses on rhetorical and grammatical principles, logical expression, unity, coherence, emphasis, syntax, punctuation, and diction. Readings stimulate expression and provide examples of exposition and argumentation. Assignments include summary, analysis, and synthesis of primary and secondary sources. Research techniques, including note-taking, documentation, and outlining, support an analytical source-based research paper of eight to ten pages. ENGL 101 may not be used as a humanities elective or to satisfy the humanities distribution requirement for Arts and Sciences students. Prerequisite: ENGL 100 or approval of the English faculty. Some students may be exempted from this course, based on their proficiency. 3 semester hours

ENGL 102  ADVANCED COMPOSITION AND LITERATURE
Varied writing exercises teach students to express their own ideas as well as the ideas of others critically, logically, and creatively. Students are introduced to the principal literary genres of fiction, drama, and poetry as a means of stimulating critical thinking and further developing skills in advanced exposition. This course contributes toward satisfying the humanities distribution requirement. All sections are writing enriched. Prerequisite: ENGL 101. 3 semester hours

ENGL 103  FRESHMAN HONORS ENGLISH
Designed for students in the General Education Honors program, this course provides a challenging and unique experience in advanced exposition and literature. To enhance their reading, writing, and critical thinking skills, students study fiction, poetry, and drama and complete writing assignments pertaining to those literary forms. The course satisfies the ENGL 101/102 requirement in any major. All sections are writing enriched. 3 semester hours

ENGL 111  ENGLISH AS A SECOND LANGUAGE
This course is an intensive study of English grammar and pronunciation and includes systematic vocabulary building. Students work on an individual basis in the particular areas where their communication skills are weakest. Reading, writing, and oral skills correlate with other courses they are attending. After successful completion of ENGL 111, students must enroll in ENGL 101. Not open to students who have received credit for ENGL 101. ENGL 111 may not be used as a humanities elective or to satisfy the humanities distribution requirement. 3 semester hours

ENGL 131  LITERATURE OF THE WESTERN WORLD I
A critical and historical survey of the significant works in Western literature from the Ancient World through the Renaissance. Authors and works may include the Bible, Homer, Sophocles, Sappho, Ovid, Marie de France, Dante, Milton, and others. No prerequisite. 3 semester hours

ENGL 132  LITERATURE OF THE WESTERN WORLD II
A critical and historical survey of the significant works in Western literature from the early modern period to the present day. Authors may include Voltaire, Dostoevsky, Dickinson, Duras, Achebe, and others. No prerequisite. 3 semester hours

ENGL 133  BRITISH LITERATURE I (FORMERLY ENGLISH LITERATURE I)
A critical and historical survey of the significant works in British literature from the medieval period to the early modern period. Authors and works may include Beowulf, Chaucer, Shakespeare, Donne, Wroth, Milton, Behn, and others. No prerequisite. 3 semester hours

ENGL 134  BRITISH LITERATURE II (FORMERLY ENGLISH LITERATURE II)
A critical and historical survey of the significant works in British literature from the early modern period to the present day. Authors
may include Blake, Austen, Tennyson, Joyce, Woolf, Lessing, and others. No prerequisite. 3 semester hours

ENGL 145 WORLD LITERATURE
(FORMERLY ENGL 130)
A study in literary traditions ranging from China, India, Japan, African nations, and other cultures. The course investigates connections between Eastern and Western writers. Works studied include those by Li Po, Basho, Roy, Achebe, Dangarembga, Rumi, Aidoo, Desai, and others. 3 semester hours

ENGL 146 WOMEN WRITERS: 1800 TO THE PRESENT
(SAME AS WS 146)
This course examines the contributions of women in both fiction (the novel and the short story) and poetry in the 19th and 20th centuries. Some of the authors studied include Jane Austen, Emily Dickinson, Jean Rhys, and Virginia Woolf. The class emphasizes both the singular perspectives each writer brings to her work as well as each author’s perspectives on the role of women in her particular era. 3 semester hours

ENGL 147 LITERATURE OF THE AMERICAN MINORITY EXPERIENCE
(SAME AS WS 200 AND WS 247)
America is often called a great melting pot, yet many voices are often ignored or marginalized because they are not the voices of majority culture. In this class, students examine significant works from African Americans, Asian Americans, Chicano/as, Native Americans, and others. Studied writers include Zora Neale Hurston, June Jordan, Maxine Hong Kingston, M. Scott Momaday, Simon Ortiz, and Alberto Rios. 3 semester hours

ENGL 156 INTRODUCTION TO FICTION WRITING
(SAME AS CRWR 156)
This course introduces the beginning fiction writer to the technical aspects of the short story: setting, character, dialogue, point of view and plot. In addition, each class emphasizes the aesthetic dimensions of language. Not open to students who have completed ENGL 306. 3 semester hours

ENGL 157 INTRODUCTION TO POETRY WRITING
(SAME AS CRWR 157)
This course introduces the beginning poet both to the aesthetic and qualitative dimension of poetry writing and to the technical and quantitative considerations: meter, forms, rhyme, image, simile, metaphor, and symbol. Not open to students who have completed ENGL 307. 3 semester hours

ENGL 158 THE SHORT STORY
A survey of the various forms, techniques, and themes of the short story. Attention is given to larger aesthetic concerns and social context. This course is offered alternately as American and British. American authors studied include Steinbeck, Hemingway, O’Connor, Carver, Bambara, Alexie, and O’Brien. British authors range from Joyce, Lawrence, and Mansfield, to Amis, Sillitoe, Carter, and McEwan. 3 semester hours

ENGL 166 SCIENCE FICTION, FANTASY, AND HORROR
An investigation of various themes and issues raised in the literary and cinematic genres of science fiction, fantasy, and horror, including scientific dystopia and apocalypse, the quest myth, vampire literature, magical realism, and cyberpunk. Authors may include Poe, Asimov, Le Guin, Tolkien, Carter, King, and Rice. 3 semester hours

ENGL 167 SPORTS AND THE AMERICAN IMAGINATION
Through the analysis of novels, short stories, films, poetry, and essays, this course explores the ways in which sports comment on our needs, desires, and values as Americans. Particular attention will be given to the ways in which gender, sexuality, race, ethnicity, and class influence the way writers (and their characters) think about and use sports. Authors may include Hemingway, Malamud, Irving, Wilson, Kumin, Oates, and DeLillo. 3 semester hours

ENGL 176 INTRODUCTION TO SHAKESPEARE
This course introduces students to Shakespearean comedy, romance, history, and tragedy. Classes incorporate close readings, discussions of cultural background and interpretive approaches, skits, recordings, and movies. This course is not open to students who have completed ENGL 336. 3 semester hours

ENGL 301 METHODS OF LITERARY STUDY
An introduction to advanced literary study for English majors covering both research methods and reading and writing literary criticism. The course uses a workshop format. Work includes practice in library, archival, and online research; a study of significant critical and theoretical traditions; an introduction to literary theory; bibliography and editing; and explanation. Required for all English majors. 3 semester hours

ENGL 305 ADVANCED PROSE WRITING
(SAME AS CRWR 305)
An in-depth study of prose writing and creative nonfiction. Students will work on enhancing writing skills in such areas as journal writing, autobiography/memoir, creative nonfiction, specialized research projects, and the development of a writer’s portfolio. Prerequisites: ENGL 101 or 103 required and ENGL 102 strongly recommended. 3 semester hours

ENGL 306 ADVANCED FICTION WRITING
(SAME AS CRWR 306)
Dialogue, characterization, plotting techniques, and analysis of the forms of short fiction are considered. Several short stories are written, as well as a number of short dialogues and descriptions. Prerequisite: CRWR 151 or 156, or ENGL 156. 3 semester hours

ENGL 307 ADVANCED POETRY WRITING
(SAME AS CRWR 307)
This course provides guided practice in composing verse, exercises in developing imagery and prosodic analysis, with the purpose of imparting an enriched understanding and appreciation of poetry, as well as inspiring creativity. Prerequisites: CRWR 151 or 157. 3 semester hours

ENGL 308 PLAYWRITING (SAME AS CRWR 308)
Practice in writing one-act plays on assigned themes, with special attention to the tone of dialogue, techniques of exposition, and visualization of characters and scene. Prerequisite: ENGL 156, 157, 306, 307, or CRWR 151. 3 semester hours

ENGL 310 FEATURE WRITING FOR NEWSPAPERS AND MAGAZINES
This writing-enriched course provides guided practice in writing nonfiction feature stories for the periodical press. In addition to learning the theory of feature writing, students critique professional examples. Then, students apply this knowledge to writing and revising their own feature stories, compiling a portfolio, and preparing at least one story for publication. This course may have a service-learning component. Prerequisite: ENGL 101 or 103. 3 semester hours

ENGL 315 BIOGRAPHY
The principles of biography both in terms of composition and as a tool for literary and historical research are studied. Besides representative readings, students engage in a class project using primary sources with the objective of producing a biographical study. 3 semester hours

ENGL 316 LITERARY CRITICISM
A survey of the major developments in literary theory from the classical period to the present, with emphasis on those that have emerged as most significant in the 20th century. Students engage in applied literary criticism, writing interpretations of specific texts from a variety of critical approaches such as formalism, reader-response, feminism, psychoanalytical, and others. 3 semester hours

ENGL 317 SATIRE
A consideration of the nature of the satirical approach to life through literature, viewing the historical development of satire from the satyr play of Greek drama proceeding to satire written in English (fiction, essay, drama, poetry). 3 semester hours

ENGL 325 COMPARATIVE DRAMA
This course examines the drama of Western civilization through reading and discussing plays selected from the literatures of ancient (e.g., Aeschylus, Seneca), medieval (liturgical, anonymous), Renaissance (e.g., Racine, Jonson, Calderon de la Barca), and contemporary Europe (e.g., Stoppard, Beckett, Churchill). Some study will be made of the complex relationship between culture and literary form and instances will sometimes be taken from non-Western
literatures. The critical method of studying these texts will vary from year to year. This course fulfills one of the pre-1800 literature requirements for English majors. 3 semester hours

ENGL 326 LANGUAGES AND CULTURES
An interdisciplinary approach to the study of languages as they reflect cultures. Focus is on cultural factors which influence the communication process. Topics include linguistic analysis of English sounds, structures, and meanings; contrastive analysis of English and several other languages; contrastive analysis of several cultures; and consideration of differences in non-verbal language across cultures. Investigation of sociolinguistic implications of intercultural communication. 3 semester hours

ENGL 327 ENGLISH LINGUISTICS
The course is designed to increase students’ knowledge of the grammatical and phonic features of the English language and the major influences on its development, as well as to acquaint them with more general linguistic topics, including the communication of animals, theories of language origin, psychological differences among languages, types of semantic change, sources of new words, the development of lexicography, and recent theories such as those of structural linguistics and generative grammar. 3 semester hours

ENGL 328 HISTORY OF ENGLISH: VARIATIONS AND CHANGE
A linguistic investigation of the changes in English from Old English to Modern English. Study of differences among the varieties of contemporary English found throughout the world, with emphasis on American English. Analysis of regional dialects, social and ethnic dialects, gender, language variation, and language diversity. 3 semester hours

ENGL 329 SEMANTICS
An introduction to semantics from both a historical and linguistic approach. Students observe, analyze, and discuss meaning in human languages and become familiar with traditional and modern semantic theories. While English is used to illustrate universal concepts in semantics, semantic structures in other languages are also analyzed. 3 semester hours

ENGL 335 MEDIEVAL LITERATURE (FORMERLY CHAUCER: MEDIEVAL LITERATURE)
A study of English and related literature from the 8th through the 15th centuries. Works and authors may include Beowulf, de Troyes, Chaucer, Kempe, Julian of Norwich, Langland, and Arthurian legends. Attention will be given to the historical and cultural foundations of the literature. Satisfies one pre-1800 literature requirement for the English major. 3 semester hours

ENGL 336 SHAKESPEARE
An in-depth study of various aspects of Shakespeare’s plays and poems, with special attention given to his cultural and historical importance. While the focus may shift each time the course is offered, the course considers Shakespeare’s influence on other authors, the plays in performance, and the variety of critical responses to his work. Satisfies one pre-1800 literature requirement for the English major. 3 semester hours

ENGL 337 RENAISSANCE LITERATURE (FORMERLY 16TH-CENTURY LITERATURE)
A study of the nondramatic literature of the late 15th, 16th, and 17th centuries. Authors may include More, Spenser, Sidney, Donne, Lanyer, Wroth, Bacon, Browne, and others. Special attention is given to the development of poetic form during the Renaissance. Satisfies one pre-1800 literature requirement for the English major. 3 semester hours

ENGL 338 RENAISSANCE DRAMA
A study of drama in England—exclusive of Shakespeare—from the 14th century to the closing of the theaters in 1642. The course examines the development of drama from religiously oriented plays to complex and professional works during the reigns of Queen Elizabeth and King James. Attention is given to the continuing cultural unease with actors during this time. Works and authors may include The Second Shepherd’s Play, Everyman, Greene, Heywood, Marlowe, Jonson, and Webster. Satisfies one pre-1800 literature requirement for the English major. 3 semester hours

ENGL 340 AUTHOR STUDY (PRE-1800)
An in-depth study of the career of a single author or the careers of a small group of authors, writing prior to 1800, with emphasis on selected works and their literary, political, social, and biographical contexts. 3 semester hours

ENGL 345 MILTON (FORMERLY 17TH-CENTURY LITERATURE)
An in-depth study of Milton’s Paradise Lost, emphasizing close reading of the poem and critical thinking about such topics as the problem of evil, free will, divine retribution, titanic aspiration, women’s rights, human sexuality, and Christian ethics. The course considers the poem in its literary, historical, and religious contexts with special attention given to Milton’s reworking of epic conventions and Biblical material and to its reception in the centuries following its publication. Satisfies one pre-1800 literature requirement for the English major. 3 semester hours

ENGL 346 SATIRE AND SENSIBILITY (FORMERLY NEOCLASSICISM AND SENSIBILITY)
A study of British literature from the Restoration of the monarchy in 1660 through the 18th century, with particular emphasis on the works of Pope and Swift as well as on the various genres and modes of the period, including Restoration comedy, satire, the periodical essay, the rise of the novel, Neoclassicism, and sensibility. Other authors may include Dryden, Behn, Congreve, Defoe, Johnson, Wollstonecraft, and Austen. Satisfies one pre-1800 literature requirement for the English major. 3 semester hours

ENGL 347 BRITISH ROMANTICISM
A study of the poetry and prose of the period with particular emphasis on the work of Wordsworth, Coleridge, Byron, Shelley, and Keats—famous writers of the period. The aesthetic concept of Romanticism is explored in its literary and historical context with critical attention also given to certain writers, texts, and genres of the period that challenge the traditional view of the Romantic literature. Satisfies either pre- or post-1800 literature requirement for the English major. 3 semester hours

ENGL 356 VICTORIAN LITERATURE
A study of the poetry and prose of the period with particular emphasis on the work of Tennyson, Browning, Arnold, and Carlyle; the literature is discussed against the background of the political, scientific, social, and religious thought of the 19th century. Satisfies one pre-1800 literature requirement for the English major. 3 semester hours

ENGL 357 THE BRITISH NOVEL
A study of the rise of the novel in Great Britain from the 18th century to the 20th century, considering the change in the novel’s cultural status during this time and its increasing popularity and social relevance. The course takes various critical approaches to novels by such authors as Burney, Austen, the Brontës, Gaskell, Dickens, George Eliot, Hardy, and others. Satisfies either pre- or post-1800 literature requirement for the English major. 3 semester hours

ENGL 359 DICKEYS
This course examines the career of British novelist Charles Dickens, with emphasis on selected novels as popular and literary culture. Dickens’ achievement is studied in terms of the elements of fiction; the Victorian literary marketplace and its audience; the conditions of serial authorship; the generic expectations for fiction as art and as entertainment; the literary, political, social, and biographical contexts of Dickens’ books; and the continuing appeal of his novels today. Satisfies one post-1800 literature requirement for the English major. 3 semester hours

ENGL 360 BRITISH LITERATURE: 1890–1945
This course examines major literary movements and authors from 1890 through World War II. Students consider the impact of Modernism and its transformation through the period. Writers studied include Hardy, Wells, Ford, Joyce, Woolf, Rhys, and Green.
ENGL 361  BRITISH LITERATURE: 1945 TO PRESENT
This course examines British literature after World War II. Writers and texts are considered in light of the changing place of England in the world and the economic and social transformation of Britain. Authors studied include Beckett, Amis, Murdoch, Burgess, Winterson, and Ishiguro. Satisfies one post-1800 literature requirement for the English major. 3 semester hours

ENGL 362  20TH-CENTURY BRITISH DRAMA
A study of modern British drama in its various modes (realistic, comic, experimental). The course examines concepts of performance and staging and looks at the plays within their social and historical contexts. Playwrights covered include Shaw, Synge, Coward, Osborne, Delaney, Beckett, Pinter, Stoppard, Churchill, and others. Satisfies one post-1800 requirement for the English major. 3 semester hours

ENGL 363  LITERATURE IN ENGLISH AFTER EMPIRE
Studies in literature written in English from Australia, New Zealand, Canada, the Indian subcontinent, Africa, and the Caribbean. Students consider the authors in light of ideas about identity and origin, as well as their historical and political contexts. Satisfies one post-1800 literature requirement for the English major. 3 semester hours

ENGL 365  THE AMERICAN NOVEL
An investigation of thematic and formal developments of the American novel from the early 19th century to the present. Writers may include Hawthorne, Melville, James, Twain, Cather, Faulkner, Hurston, Morrison, Erdich, and DeLillo. Satisfies one post-1800 literature requirement for the English major. 3 semester hours

ENGL 366  EARLY AMERICAN LITERATURE (FORMERLY AMERICAN LITERATURE OF THE COLONIAL AND EARLY FEDERAL PERIODS)
This course surveys the burgeoning American literary scene in the 17th and 18th centuries. Students consider within a historical context the moral, social, and aesthetic issues raised in the work of such representative writers as Bradstreet, Taylor, Edwards, Franklin, Jefferson, and Cooper. Satisfies one pre-1800 literature requirement for the English major. 3 semester hours

ENGL 367  AMERICAN ROMANTICISM
A study of the manifestations of Romanticism in the essays, novels, and poems of such 19th-century American writers as Haw-thorne, Poe, Thoreau, Emerson, Douglass, Melville, Whitman, and Dickinson. Satisfies one post-1800 literature requirement for the English major. 3 semester hours

ENGL 368  AMERICAN REALISM AND NATURALISM (FORMERLY REALISM AND NATURALISM IN AMERICAN LETTERS)
A study of prose and poetry by late 19th- and early 20th-century American writers from Rebecca Harding Davis to Theodore Dreiser, including such major figures as Twain, James, Crane, Chesnutt, Wharton, Chopin, Frost, and Robinson. Some attention is given to European influences and parallel developments in the other arts. Satisfies one post-1800 literature requirement for the English major. 3 semester hours

ENGL 369  AFRICAN AMERICAN LITERATURE
This course explores the African American literary tradition from its beginnings in the 18th century to the present day. Students cover a variety of genres, periods, and topics, including the slave narrative, local color and regionalist fiction, the Harlem Renaissance, and the Black Arts movement. Along the way, they consider recurring aesthetic and political questions that continue to shape African American writing. Representative writers include Frederick Douglass, Phillis Wheatley, Langston Hughes, Zora Neale Hurston, Richard Wright, and Toni Morrison. 3 semester hours

ENGL 374  AMERICAN POETRY: POST WORLD WAR II
Students examine significant figures and movements in American poetry written after 1945, including work from the Fugitives, the Beats, the Black Mountain School, African-American writers, the New York School, and others. Writers covered include Robert Creeley, Rita Dove, Denise Levertov, Allen Ginsberg, Frank O’Hara, and Adrienne Rich. The course provides a strong introduction to developments in American poetry over the last 50 years. Satisfies one post-1800 literature requirement for the English major. 3 semester hours

ENGL 375  MODERN AMERICAN LITERATURE
A study of the eclectic manifestations, literary and philosophical, in American letters from 1914 to the present. Writers studied range from O’Neill, Hemingway, and Eliot to Plath, Baldwin, and Ginsberg. Satisfies one post-1800 literature requirement for the English major. 3 semester hours

ENGL 380  AUTHOR STUDY (POST-1800)
An in-depth study of the career of a single author, or the careers of a small group of authors, writing after 1800, with emphasis on selected works and their literary, political, social, and biographical contexts. 3 semester hours

ENGL 405  WRITING PRAXIS
Students work six to eight hours a week in communications offices (advertising agency, newspaper, radio, television, etc.) to acquire practical experience under supervision of professionals in the field; students attend a seminar once a week to exchange expertise, and write a final report on their experiences. Students should consult with the instructor before the beginning of the semester. 3 semester hours

ENGL 409  SENIOR SEMINAR
The required capstone course for English majors. Students conduct advanced study of a literary subject selected by the instructor and complete a pertinent scholarly project for written and oral presentation. Offered in the fall semester only. Prerequisite: A grade of C or better in ENGL 301 and at least three 300-level literature courses. 3 semester hours

ENGL 499  INDEPENDENT STUDY
Independent English study and research: individual investigation of a problem in literature or a closely related topic may be arranged by a student and professor. May be taken no more than once as part of the English major. A cumulative grade-point average of 3.25 is required. 3 semester hours

ENGL 488, 588  SPECIAL TOPICS IN ENGLISH
Topics offered in response to student and faculty interest. 3 semester hours each

ENVIRONMENTAL SCIENCE

ENVR 100  INTRODUCTION TO ENVIRONMENTAL SCIENCE
This course is designed for nonmajors in science who are interested in the environment and environmental issues. Topics include an overview of humans and nature (environmental problems and their causes), principles and concepts (matter and energy, ecosystems, risk, toxicology, human health), resources and wastes, biodiversity, and living sustainably. Prerequisite: None. 3 lecture hours weekly. 3 semester hours

ENVR 104  EARTH PROCESSES AS NATURAL DISASTERS
This course is a survey of Earth's surface processes that have a direct impact, often violently and without warning, on our global society. Information presented in this course integrates the principles of geology, meteorology, climatology, oceanography, and ecology and explores the many ways humans leave themselves susceptible to hazards driven by Earth's dynamic geologic and atmospheric processes. A series of case studies will be presented to students that outline each topic area covered. These include the broad topic areas of earthquakes, volcanoes, flooding, mass wasting, coastal hazards, subsidence, severe weather, mass extinction, wildfires, and global climate change. Designed for a general audience, this course is open to all students who have a natural curiosity about events that often control our global existence. No prerequisites. 3 semester hours
ENVR 120  ENVIRONMENTAL AWARENESS AND ACTION IN THE 21ST CENTURY
This environmental science course is designed for nonscience majors who want more hands-on experience with environmental issues that are affecting their communities. Topics may include water supplies and pollution, soil conservation, energy consumption, human population growth and distribution, land-use planning, and exotic species. Discussions focus on ways students can contribute to more sustainable communities, both here at Widener and at home, through citizen participation in activities addressing these problems. Laboratories are mostly group-oriented projects that coincide with lecture material. Each student researches an issue of her or his choosing that is pertinent to the community in which she or he resides and gives a presentation to the class. 3 hours lecture. 3 hours laboratory. 4 semester hours

ENVR 200  PRINCIPLES OF ENVIRONMENTAL SCIENCE (SAME AS ESSC 200)
This course provides an intensive examination of the fundamental principles that govern and shape our environment. While designed primarily as an introduction to the field of environmental science for science majors, this course is intended for all students who want to learn about environmental issues and problems. Topics include ecosystems, human populations, geologic processes, atmospheric and hydrologic systems, pollution, energy resources, urbanization, and environmental history and ethics. ENVR majors must also register for ENVR 210. This course is not open to students who have taken ENVR 100. Three hours lecture. Prerequisite: none. 3 semester hours

ENVR 201  ENVIRONMENTAL GEOLOGY (SAME AS ESSC 201)
This course details treatment of the structure of the Earth’s crust, its igneous, sedimentary and metamorphic rocks, their kinds, origin, and importance. This course covers such topics as erosion processes, mountain building, development of continents and land forms, vulcanism, earthquakes, glaciation—a survey of the geological past. Lab includes studies of rocks, minerals, fossils, geologic, and topographical maps, aerial photographs, and local field work. Three hours lecture, three hours laboratory. 4 semester hours

ENVR 204  THE EARTH SYSTEM (HONORS)
This course investigates the interchange between the various components that comprise the Earth system: the solid Earth, the atmosphere, the oceans, and living organisms. Discussions involve timely environmental problems such as global warming, ozone depletion, and loss of biodiversity, and how these problems have analogues from Earth history. Open to students in the Honors Program and to science majors with permission of the instructor. No prerequisites. 3 hours lecture. 3 semester hours

ENVR 207  OCEANOGRAPHY (SAME AS ESSC 207)
This course introduces the physical and biological nature of the oceans: their topography and circulation, chemical composition, physical and chemical characteristics of marine habitats, relationship to geologic, geographic, and economic problems. Quantitative chemical and physical methods employed in the laboratory include processing oceanographic data. Field trips are required. 3 hours lecture. 3 hours laboratory. 4 semester hours

ENVR 208  ASTRONOMY AND ASTROPHYSICS (SAME AS ESSC 208 AND PHYS 208)
This course provides a calculus-based introduction to astronomy and astrophysics for all science and engineering students, including qualified freshmen. Topics include celestial mechanics, planets and the solar system, the Sun and energy generation, electromagnetic radiation, optics, stars and stellar evolution, the Milky Way and other galaxies, cosmology, and the start of the Universe. Evening observation sessions using the 16-inch telescope at the Widener Observatory are a required part of the course. Corequisite: MATH 131 or MATH 141. 3 hours lecture. 1 hour observing. 3 semester hours

ENVR 209  METEOROLOGY (SAME AS PHYS 209 AND ESSC 209)
This introductory course teaches an understanding of the Earth’s atmosphere, including the forces producing weather and climate, the dynamics of air movements, pressure changes, mass density, volume relationships, as applied to the changing atmosphere, and the production of hurricanes, tornadoes, and thunderstorms. Also studied are atmospheric structure, the effects produced by solar radiation on the Earth’s magnetic field—auroras, Van Allen belts, and similar phenomena. Meteorological instrumentation is studied in laboratory experiments designed to integrate theory with practice, together with the production of weather maps by students from empirical data recorded in the laboratory. This course is designed primarily for students majoring in science or engineering. 3 hours lecture. 2 hours laboratory. 4 semester hours

ENVR 210  INVESTIGATING ENVIRONMENTAL SCIENCE
This is a laboratory course designed to complement ENVR 200. Lab inquiry activities will include topics in experimental ecology in model ecosystems, ecosystem modeling, and environmental assessment/environmental quality. There will be weekly assignments and/or projects for each topic, and a final exam. Meets three hours weekly. Corequisites: BIOL 161, 162, CHEM 145–148, ENVR 200. 1 semester hour

ENVR 220  MARINE GEOLOGY (SAME AS ESSC 220)
A study of the sediments, rocks, structure, geophysics, microfossils, stratigraphy and history of the ocean basins and their margins. Lab includes field work. 6 hours weekly. 3 hours lecture. 3 hours laboratory/field. 4 semester hours

ENVR 250  ENVIRONMENTAL CHALLENGES AND CURRENT SOLUTIONS (HONORS)
This honors course is intended for students who are concerned about the problems facing our planet’s environment today. It provides a background for the most serious environmental challenges facing Earth’s inhabitants, both human and non-human, what possible solutions are currently available, and what preventative measures can be taken to mitigate or prevent future disasters. Sessions are run in part lecture, part seminar format, and use current information available in print, in video format, and on the World Wide Web. Topics include the causes and effects of environmental crises in recorded history, and topics of global and regional concern such as deforestation and biodiversity loss, air and water pollution, acid precipitation, global warming, destruction of stratospheric ozone, and solar energy and alternative fuels. This course is open only to students in the Honors Program, and does not fulfill the ENVR technical elective requirement or the CHEM science elective. No prerequisites. 3 hours lecture. 3 semester hours

ENVR 261  GEOGRAPHIC INFORMATION SYSTEMS
This course provides a skill that is cross-disciplinary and applicable to the interpretation of any data that has a spatial relationship. Of particular interest are environmental data sets that are collected within a geographic context. The lecture portion of the class introduces the basic principles of using and interpreting data within a computerized Geographic Information System (GIS). Topics of spatial data analysis are introduced as a way to showcase the extended data analysis capabilities of a GIS. This course provides students with a broad framework upon which to access and assess geographic information for the purpose of better understanding spatial relationships. The lab component of the course integrates lecture material into a GIS assessment. An important component of the lab is the collection of digital data using global positioning system (GPS) equipment and uploading the data to the GIS system. Students are required to develop and demonstrate a working knowledge of the GPS/GIS techniques through an independent research project that they will present orally to the class. Students are required to submit a final written project report. Open to all students across disciplines. No prerequisites. 3 hours lecture. 3 hours laboratory. 4 semester hours

ENVR 299  RESEARCH METHODS AND ANALYSIS (SAME AS BIOL 299)
This course is designed to provide students with sufficient theoretical and practical knowledge to plan, conduct, evaluate, and present faculty directed original research. Topics include the historical and philosophical development of scientific research, introduction to the scientific method, writing a research proposal, selection of research
arena, qualitative and quantitative observations, sampling techniques, collecting, recording, summarizing, statistically analyzing, and graphically presenting data, bibliographic searching techniques, oral presentation of research, and writing a research paper. Prerequisite: Sophomore standing in a science major and MATH 131/141 or permission of the instructor. 2 hours lecture. 3 hours laboratory. 3 semester hours

ENVR 300 GEOLOGY FOR ENGINEERS
Principles of physical geology designed to illustrate the interactions between geology and engineering. Topics to include minerals, rocks, forces and processes acting on Earth, crustal structure, problems associated with shorelines, groundwater, earthquakes, land subsidence. Prerequisite: Junior standing. 3 semester hours

ENVR 301 INTRODUCTORY ECOLOGY
(SAME AS BIOL 301)
This course teaches ecological and environmental literacy. Participants will understand (1) the physical, biological, and evolutionary processes that determine ecosystem structure and function, and (2) the process of ecological inquiry which is the scientific method, through which natural phenomena are observed, interpreted, and reported. This course also teaches how to read global environmental signposts (climate changes, ozone depletion, and biodiversity loss), recognize our role in causing these trends, and evaluate the courses of action, in terms of our consumer and disposition decisions, we all must take to sustain ourselves. Three hours of lecture, three hours of lab, and field work. Prerequisite: BIOL 161, 162. 4 semester hours

ENVR 303 ENVIRONMENTAL ANALYSIS
This course teaches students the theory and application of environmental sampling and analysis techniques. The course introduces students to the instrumentation and techniques used to assess air, water, and soil quality. Lecture focuses on sampling, statistics, the operational theory of different measurement techniques, and the relevant chemical reactions. In the laboratory, students apply this to the quantification and identification of various environmentally significant compounds. Two hours lecture, six hours laboratory weekly. Prerequisite: CHEM 255, MATH 142 or 133, and BIOL 299. Corequisite: PHYS 232. 4 semester hours

ENVR 304 ENVIRONMENTAL POLLUTION
A critical examination of the integral processes that affect Earth's atmosphere, hydrosphere, and lithosphere with regard to man's activities. Topics addressed include chemistry of the atmosphere, soil, and water chemistry, waste disposal and treatment, regulatory strategies for air, water, and soil pollution abatement, principles of wastewater treatment, solid and hazardous waste management, thermal pollution, and mining and reclamation. Three hours lecture, three hours laboratory weekly. Prerequisite: ENVR 303 and CHEM 255. 4 semester hours

ENVR 309 EARTH'S CHANGING ATMOSPHERE AND CLIMATE
This course provides an in-depth investigation into the major causes of atmospheric and climatic change and their effects on Earth's biosphere. Special emphasis is placed on natural geological factors such as volcanic eruptions and also on astronomical factors such as intrinsic changes in the luminosity of the Sun, variations in the eccentricity of Earth's orbit and the inclination of its axis, and impacts of large bodies from space. Topics covered will include atmospheric radiation budget and circulation, ice core records, climate history of ancient Earth, sunspot cycles, Milankovitch theory, climate change and major extinction events, and short-term and long-term global climate changes. Sessions are run in part lecture, part seminar format, and will require students to perform research on the World Wide Web. Students also solve problems relating the concepts presented in the lecture topics. Three hours lecture. Open only to science majors and minors with junior standing or above. 3 semester hours

ENVR 312 ATMOSPHERIC PHYSICS
(SAME AS PHYS 312)
This course provides a mathematically rigorous investigation into the science of meteorology. Graphical analyses and calculus-based numerical problems are used throughout. Topics include radiation principles, heat, boundary layers, moisture, stability, cloud formation, precipitation, atmospheric dynamics, global circulation, air masses, fronts, cyclones, numerical weather prediction, thunderstorms, air pollution, and climate change. ENVR 209 is a prerequisite for environmental science majors, and is recommended to be taken concurrently for physics majors. Corequisite: PHYS 162 or PHYS 252. 3 semester hours

ENVR 317 ANGIOSPERM TAXONOMY
(SAME AS BIOL 317)
An introductory study of the classification, nomenclature, and identification of 30–40 common families of flowering plants, with particular emphasis on the local native flora and nearby areas. Field trips and a plant collection are required. 3 hours lecture. 3 hours laboratory/field trips. 4 semester hours

ENVR 332 ENVIRONMENTAL CHEMISTRY
(SAME AS CHEM 332)
This course deals with the study of the sources, reactions, transport, effects, and fates of chemical species in the air, soil, and water environments; and the effect of human activity on these. Emphasis is placed on thermodynamics and kinetics of reaction cycles, and on quantitation of chemical species. Prerequisite: CHEM 255, 257. 3 semester hours

ENVR 340 TROPICAL ECOLOGY (SAME AS BIOL 340)
This course examines the nature, evolution, structural and functional components, and relationships that exist within tropical forests worldwide. A broad range of topics covering the physical, biological, and chemical aspects of tropical environments are explored. Specific topics include forest succession and architecture, tropical microclimate, vertical organization of canopy biota, evolution of tropical plants, tropical parasites, decomposition and nutrient cycling, plant/animal coevolutionary interactions, survival strategies, and the evolutionary history of tropical forests. This course is open to upper division biology and environmental science majors. Prerequisites: BIOL 161, 162. 3 hours lecture. 3 semester hours

ENVR 342 TROPICAL ECOLOGY LABORATORY
(SAME AS BIOL 342)
This laboratory course is the field component of BIOL/ENVR 340. Students design and carry out a research project that is completed during a one-week fieldtrip experience in a tropical forest environment. Students develop a research question and conduct an extensive literature search on a topic pertaining to tropical ecology prior to traveling to the research site. Students work closely with the instructor(s) to ensure that they are able to complete a project during the week-long field experience. After the project has been completed, students are responsible for analyzing and writing their results as if they intend to submit their research to a journal for publication. Students present their findings to the Widener community or at a regional or national meeting. This course is open to upper-division biology and environmental science students. Upper-division students from other majors within the sciences may be allowed to enroll with the permission of the instructor. Prerequisites: BIOL 161, 162. Corequisite: BIOL/ENVR 340. A total of 35 hours prior to the field experience and 45 hours in the field. 2 semester hours

ENVR 401 PHYSIOLOGICAL ECOLOGY OF EXTREME ENVIRONMENTS: LIFE AT THE EDGE (SAME AS BIOL 401)
This course focuses on the evolutionary adaptation of physiology to the problems posed by the biophysical extremes of this world including warm deserts, arctic and alpine environments, freshwater and saline wetlands, deep sea environments, and human-disturbed environments. Although the topics represent the extremes of this world, an important message is that all environments are variable and the rules at the extremes apply everywhere—life is always at the edge. The course includes a project-oriented lab that uses methods available to teach the processes of physiological inquiry described in this course. Two hours lecture and six hours lab. Prerequisite: Introductory Biology (BIOL 161, 162), and either Ecology (BIOL/ENVR 301) or instructor's permission. 4 semester hours
ENVR 412  SENIOR THESIS PROPOSAL IN ENVIRONMENTAL SCIENCE
This course involves generating a research proposal with an extensive literature review in the area of environmental science. Prerequisite: ENVR 399. 1 semester hour

ENVR 413, 414  SENIOR THESIS IN ENVIRONMENTAL SCIENCE I & II
The Senior Thesis in Environmental Science provides an opportunity for students to participate in independent, investigative research under the direction of select faculty mentors. Prerequisite: ENVR 412. 2 semester hours each

ENVR 419  APPLIED AND ENVIRONMENTAL MICROBIOLOGY (SAME AS BIOL 419)
A lecture and laboratory course in microbial ecology and applied microbiology. The role of microorganisms in the environment is studied with emphasis on their roles in the biogeochemical cycles of the elements essential for life. Applied topics such as the microbiology of foods, fermentations, antibiotics, and other industrial processes are discussed. The application of microbial systems to molecular genetics research is also discussed including laboratory exercises in recombinant DNA techniques. Six hours weekly. Prerequisite: BIOL 319 or equivalent. 2 hours lecture, 4 hours laboratory. 4 semester hours

ENVR 490  ENVIRONMENTAL SCIENCE INTERNSHIP
This subject-related work experience or other activity is offered only upon special application from the student and a supervising faculty member. Approval must be obtained in advance from the environmental science faculty and requires a specific outline of work to be done; the nature and extent of its academic relevance; the academic and special preparation of the student for the proposed activity. Written approval must be obtained from the employer/sponsor, and arrangements must be made for regular contact between the student and the supervising faculty member. The student is responsible for making all arrangements. A final report must be submitted upon completion of the activity, and a pass/fail grade will be assigned. The number of semester hours earned will depend on the extent of the approved activity (12 semester hours corresponds to full-time work for a semester). Prerequisite: Junior or senior standing, a GPA of at least 2.5 both in the major and cumulative in all courses, and approval of both the academic advisor of the student and the head of the Science Division. 3–12 semester hours

ENVR 499  INDEPENDENT STUDY
Individual investigation of a problem in environmental (earth and space) science. Lab work, computations, readings and orals as appropriate. Scope, topic, and prerequisites are arranged individually. 1–4 semester hours

ENVR 188, 288, 388, 488, 588 SPECIAL TOPICS IN ENVIRONMENTAL SCIENCE
Topics offered in response to student and faculty interest. 3 semester hours each

FINANCE
All 300- and 400-level finance courses require at least junior standing.

FIN 303  FINANCIAL MANAGEMENT
A fundamental introduction to the theory and practice of financial management in the business firm is offered including financial planning and control, valuation and financial structure, cash flows, economic and financial optimization, cost of capital, capital budgeting decisions, short- and long-term financing, and valuation processes in mergers liquidation and reorganization. Prerequisites: ACCT 205 and junior standing. 3 semester hours

FIN 305  INVESTMENTS
Survey of the problems and procedures of investment management, including types of risk, timing, selection, basic determinants of investment values as applied to specific companies and industries. Emphasis on fundamental and technical analysis, sources of information, and the efficient markets concept. Prerequisite: FIN 303. 3 semester hours

FIN 307  CAPITAL BUDGETING
The objective of this course is to conduct an in-depth study of the capital budgeting process, including evaluation of projects under various risk conditions, buy/lease decision making, and capital budgeting for the multinational firm. Emphasis will be placed on bringing together the theory, quantitative methods, and application of capital budgeting techniques. Prerequisite: FIN 303. 3 semester hours

FIN 320  RISK MANAGEMENT AND INSURANCE
A study of the concept of risk and its treatment by insurance. The principal types of insurance are studied and concepts of risk management are introduced for business and personal uses. Prerequisite: FIN 303. 3 semester hours

FIN 406  PORTFOLIO THEORY AND MANAGEMENT
Examination of modern concepts relating to management of security portfolios. Students research and evaluate investment opportunities, and participate in the investment decisions. Topics include security analysis, Markowitz Portfolio Theory, risk and portfolio construction, and portfolio performance measurement. Students invest funds provided by Grace and John Sevier Investment Portfolio Fund in a balanced portfolio. Prerequisite: FIN 303. 3 semester hours

FIN 408  INVESTING IN MUTUAL FUNDS
This course provides an in-depth analysis of investment opportunities in mutual funds. It presents a clear understanding of the basic concepts and terms, as well as the complexities of evaluating mutual funds. In addition, topics include the structure and working of a typical fund, what a fund’s total return actually means, the role of various entities (e.g., fund manager, custodian, distributor) in operating a fund, fees and expenses associated with investing in funds, services available to shareholders, and performance measurements to be examined and compared before investing. This course would enable students to understand the tools necessary to select a mutual fund that will—given the investment objective, risk tolerance, and time horizon—be the top performer in its group or sector. Prerequisite: FIN 303. 3 semester hours

FIN 423  INTERNATIONAL FINANCIAL MANAGEMENT
Study of the concepts and principles of international financial management. The course covers in detail the current financial practices, tools, and theories of multinational business finance. Prerequisite: FIN 303. 3 semester hours

FIN 498  FINANCE INTERNSHIP
This is a course developed for the Finance Option to provide opportunities to obtain practical experience by applying their knowledge gained through the classwork in an actual business environment. Students work on projects developed with industry partners and prepare reports on these experiences with their academic and industry supervisors. Prerequisite: Junior or senior standing. NOTE: This course can only be taken pass/fail as a free elective. 3 semester hours

FINE ARTS
See also courses listed under Art History, Art Studio, Dance, Music, and Theater

ARTS 101  INTRODUCTION TO FINE ARTS
This course examines the interdisciplinary nature of the arts and incorporates materials from disciplines within the fine arts—dance, music, theater, and visual arts. 3 semester hours

ARTS 111  INTRODUCTION TO ARTS MANAGEMENT
This course provides an introduction to the inner workings of nonprofit visual and performing arts organizations. Students examine the field of arts management; the social, economic, and political trends that shape arts organizations; professional opportunities in the field; working with artists; the multiple programming and administrative activities of arts organizations; marketing and audience development; and the use of new technologies. The course combines lectures and discussions with guest speakers, behind-the-scenes field trips to arts organizations, and student presentations and projects. 3 semester hours
ARTS 311 ADVANCED ARTS MANAGEMENT
This course focuses on current concerns and issues facing non-profit visual and performing arts organizations. Classes consist of discussions based on case studies and readings, presentations by arts professionals, visits to arts organizations in the region, and problem-solving to better understand the complex points of view that shape the arts industry today. Included are such topics as balancing the demand to develop audiences with the need to maintain excellence in programming; issues pertaining to financial stability, fundraising initiatives and earned income sources; controversial programming and its public relations implications; staff and board responsibilities and relationships; diversification of personnel and programming; and managing capital campaigns and designing new facilities. Prerequisite: ARTS 111 or permission of instructor. 3 semester hours

ARTS 405 ARTS PRAXIS
This course is an independent experiential learning project in arts organizations. Students support a variety of nonprofit arts organizations, where they are involved in meaningful projects and ongoing operations and learn the organizational structure and operations of the host agency. Students are not paid for the services they provide to the partner organization. Off-campus assignments are combined with in-class discussions and reflection. In addition to written assignments, students may be required to present their individual projects in a public forum. May be repeated once. 3 semester hours

ARTS 409 SENIOR SEMINAR
Offered in fall semester only. 3 semester hours

FRENCH
See courses listed under Modern Languages.

FRESHMAN STUDIES

FRS 101 FRESHMAN SEMINAR
This course is designed to help first-year students make a successful transition to academic and extracurricular campus life at Widener. All Freshman Seminars share a common curriculum emphasizing the skills needed for academic success, as well as familiarity with campus resources, policies, and procedures. Along with the common curriculum, each individual seminar is organized around a topic reflecting the intellectual interests of the faculty leading them. Offered only in the fall semester. 2 contact hours per week. 1 semester hour

GERMAN
See courses listed under Modern Languages.

GOVERNMENT AND POLITICS

INTRODUCTORY COURSES

GP 101 AMERICAN GOVERNMENT AND POLITICS
An introduction to basic concepts, functions, and processes of politics and government, using the American system as a model. The course includes topics such as political socialization, constitutional government, legislative process, presidential leadership and bureaucracy, the role of the judiciary, political parties, interest groups, and problems of civil rights. There are no prerequisites. 3 semester hours

GP 102 FOREIGN GOVERNMENTS AND POLITICS
The principal goal of this introductory course is to provide students with a basic knowledge of how political systems around the world function. By examining a wide range of countries, students learn how and why the "rules of the political game" differ from country to country. It is hoped that, after taking this course, students will better understand political events that take place outside the United States and appreciate the diverse political ideas and aspirations of people around the world. There are no prerequisites. 3 semester hours

GP 204 CURRENT ISSUES IN WORLD AFFAIRS
( FORMERLY GP 104 )
This course introduces students to current issues in international relations. The course focuses primarily on such issues as relations between rich and poor nations, the race between food and population, energy, technology, and the threat to the environment. In addition, students may examine other issues in the headlines, such as terrorism, immigration, human rights, international trade, and the proliferation of chemical, nuclear, and biological weapons. The course hews rather closely to recent events. 3 semester hours

GP 221 INTRODUCTION TO INTERNATIONAL RELATIONS
An introduction to various approaches and methods of analysis in international relations. The course examines the nature of the international system, the manner in which states and other actors behave, the causes of war and techniques of conflict resolution, economic interactions, and the implications of growing international interdependence. The course also addresses socio-economic imbalances among nations. Sophomore standing required. There are no prerequisites. 3 semester hours

POLITICAL THEORY

GP 218 LAW AND SOCIETY
An analysis of the basic concepts related to the role of law in the polity including law as an instrument of dispute resolution, social control, and change. Also examined is the relationship of the individual to the state, and economic foundations of legal precepts and global perspectives. There are no prerequisites. 3 semester hours

GP 306 WESTERN POLITICAL THEORY
An in-depth survey of the major pre-20th-century thinkers who influenced Western political tradition, including Plato and Aristotle; Machiavelli; Hobbes, Locke and Rousseau; Hegel and Marx. A critical reading of the original texts promotes careful discussion of their historical contexts and relevance to contemporary issues. Students also administer the Democracy Project—a campus-wide undergraduate survey—and analyze its results. Required for majors. Prerequisite: GP 101 or 102, junior standing, or permission of instructor. 4 semester hours

GP 307 THEORIES OF INTERNATIONAL RELATIONS
As the study of international politics has emerged as a separate discipline, various contending theories have been developed to explain the nature of the international state system. Students in this course examine several of these theories and attempt to evaluate them. This course is intended for advanced students in government and politics. Prerequisite: GP 221. 3 semester hours

GP 308 AMERICAN POLITICAL THOUGHT
A study of the major themes underlying the American political system. Topics include the ideas of the Founders; religious and other freedoms; the evolution of legal and political thought; and the theory and practice of American government since World War II. Prerequisite: GP 101. 3 semester hours

AMERICAN GOVERNMENT

GP 205 AMERICAN PUBLIC POLICY AND POLITICS
This course surveys the formal and informal processes by which public policy is made and implemented at all levels of government in the United States. Topics include how issues get onto the public and governmental agendas, basic policy formulation processes in the executive and legislative branches, budgetary policies and practices, the role of courts in the policy process, implementation and administrative law, and informal factors affecting policy such as the economy, interest groups, the media, and technology. Prerequisite: GP 101. 3 semester hours

GP 206 ETHICS, POLITICS, AND POLICY
This course examines the intersection between ethics, elections, policymaking, and policy implementation in the American political system. Consideration is given to how ethical standards apply to election campaigns; executive, legislative, and judicial policymaking; and corruption of policy and administrative processes. Prerequisite: GP 101 or 102. 3 semester hours
GP 222 AMERICAN FOREIGN POLICY
This course begins with a description of American foreign policy from the earliest days of the Republic up to the present time. Students then consider the interacting roles of the leading policy makers, including the president, Congress, State Department, and CIA. The final portion of the course involves the tools of foreign policy, such as covert action, diplomacy, and economic assistance, as well as pressing foreign policy problems of the day. Sophomore standing required. 3 semester hours

GP 230 POLITICS AND THE MEDIA
A study of the role of mass media in the political system. The rights and responsibilities of the media in a free society are examined as are the effects of the media on elections, political attitudes, issues and decision-making. Case studies are used for analysis. Prerequisite: GP 101 or SOC 105 or COMS 130. 3 semester hours

GP 313 THE AMERICAN PRESIDENCY
Examines the institutional, behavioral, and societal forces that have given rise to the modern presidency, the factors that enhance and constrain the exercise of presidential power, the nature and consequences of the presidential decision-making process, together with the desirability and feasibility of reforming the presidency. Prerequisite: GP 101. 3 semester hours

GP 314 CONGRESS
An analysis of the United States Congress, including theories of representation, historical development of Congress, and the impact of the electoral process on Congressional behavior. Also studies the norms and expectations for Congressional behavior, the rules of the legislative process, the internal organization of Congress (committees, parties, staff) and the relations among Congress, the presidency, the bureaucracy, and the courts. Prerequisite: GP 101. 3 semester hours

GP 315 STATE AND LOCAL GOVERNMENT
An examination of political organization at the state and local levels and the effectiveness of governmental action in dealing with problems of community life. Attention is given to our rapidly expanding metropolitan regions. The course also includes an examination of the way in which these institutions are organized, how they jointly develop and carry out governmental programs, and current efforts to assure their responsiveness to the public. Prerequisite: GP 101. 3 semester hours

GP 316 AMERICAN POLITICAL PARTIES AND ELECTIONS
An examination of the characteristics of the American party system and how the individual can organize to use it, or other private groups, to influence elections and public policy. Prerequisite: GP 101. 3 semester hours

GP 317 THE PRESIDENCY AND CONGRESS
An examination of the presidency, Congress, and the administrative bureaucracy. The course includes an examination of the way in which these institutions are organized, how they jointly develop and carry out governmental programs, and current efforts to assure their responsiveness to the public. Prerequisite: GP 101. 3 semester hours

GP 318 THE JUDICIARY
This course is a study of judicial processes in the American political system. Topics include judicial decision making, organization of the court system, legal development and justice, and the relationship between law and social change. Prerequisite: GP 101 and junior standing or permission of instructor. 3 semester hours

GP 319 INTRODUCTION TO CONSTITUTIONAL LAW
This course introduces the student to the development of constitutions, constitutionalism, and judicial review as a way of granting, limiting, and dividing power within nations; studies briefly the evolution of the common law system as a way of developing constitutional precedents; examines specific cases dealing with judicial review, the scope of powers granted to the federal government, and the division of American governmental authority through federalism. Prerequisite: GP 101 and junior standing or permission of instructor. 3 semester hours

GP 320 CONSTITUTIONAL RIGHTS AND LIBERTIES
A study of the development of constitutional law relating to the rights of individuals and limitations on the power of government. The course will examine the way in which precedents develop, focusing on the Bill of Rights and other relevant portions of the Constitution. Prerequisite: GP 101 and junior standing or permission of instructor. 3 semester hours

GP 321 PUBLIC ADMINISTRATION
A study of the process of attaining governmental objectives through large organizations and the types of obstacles which must be overcome if public bureaucracies are to function effectively and responsibly. Recommended particularly for students contemplating public employment or seeking in-depth understanding of the American political system. Prerequisite: GP 101. 3 semester hours

INTERNATIONAL RELATIONS

GP 222 AMERICAN FOREIGN POLICY
This course begins with a description of American foreign policy from the earliest days of the Republic up to the present time. Students then consider the interacting roles of the leading policy makers, including the president, Congress, State Department, and CIA. The final portion of the course involves the tools of foreign policy, such as covert action, diplomacy, and economic assistance, as well as pressing foreign policy problems of the day. Sophomore standing required. 3 semester hours

GP 226 THE THIRD WORLD
This course examines politics in the developing countries of Latin America, Africa, and Asia. The focus is on the problems facing Third World countries in their quest for economic development and political stability. 3 semester hours

GP 228 POLITICS OF EUROPEAN INTEGRATION
This course is an exploration of the process of policymaking and integration in the European Union. Its aim is to increase students’ knowledge and understanding of the dynamics of European Union politics. Students examine why countries with historical animosities decide to work together; how economic, monetary, and labor relations are linked; and why average citizens of democratic countries sometimes oppose the institutions of which they belong. Students enrolled in this course are eligible to participate in the model European Union simulation. 3 semester hours

GP 235 LATIN AMERICA
The principal goal of this course is to provide students with a basic understanding of how the political systems of Latin America function. The course focuses on the evolution of those systems and analyzes how they have dealt with problems of socioeconomic development. 3 semester hours

GP 241 CHINA (SAME AS ANTH 241)
Traditional and modern China are compared. The treatment of Chinese culture includes consideration of religion and philosophy, social and political institutions, arts, and literature. The development of present-day political and economic systems are also covered, with emphasis on the Communist revolution. 3 semester hours

GP 242 JAPAN (SAME AS ANTH 242)
This course familiarizes students with contemporary Japanese culture, politics, economic structure, education, and religion. After a brief survey of Japanese history and traditions, the course focuses on Japan as a dynamic urban society which has both similarities and differences with other industrial societies. Topics include the family, national and local politics, Shinto and Buddhist religions, the national educational system, economic strategies, the salaried worker, yakuza (gangsters), the burakumin caste, mass media, women’s roles, the elderly, and Japan’s international role. 3 semester hours

GP 247 POST-SOViet POLITICS
This course examines the various political, economic, and social problems facing Russia and the 14 so-called Newly Independent States (NIS), which together formerly composed the Soviet Union. Topics addressed in detail include the transition and evolution of the Russian political system, the transformation of the Soviet command economy into a capitalist economy, the attendant rise of organized crime in Russia and the former Soviet Union, the war in Chechnya, and Russian foreign policy. In addition, students examine the post-Soviet developments in the Central Asian republics (the “Stans”), and their role in the war on terror. 3 semester hours
GP 250   VIETNAM
In this course Vietnam is explored through the mediums of films, books, and lectures with emphasis placed upon America’s involvement in Vietnam. While the course consists of a case study, the subject of Vietnam leads naturally to several issues of a more general nature. These issues include imperialism, colonialism, anti-colonialism, North-South relations, containment of communism, military strategy, and American politics. 3 semester hours

GP 330   CURRENT ISSUES IN DEMOCRATIC CONSOLIDATION
This course focuses in depth on the issues surrounding the concept of democratic consolidation and its application to transitioning states. Through the comparison of experiences in Eastern Europe, Southern Europe, and Latin America, students gain insights into the process that occurs during and after a transition from a nondemocratic to a (hopefully) democratic political system. Prerequisite: GP 102 or permission of instructor. 3 semester hours

GP 335   EASTERN EUROPEAN POLITICS AFTER COMMUNISM
This course provides students with an understanding and appreciation for the momentous changes that have taken place in Central and Eastern Europe since 1989. This is a part of the world often overlooked in international relations, yet it has played and will continue to play a significant role in European and international politics. This class investigates the ideas of ‘Eastern Europe,’ ‘Central Europe,’ and ‘Mitterleuropa.’ Where is Eastern Europe? How do we define it? How did this concept change over the course of the 20th century? Political and cultural changes since 1989 are examined and analyzed. Prerequisite: GP 102 or permission of instructor. 3 semester hours

GP 337   POLITICS IN THE MIDDLE EAST
An analysis of the Middle East (the Arabic-speaking countries, as well as Israel, Turkey, and Iran) and its role in world politics, focusing on the period since World War II. Attention is given to integrative and disintegrative forces within and among the Middle Eastern countries. Students also examine the Arab-Israeli impasse and the roots of terrorism in the Middle East. American relations with the Middle East are also stressed. Prerequisite: GP 102. 3 semester hours

GP 345   WAR AND PEACE
This course examines various facets of war and peace. Peace is treated here as more than the absence of war. Over the years, humankind has developed various tactics and strategies that sometimes succeed in promoting peace and cooperation among states. The course also explores the causes of war and examines some of the techniques to prevent war and keep the peace, such as deterrence and arms control, Wilsonian collective security, complex multilateralism and integration, negotiation and mediation, peace-keeping, peace enforcement, and peace building. Prerequisite: GP 204, 221, or 222. Sophomore standing required. 3 semester hours

GP 384   ARMS CONTROL
This seminar gives students an opportunity to write a research paper on one or more facets of arms control. The course covers the development of arms control and focuses on arms control efforts since World War II. Students also study current arms control initiatives, including START. Grades for the course are based primarily upon research papers. Prerequisites: Junior or senior standing plus GP 221 or GP 222. 3 semester hours

GP 385   STRATEGIC INTELLIGENCE
This course is designed to explain the nature of strategic intelligence, review the evolution of American intelligence, study the organizations that engage in American intelligence today, and consider the dangers of secret intelligence in a free society. In addition, the course examines the basic elements of intelligence: collection, analysis and estimates, counterintelligence, and covert action. Prerequisite: GP 221 or GP 222. 3 semester hours

SPECIAL TOPICS
GP 310   EMPIRICAL POLITICAL ANALYSIS
The main goal of this course is to provide students with the theoretical background and research skills for behavioral political analysis. Topics include research design, data collection, data analysis, computer techniques, and research applications. Lab-oration sessions provide further opportunities for research skills development. Students are required to take this course in the junior year. 4 semester hours

GP 390   INTERNSHIP
This subject-related work experience or other activity occupies the principal time of the student for one semester. Offered only upon special application from the student and a sponsoring faculty member. Approval must be obtained in advance from the social science faculty and requires a specific outline of work to be done; the nature and extent of its academic relevance; student academic and other preparations qualifying the individual for the proposed activity; and methods to be used in evaluating the quality of the work. Students enrolling must make arrangements for regular contact with supervising faculty members and may not engage in extraneous outside employment in excess of 10 hours per week. Junior or senior standing required and permission of the political science faculty. 12–15 semester hours

GP 394, 395   POLITICAL SCIENCE PRACTICUM
This is off-campus work experience of 6–8 hours per week with a governmental, quasi-governmental, or community service agency. Students work under the direct supervision of agency personnel, must keep a diary of their experiences, become familiar with the scholarly literature relevant to their placement activity and participate in weekly on-campus meetings. Each student also writes an end-of-semester paper about the experience, drawing on the diary record, the student’s overall impressions, and the concurrent readings. May be taken for one or two semesters, maximum credits: 6. Permission of instructor is required prior to registration. Open only to juniors and seniors, and not available to individuals who are student-teaching. 3–6 semester hours

GP 410/411   SENIOR RESEARCH SEMINAR
Preparation of the senior research paper in a specific field of government and politics. Required of all majors in government and politics. 6 semester hours

GP 499   INDEPENDENT STUDY
Individual study for a limited number of specially qualified advanced students in consultation with a member of the political science faculty. Admission to the course is at the discretion of the faculty member who would be involved, and requires written permission of the faculty supervisor and the social science division head. 6 semester hours maximum credit

GP 188, 288, 388, 488   SPECIAL TOPICS IN POLITICAL SCIENCE
Investigation of special topics, preferably on an interdisciplinary basis. Offering depends upon faculty approval and student interest. 3 semester hours each

HISTORY

HIST 100   WESTERN CIVILIZATION I (ANCIENT WORLD–1300)
A study of select themes in historical development from ancient Egyptian and Mesopotamian civilizations through Classical Greece and Rome, to the Later Middle Ages. A humanistic analysis of the traditional and popular elements in social behavior. 3 semester hours

HIST 101   WESTERN CIVILIZATION II (1300–1815)
A study of select themes in European history from the Later Middle Ages to Napoleon. Topics of special interest include the Renaissance, the Reformation, the Scientific Revolution, the Enlightenment, and the French Revolution. No prerequisite. 3 semester hours

HIST 102   WESTERN CIVILIZATION III (1815–PRESENT)
A study of select themes in European history from Napoleon to the present. Topics of special interest include the growth of industrialism, nationalism, socialism, and militarism. No prerequisite. 3 semester hours
HIST 104  WOMEN IN THE WESTERN TRADITION  
(SAME AS WS 104)  
This course examines Western society’s attitudes toward women and how these attitudes shaped women’s participation in the social, political, economic, and cultural development of the Western World from ancient times to the present. A special effort is made to utilize primary source material in the course readings. 3 semester hours

HIST 105  WIVES, WITCHES, AND WARRIORS  
(HONORS) (SAME AS WS 105)  
This course examines Western attitudes toward women from ancient to modern times. It focuses on three types of women: those who conformed to societal expectations (wives), those who resisted those expectations (witches), and those who consciously sought to change society’s attitudes about women’s roles and status (warriors). 3 semester hours

HIST 111  WORLD CIVILIZATION TO 1500  
This course provides a global perspective on the past before 1500. Beginning with the emergence of civilization, the course surveys the diffusion of civilization and the development of selected societies in regions such as Asia, the Middle East, and Africa. Attention is given to the major cultural, social, economic, and political experiences of the peoples in these areas. 3 semester hours

HIST 112  WORLD CIVILIZATION SINCE 1500  
This course provides a global perspective on the past since 1500. Building on the themes of “tradition” and “encounter,” the course examines the development of political, social, economic, and cultural experiences that have shaped the peoples of such regions as Asia, the Middle East, and Africa from the 16th century to the present. 3 semester hours

HIST 121  AMERICAN CIVILIZATION I  
American Civilization I surveys the history of the United States to 1877, with emphasis on how major economic, political, and social changes affected the lives and values of Americans. The focus is on how diverse peoples experienced and influenced the processes of colonization, nation-building, and sectional development. The class examines the kinds of evidence historians use to reconstruct the past and challenges students to think analytically about historical sources to learn how people made sense of and shaped American civilization. No prerequisite. 3 semester hours

HIST 122  AMERICAN CIVILIZATION II  
American Civilization II surveys the history of the United States from 1877 to the present, with emphasis on how major economic, political, and social changes affected the lives and values of Americans. The focus is on how the processes of industrialization, immigration, and urbanization transformed American life from a parochial, “homogeneous,” rural, and agricultural experience to an urban, industrial, multicultural nation in an increasingly interdependent world. The class examines the kinds of evidence that historians use to reconstruct the past and challenges students to think analytically about historical sources to learn how people made sense of and shaped modern American civilization. No prerequisite. 3 semester hours

HIST 310  TOPICS IN MEDIEVAL HISTORY  
The Western world from the decline of Rome to the age of discovery and exploration is examined. Special notice is taken of religious and intellectual developments: Byzantine and Saracenic civilizations; feudalism and the growth of feudal monarchy; the economic and cultural society of manor and town; the growth of trade and the political evolution of Western Europe. 3 semester hours

HIST 311  THE RENAISSANCE  
The literary, artistic, and intellectual achievements of the 14th and 15th centuries in the context of the economic, political, and social development of Western Europe. 3 semester hours

HIST 312  THE REFORMATION  
The origin and growth of Protestantism and the Catholic Reformation of the 16th century in the context of the economic, political, and social development of Western Europe. 3 semester hours

HIST 313  EUROPE IN THE 17TH AND 18TH CENTURIES  
An examination of the politics, society, and culture of early modern Europe. Topics of special interest include the crisis of 17th-century Europe, the establishment of absolutism, salient characteristics of the Age of Reason and Enlightenment, and the emergence of the 18th-century balance of power. 3 semester hours

HIST 314  THE INDUSTRIAL REVOLUTION IN EUROPE  
This course is a survey of the origins and spread of rapid sustained economic growth since 1750 with emphasis on the change from a commercial and agricultural to an industrial economy. 3 semester hours

HIST 315  CONTEMPORARY EUROPE  
This course is an interpretation of the far-flung events and movements of world history since the beginning of the First World War. 3 semester hours

HIST 321  WOMEN IN THE WORLD WARS  
This course examines the experiences of British, French, German, Russian, and American women on both the homefront and battlefront during the First and Second World Wars. Through a comparative study of women’s attitudes, their domestic and public activities, and government policies toward them, the course investigates women’s traditional and nontraditional wartime roles. It also considers the impact of the World Wars on attitudes toward women and on women’s opportunities and status in the immediate post-war years. Memoirs, diaries, and correspondence by women who worked in war industries, served in auxiliary military services, and fought on the front lines are among the primary sources students use to obtain evidence about women’s wartime experiences. 3 semester hours

HIST 325  FAMILY, SEX, AND DEATH: EUROPEAN SOCIAL HISTORY  
The course examines the forces that shaped life and thought from the late medieval era to the early 20th century. In addition to making students aware of the conditions of life that prevailed for the vast majority of Europeans, the course will expose students to the application of cultural and gender theory, as well as cultural anthropology and quantitative methods to the study of history. 3 semester hours

HIST 326  GENDER IN EUROPEAN HISTORY  
(SAME AS WS 326)  
The course focuses on the changing nature of male and female genders from the Renaissance to the present. The purpose of the course is to familiarize students with gender as an analytical category, distinguish it from sex, make students conscious of the variability of gender, and knowledgeable of the forces that have acted upon gender in the past. Students will explore the nature of men’s and women’s conditions, social status, and thought, as well as development of their political, social, and cultural powers from the 15th century to our day. 3 semester hours

HIST 327  OUTCASTS AND OTHERNESS IN LATE MEDIEVAL EUROPE, 1300–1600  
This course looks at ways in which late medieval Christian Europe attempted to enforce dominant social, religious, and sexual norms by defining standards of normalcy and punishing those who deviated from those standards. Students read and discuss historical monographs on witches, demons, heretics, sodomites, peasant visionaries, and other outcasts. Students also write papers that investigate historical and contemporary manifestations of otherness. 3 semester hours

HIST 328  THE FRENCH REVOLUTION AND NAPOLEON  
The course examines the causes, development, spread, and defeat of the Great French Revolution. The course will first familiarize the students with the politics of the Old Regime and Enlightenment political philosophy. They will also explore the development of constitutional monarchy, political and economic Liberalism, a democratic republic, and authoritarian government. The course will especially focus upon the relationship between social and political conflict and between foreign and domestic policy. Students will become familiar with Romantic Nationalist, Marxist, Social-Revisionist, and more recent interpretations of the Revolution. 3 semester hours
HIST 329  WORLD WAR AND MEMORY
The course examines the memory and commemoration of the two world wars, with an emphasis on European memories. Students will study the political, social, and cultural construction of both personal and national memories during and after the wars. We will read about and discuss the fierce debates regarding major political decisions, personal initiatives, the experience of war, and issues of personal and national guilt and responsibility for war crimes. 3 semester hours

HIST 330  TUDOR AND STUART ENGLAND
A close study of the emergence of the modern English state under the Tudors and of the struggle between monarch and subject for the control of the machinery of government during the time of the Stuarts. 3 semester hours

HIST 331  FRANCE IN THE BOURGEOIS CENTURY, 1799–1914
The course focuses on the history of France between the French Revolution and World War I, with a special emphasis on its political, social, intellectual, and cultural history. The purpose of the course is to explore French modernization. 3 semester hours

HIST 332  GERMANY SINCE 1871
The development of modern Germany with particular emphasis on the era of National Socialism, the democratic experiments after the Second World War, and the process of German reunification. 3 semester hours

HIST 333  NAZI GERMANY AND THE HOLOCAUST
An investigation of the origins and consequences of the Nazi regime, with particular attention to the planning and implementation of the Final Solution and the destruction of Europe’s Jews. 3 semester hours

HIST 334  RUSSIA IN THE 18TH AND 19TH CENTURIES
The political, economic, and social history of Russia from the reign of Peter the Great to the end of the 19th century. Among the topics examined are Russia’s territorial expansion, the growth of industrialization, the transformation of the nobility and the peasantry, and the emergence of the revolutionary movement. 3 semester hours

HIST 335  RUSSIA IN THE 20TH CENTURY
A survey of Russia from the reign of the last tsar, Nicholas II, to the present. Special attention is given to the political revolutions of 1905, 1917, and 1990–91 in the context of the economic and social modernization of a multinational state. Topics to be considered include the transformation of the peasantry, the expansion of industrialization, and the emergence of a civil society. 3 semester hours

HIST 336  RUSSIA’S HOLOCAUST:
LIFE AND DEATH IN STALIN’S TIME
This course provides students with a better understanding of Josef Stalin’s dictatorship (1929–1953), a period of unparalleled terror and mass repression in the USSR. It will examine Stalin’s personality and policies; the apparatus of terror and repression he employed to gain and maintain power; and the social, economic, political, and cultural consequences of Stalinism for its victims and for the future development of the USSR/Russia. 3 semester hours

HIST 343  EUROPEAN DIPLOMACY, 1871–1945
An examination of European diplomacy in the last quarter of the 19th century and first half of the 20th century, with special attention to the origins and consequences of World War I and World War II. This course focuses on Great Power diplomacy to examine in detail how the development of imperialism, nationalism, and militarism shaped international relations and eventually led the Great Powers into two cataclysmic and catastrophic conflicts. In this examination, attention is given not only to the role of governments, but also to the role of individual diplomats and public opinion in shaping Great Power policy and diplomatic strategies. 3 semester hours

HIST 344  EUROPEAN DIPLOMACY 1945–PRESENT
An examination of European diplomacy since the Second World War, with special attention to the causes, course, and consequences of the Cold War. This course focuses on relations among and between Eastern and Western European states in the period 1945–1989, as well as on the process of international realignment that followed the subsequent collapse of communism in Eastern Europe and the Soviet Union. 3 semester hours

HIST 351  HISTORY OF WOMEN IN AMERICA TO 1870
(SAME AS WS 351)
Explores the lives of women in America from the beginning of the colonial era to 1870, with a special emphasis on how race, class, region, and gender have affected women’s identities, relationships, and daily lives. Topics include religion, paid and unpaid labor, life cycles, friendships, family life, community, health and sexuality, the women’s rights movements, and the impact of the American Revolution and the Civil War. 3 semester hours

HIST 352  HISTORY OF WOMEN IN AMERICA
SINCE 1870 (SAME AS WS 352)
Explores the lives of women in America from 1870 to today, with special emphasis on how race, class, region, and gender have affected women’s identities, relationships, and daily lives. Topics include religion, paid and unpaid labor, prostitution, friendships, family life, community, health and sexuality, birth control, the women’s rights movement, and the impact of U.S. involvement in international wars. 3 semester hours

HIST 353  COLONIAL AMERICA TO 1760
An in-depth survey of political, cultural, social, and economic developments in America to 1760. Topics include Native American societies, founding the English colonies, the adoption of slavery, religious diversification, the consumer revolution, the French and Indian War, and changes in the family. 3 semester hours

HIST 354  REVOLUTIONARY AMERICA, 1760–1820
An in-depth survey of political, cultural, social, and economic developments in America from 1760 to 1820. Topics include the imperial crisis, religious and intellectual currents, changes in the family, the American Revolution and its impact, the Constitution, the rise of party politics, and life in the Early Republic. 3 semester hours

HIST 355  ANTEBELLUM AMERICA, 1820–1860
An in-depth survey of political, cultural, social, and economic developments in America from 1820 to 1860. Topics include the development of classes, party politics, slavery, changes in the family, western expansion, sectionalism, and the origins of the Civil War. 3 semester hours

HIST 356  AMERICA FROM CIVIL WAR TO WORLD STAGE, 1861–1914
An in-depth survey of political, cultural, social, and economic developments in America from 1861 to 1914. Topics include Civil War, Reconstruction, the Gilded Age, national growth and its impact on people of color, and Progressive Reform. 3 semester hours

HIST 357  AMERICA BETWEEN THE WARS, 1914–1945
An in-depth survey of political, cultural, social, and economic developments in America from 1914 to 1945. Topics include the decline of Progressivism, cultural conflict in the 1920s, the Great Depression and the New Deal, and the home front during World War II. 3 semester hours

HIST 358  RECENT AMERICA, 1945–PRESENT
An in-depth survey of political, cultural, social, and economic developments in America since 1945. Topics include the origins and development of the Cold War, McCarthyism, the rise of a counterculture, the civil rights movement, the Vietnam War, and recent ideological conflict between liberalism and conservatism. 3 semester hours

HIST 364  RACE, VIOLENCE, AND MEMORY (HONORS)
An investigation of selected episodes of violent racial conflict in American history, with particular emphasis on clashes between African Americans and white Americans. Students explore collective memory of the African slave trade, slave revolts, black military participation, lynchings, race riots, and violence during the civil rights movement. Sources include fiction, films, official records, oral histories, and historians’ accounts. The course culminates in an oral history project on the civil rights demonstrations in 1960s Chester, Pennsylvania. 3 semester hours
HIST 371  WOMEN AND WORK IN THE 20TH CENTURY
UNITED STATES (SAME AS WS 371)
From the Triangle Shirtwaist Company fire in 1911 to the “second shift” in the 1980s, this course examines experiences of working women and the nature of women’s work in the United States in the 20th century. How have societal expectations for women shaped their paid and unpaid labor? How have class, ethnicity, and race impacted definitions of and women’s experiences with work? Researching from both primary and secondary sources that describe a variety of work settings and occupations, students study the labor process and sexual division of labor, consider changes in the labor market and modes of managerial control, and debate the historical resilience of job segregation and the ideology of sex-typing. 3 semester hours

HIST 372  STUDIES IN AMERICAN IMMIGRATION HISTORY
A focused examination of key themes in American immigration history from colonial times to the present. Topics include push-pull factors in immigration, assimilation and cultural diversity, changing immigration patterns, the development of American immigration policy, and the impact of immigration in American history. This is a seminar-style course centered on discussion of required readings, in-class presentations, and written assignments. 3 semester hours

HIST 376  SLAVERY AND ABOLITION
This course examines the development of the slave system in the British colonies of North America and the United States along with efforts to abolish that system. The course places American slavery within a global-historical context and includes topics such as the varied experiences of slaves and slaveholders, slave revolts, slavery and American politics, the economics of slavery, radical abolitionism, and emancipation. 3 semester hours

HIST 377  STUDIES IN THE AMERICAN CIVIL WAR
A focused examination of the Civil War, from its origins to its immediate consequences. Social, cultural, political, economic, and military developments are emphasized. This is a seminar-style course, centered on required readings, in-class presentations, and written assignments. 3 semester hours

HIST 378  THE SEGREGATED SOUTH
This course explores life under the system of legal segregation that existed in the American South from the late 19th century to the passage of the Civil Rights Act in 1964. Topics addressed include the sharecropping system, disfranchisement, segregation, and lynching, as well as ways in which black southerners resisted these economic, political, legal, and extralegal obstacles to racial equality in this period. 3 semester hours

HIST 379  INDUSTRIAL AMERICA, 1850–1950
This course surveys the causes, dynamics, and consequences of America’s industrial growth and maturity from 1850 to 1950. Students read and discuss primary and secondary sources to explore the process of industrialization from economic, technological, political, and cultural aspects, as it transformed the nation’s social order and people’s everyday lives. 3 semester hours

HIST 380  U.S. LABOR AND LEISURE: HISTORY OF THE AMERICAN WORKING CLASSES
This course examines developments and important episodes in the history of the American working classes on the shop floor and beyond the factory’s gates from the 1820s through modern times. It surveys major themes and issues in U.S. labor history, including the rise of industrialization, formations of class and class consciousness, changes to labor markets and work processes, labor radicalism, unionization, and the impacts of gender, race, and ethnicity on working-class history. 3 semester hours

HIST 383  THE CIVIL RIGHTS MOVEMENT
This course contextualizes the movement for social justice and legal equality for African Americans that took place during the 1950s and 1960s within a much longer history of protest against racial injustice in the United States. It envisions the struggle for civil rights in America, even during the 1950s and 1960s, as not one movement but many, facilitated by a variety of individuals and groups that adhered to different goals, philosophies, and strategies in a collective quest for racial equality. Students examine the origins, achievements, and failures of the civil rights movement, as well as its legacy in our own time. 3 semester hours

HIST 392  CHINA IN THE MODERN WORLD
This course explores China’s often chaotic journey from empire to nation, and China’s ongoing work of being a nation in the modern world. The readings begin with the decline of China’s last dynasty and arrive at China’s hosting of the summer Olympics in 2008. China’s historic path into participation in the modern global and international system has been neither obvious nor inevitable. Over the course of the last century, China has undergone enormous changes, not just in terms of political regimes, but also of the cultural and social fabric and the changing values and identities of its citizens. Though the course is structured to follow chronologically through the major political changes China has faced during the 20th century, our emphasis is on the cultural and social changes affecting the lives of Chinese people and the intersection between state and society. 3 semester hours

HIST 395  CHINESE PRIVATE LIVES: BEYOND THE INNER CHAMBERS
Over the last decade, historians of China have made exciting discoveries and told compelling stories about the lives of ordinary Chinese who lived outside of the scope of more standard histories. This course gives students an opportunity to explore the ways in which changes in Chinese culture, ideals, identities, and regimes have affected the more intimate aspects of Chinese lives. This course introduces primary documents in translation and introduces students to some of the challenges historians of China face in locating, evaluating, and interpreting Chinese sources, exposing students to sources outside of the Western historical tradition. This course fulfills a requirement for history majors for coursework in non-Western world history. 3 semester hours

HIST 396  HUMAN RIGHTS IN CHINA: A HISTORICAL PERSPECTIVE
Although an international human rights regime has come into being since WWII, debates concerning cultural relativism versus universalism are far from settled. Is there a specifically Chinese approach to human rights? When have human rights been discussed in Chinese history? What has been the historical development of human rights concepts, concerns, and instruments in global history? Where, when, and how have concerns about human rights in China been raised, and with what historical outcomes? This course explores these and other questions by examining the global history of human rights; debates about cultural relativism and non-Western states; Chinese historical concepts and institutions that may or may not have supported human rights; and the historical development of particularly sensitive human rights issues that tend to draw international attention to China. 3 semester hours

HIST 401  RESEARCH METHODS
This course is designed to impart the basic skills needed to do historical research. It includes instruction in organizing and completing a research project; the nature, variety, uses, strengths, and weaknesses of primary and secondary sources; assessing the biases and reliability of source materials; use of traditional and computerized finding aids; synthesis and presentation of historical evidence; and citation and bibliography preparation. This course is intended for sophomores. A grade of C or better in this course is a prerequisite for HIST 409. 3 semester hours

HIST 405  HISTORY PRAXIS
Students work off-campus eight hours a week with an area museum, government archive, historical society, or similar organization to acquire practical experience under the supervision of professionals in the field. Students keep a journal of their activities and meet regularly on campus with the directing faculty member. Each student also writes a final paper discussing the experience and the relationship of the job to the history profession generally. Available only to history majors and minors with at least junior standing. 3 semester hours
HIST 409  SENIOR SEMINAR  
The required capstone for the history major, this course is designed to enable seniors to conduct independent research and produce a work of original scholarship for presentation orally and in writing. Prerequisite: A grade of C or better in HIST 401. 3 semester hours

HIST 499  INDEPENDENT STUDY  
Individual investigation of a problem in history. Reading, research, consultation, and discussion as required. Credit, scope, topic, and prerequisite to be arranged individually. May be taken no more than once. 3 semester hours

HIST 188, 288, 388, 488, 588  
SPECIAL TOPICS IN HISTORY  
Topics offered in response to student and faculty interest. 3 semester hours each

HONORS IN GENERAL EDUCATION

In addition to the following, other honors courses may be available. Contact the Honors Program Office for more information.

ANTH 306  GLOBALIZATION (HONORS)  
This honors seminar invites students to explore the many dimensions of what is being called “globalization,” the increasing interconnectedness of societies around the world primarily involving economic production and exchange, but extending beyond economics to cultural exchange and politics. The issue of globalization is analyzed from beyond just the anthropological perspective, and incorporates perspectives of history, technology, communication, philosophy, economics, politics, and literature. Its anthropological focus emphasizes the adoption of other societies’ cultural patterns, such as music and food, the expansion of supranational loyalties, and the instantaneous nature of world globalization. No prerequisite. 3 semester hours

CJ 185  CRIME AND JUSTICE IN AMERICA (HONORS)  
This honors course examines the processes of justice in America from an analytical perspective. Law Enforcement, adjudication and punishment systems are examined with an emphasis on the competing models of “due process” and “crime control,” and how such models are manifested in criminal justice practice. No prerequisite required. 3 credit hours.

EC 103  HONORS PRINCIPLES OF MACROECONOMICS  
This course is devoted to an introductory study of aggregate economic activity. Attention focuses on the aggregation concepts used to compute national product accounts, the rate of unemployment, and the consumer price index. Distinctions between actual and equilibrium values, as well as real and nominal measures are highlighted. A simple Keynesian equilibrium model and the aggregate demand/aggregate supply framework are developed and utilized to examine various fiscal and monetary policy options. This course substitutes for EC 201 on student transcripts. Students cannot receive credit for both EC 103 and EC 201. This course is restricted to university honors students. 3 semester hours

EC 104  HONORS PRINCIPLES OF MICROECONOMICS  
This course is an introductory study of the principles of microeconomic theory and how these principles are used in the analysis of current economic problems and issues. The underlying decision-making process at the household and firm level is explored. Topics include price theory and resource allocation under various market structures, the implications of externalities, and the reality of the global economy to the decision-making process. Emphasis is placed on class participation and the integration of principles through class applications. This course substitutes for EC 202 on student transcripts. Students cannot receive credit for both EC 104 and EC 202. This course is restricted to university honors students. 3 semester hours

ENGL 103  FRESHMAN HONORS ENGLISH  
Designed for students in the General Education Honors program, this course provides a challenging and unique experience in advanced exposition and literature. To enhance their reading, writing, and critical thinking skills, students study fiction, poetry, and drama and complete writing assignments pertaining to those literary forms. The course satisfies the ENGL 101/102 requirement in any major. All sections are writing enriched. 3 semester hours

ENVR 204  THE EARTH SYSTEM (HONORS)  
This course investigates the interplay between the various components that comprise the Earth system: the solid Earth, the atmosphere, the oceans, and living organisms. Discussions involve timely environmental problems such as global warming, ozone depletion, and loss of biodiversity, and how these problems have analogues from Earth history. Open to students in the Honors Program and to science majors with permission of the instructor. Three hours lecture. No prerequisites. 3 semester hours

ENVR 250  ENVIRONMENTAL CHALLENGES AND CURRENT SOLUTIONS (HONORS)  
This honors course is intended for students who are concerned about the problems facing our planet’s environment today. It provides a background for the most serious environmental challenges facing Earth’s inhabitants, both human and non-human, what possible solutions are currently available, and what preventative measures can be taken to mitigate or prevent future disasters. Sessions are run in part lecture, part seminar format, and use current information available in print, in video format, and on the World Wide Web. Topics include the causes and effects of environmental crises in recorded history, and topics of global and regional concern such as deforestation and biodiversity loss, air and water pollution, acid precipitation, global warming, destruction of stratospheric ozone, and solar energy and alternative fuels. This course is open only to students in the Honors Program, and does not fulfill the ENVR technical elective requirement or the CHEM science elective. Three hours lecture. No prerequisites. 3 semester hours

HIST 105  WIVES, WITCHES, AND WARRIORS (HONORS) (SAME AS WS 105)  
This course examines Western attitudes toward women from ancient to modern times. It focuses on three types of women: those who conformed to societal expectations (wives), those who resisted those expectations (witches), and those who consciously sought to change society’s attitudes about women’s roles and status (warriors). 3 semester hours

HIST 364  RACE, VIOLENCE, AND MEMORY (HONORS)  
An investigation of selected episodes of violent racial conflict in American history, with particular emphasis on clashes between African Americans and white Americans. Students explore the subjective memory of the African slave trade, slave revolts, black military participation, lynchings, race riots, and violence during the civil rights movement. Sources include fiction, films, official records, oral histories, and historians’ accounts. The course culminates in an oral history project on the civil rights demonstrations in 1960s Chester, Pennsylvania. 3 semester hours

HUM 341  HUMANITIES AND MEDICINE (HONORS) (FORMERLY HUM 340 [HONORS])  
By exploring medicine through the humanities, students can discover mirrors within societies that reflect the many faces of medicine. This course challenges students to widen their viewpoints on medicine, especially considering the dichotomous terms of life-death, health-illness, and provider-patient. Key activities include writing a formal research paper, leading a classroom discussion, and participating in special course activities (i.e., guest speakers, museum visits, and live performances). This course also requires students to participate in preparing, enacting, and critiquing a live dramatic performance related to the medical humanities. 3 semester hours

HUM 355  WORLD WAR AND CINEMA (HONORS)  
This course examines the post-war cinematic representation of the World Wars in many of the combatant nations, including France, Germany, Great Britain, Italy, Russia, and the United States. The course familiarizes students with the experience of these wars as well as the politics of national memory in order to facilitate contextual analysis. Students study both cinematic techniques and film theory and learn to apply these methods to the analysis of film. Collective and individual study of films expose significant shifts in the creation of each nation’s memories of world war. 3 semester hours
MUS 309  AMERICAN MUSIC: 1890–1980s (HONORS)
This honors course examines music in the United States from 1890 to the 1980s. Topics include music of the cultivated tradition, jazz, musicals, and various popular genres. 3 semester hours

MUS 391  20TH-CENTURY AMERICAN MUSICAL (HONORS)
The American musical is a distinctively American art form that took shape during the first half of the 20th century. Throughout the century, it developed and evolved, reflecting events and changes in American society and culture. This course considers selected American musicals through the lens of entertainment, identity, ethnicity, and genre. Using original literary texts as a point of departure, students examine the transformation of these works from play, novel, or short story to musical, and determine how music and lyrics serve, ignore, or contradict the dramatic themes and ideas. 3 semester hours

PHIL 116  PHILOSOPHICAL IDEAS (HONORS)
This introductory honors course offers readings in classical as well as modern sources. The emphasis is on social, political, ethical, epistemological, and metaphysical issues; the course includes consideration of questions raised by both oriental and Western systems. No prerequisite. 3 semester hours

PHIL 360  PHILOSOPHY OF SEX AND LOVE (HONORS)
This course provides an examination of philosophical issues relating to romantic love and human sexuality. Readings include philosophical and literary selections from a variety of intellectual perspectives, including contemporary feminist thought, Christian thought, Classical Greek thought, psychoanalytic perspectives, Marxist thought, and modern analytic thought. This course satisfies Humanities general education distribution requirements. 3 semester hours

PHIL 381  HONORS AESTHETICS
This honors course considers a range of classic aesthetic theories, and a number of central problems in aesthetics. Among the issues discussed are the definition of art, the nature of aesthetic value and evaluation, the relationship between art and morality, and questions of style and form. The major aesthetic theories discussed are Formalism, Mimetic theory, and Expressionism. Various works of art, including examples from poetry, film, music, architecture, painting, sculpture, and photography will be used in discussing these theories and problems. This course satisfies the distribution requirements for humanities. 3 semester hours

PHYS 135  THE PHYSICS OF LIGHT (HONORS)
A conceptual study of the physics of light. Using minimal mathematics, the course will follow the path that the physical understanding of light has followed, from Newton’s times to the present. Lab exercises are designed to observe and study the fascinating properties of light. For nonscience majors in the Honors Program. Three hours lecture, two hours laboratory. 4 semester hours

PHYS 136  COSMOLOGIES ANCIENT AND MODERN (HONORS)
This course investigates the evolution of humankind’s conception of the universe from ancient Greek times until the present. The ideas, theories, and discoveries of such renowned figures as Pythagoras, Aristotle, Aristarchus, Ptolemy, Copernicus, Kepler, Galileo, Mach, Newton, Hubble, and Einstein are examined and compared. While the emphasis of this course is on history, some scientific concepts such as gravity, general relativity, and the uncertainty principle are also discussed. Students observe some of the more prominent celestial objects with the physics department’s 8-inch reflecting telescope. For nonscience majors in the Honors Program. 3 semester hours

SCI 301  SCIENCE AS A WAY OF KNOWING: THE FOUNDATIONS OF MODERN BIOLOGY (HONORS)
We live in a time of rapid scientific change and environmental impact by human endeavors. Using life science as a focus, this course clarifies the logic underlying the scientific mode of inquiry and examines the development of our current understanding of evolution, genetics, and embryology (development) to provide a clear understanding of the power and limitations of science. The instructor introduces students to the seminar method of inquiry and exchange of ideas during the first few weeks. In consultation with the instructor, students work in groups to develop oral, written, and multimedia presentations for the class. Perspectives, ideas, and questions are synthesized during the final weeks of the course, and a compilation of each group’s work is circulated to all students. The course is designed for students who are majoring in disciplines other than the sciences. It is intended to satisfy general education requirements in science and the writing-enriched course requirement. Science majors may take the course only to satisfy a free elective requirement. 3 semester hours

HOSPITALITY MANAGEMENT

HM 101  INTRODUCTION TO THE HOSPITALITY INDUSTRY
A study of the business and career opportunities within the hospitality industry. The course begins with a look at the history and development of the industry and proceeds to current trends and characteristics of resorts, hotels, restaurants, and industrial feeding operations. Economic trends in travel and leisure are analyzed in terms of their significance to the hospitality industry. 3 semester hours

HM 102  LODGING SYSTEMS
A study of hotel management as it relates to the operation of a hotel front desk. Emphasis is placed on the management of the room division areas of both a manual and computerized hotel operation. Highlights include the entire process from room reservations through check out, guest service management, and statistical analysis of pricing, occupancy, and yield management. HM majors only. 3 semester hours

HM 107  INTRODUCTION TO FOOD PREPARATION
This course introduces students to food and beverage operations through three major components: fundamental food composition and properties, food safety, and food products and preparation. Students select recipes and prepare production schedules. They develop the ability to recognize properly prepared foods through preparing, tasting, and evaluating foods. Students work in teams in which management principles are introduced. Students are expected to learn and use food production measurements and conversions and a beginning culinary vocabulary. Each student must purchase a nationally accepted sanitation certification course with exam and a chef’s uniform prior to the start of the course. HM majors only. 4 semester hours

HM 204  APPLIED HUMAN RESOURCE MANAGEMENT IN THE HOSPITALITY INDUSTRY
This course provides an overview of human resource management in today’s workplace. Emphasis is placed on organizational structure, the human resource function, and employment law. These foundational areas provide the basis for exploration of the employment process, employee development, and employee communications. Effective business communication is also introduced. An historical perspective of management principles and their evolution into the hospitality human resource area are explored. Prerequisite: HM 101. 3 semester hours

HM 207  APPLIED FOOD PRODUCTION MANAGEMENT
A detailed study of the standards and techniques of commercial food purchasing and preparation. Students learn to evaluate quality food products through lectures, demonstrations, and laboratory work in the teaching kitchen. Food preparation laboratories cover production of international cuisine, convenience foods, and theme menus. Prerequisite: HM 107. 4 semester hours

HM 291  MEETING PLANNING
A study of the planning, budgeting, and implementation of meetings and conferences. Students will review all aspects of meeting planning including the logistics of lodging, breakout rooms, meals, breaks, and general sessions. 3 semester hours

HM 303  HOSPITALITY COST ACCOUNTING
The study of accounting systems for hotels, restaurants, and private clubs. The course examines the flow of data from source inputs
through financial statement preparation and analysis. Included are control tools and common techniques used by managers to synthesize information in quantitative decision making for hospitality operations. Prerequisites: ACCT 204 and ACCT 205. 3 semester hours

**HM 306 HOSPITALITY MARKETING**
The study of marketing as it applies to service industries, and especially of methods of marketing a hotel or restaurant. Topics include the basics of marketing, sales promotion, and special problems relating to the hospitality industry. Writing-enriched course. Prerequisite: HM 101. 3 semester hours

**HM 351 HOSPITALITY LABOR RELATIONS**
An interdisciplinary study of the history and development of labor-management relations with emphasis on the hotel and restaurant industry. Through exhibits, text, and research, the course considers solutions to labor-management problems. Discussions include the structure and organization of unions in the hotel, restaurant, and food service field. Prerequisite: HM 204. 3 semester hours

**HM 352 FACILITIES MANAGEMENT**
A study of basic decision-making models for energy, maintenance, and engineering situations, especially as applied to hotel and restaurant facilities. Basic terminology is covered along with discussions of heating, ventilation, air conditioning, electricity, and water systems, with particular emphasis on energy conservation and costs. HM majors only. 3 semester hours

**HM 354 CLUB MANAGEMENT**
An in-depth understanding of the private club industry is the focus of this course. The course will cover concepts of the history of private clubs, the responsibilities of a club manager, the club organization including the responsibilities of the board of directors, types of club operations and membership forms, recreation and social programming, and the unique concerns of the private club industry. Prerequisite: HM 101. 3 semester hours

**HM 355 RESORT AND TIMESHARE MANAGEMENT**
This introductory course focuses on the concepts of resort and time-share management. Topics directly relating to resort management include the historical background, development process, market analysis, feasibility studies, site planning issues, operations, and management issues. Timeshare management issues will include exchange systems, ownership and calendar issues, legal obligations, budgeting, and customer relations. Case studies, video and audio clips, and the internet will be used directly within the class to enhance the students understanding of this segment of hospitality. Prerequisite: HM 102. 3 semester hours

**HM 358 HOSPITALITY COMPUTER APPLICATIONS**
Study of various applications of computers in the hospitality industry. Systems studied include front office management, management accounting, restaurant management systems, bar and beverage management systems, telephone management systems, security management, and property management systems. Prerequisite: HM 102. HM majors only. 3 semester hours

**HM 360 DESTINATION MARKETING**
This class introduces the convention and visitors bureau as an integral part of destination marketing; addresses its place and importance in the local hospitality industry and general business community; and explores its organizational structure, financing, numerous audiences, and its sales and service missions. Guest industry speakers and possible off-site visits enhance the learning experience. Prerequisite: HM 306. 3 semester hours

**HM 361 MANAGED SERVICES**
This elective course is designed to introduce the student to specific segments in the hospitality industry which are often overlooked as career options. These segments include healthcare, college/university, school (K–12), business and industry, leisure/recreation, vending, in-flight, and corrections. The traditional food service opportunities are enhanced, but the course goes further in-depth into the other services now being offered by the hospitality companies; i.e., housekeeping, environmental services, and patient care. 3 semester hours

**HM 362 PROFESSIONAL CAREER DEVELOPMENT**
A course offered on the senior level that enables the student to focus on career goals. This course contains such requirements as résumé writing, interviewing skills, letter writing, and career goal setting. Juniors and seniors only. 3 semester hours

**HM 363 SPECIAL EVENTS MANAGEMENT**
This course is designed to teach the student about special events that occur on a very frequent basis in the hospitality industry. Special events include such things as company parties, golf/tennis tournaments, large city-wide functions, and large catered events. These events are becoming bigger and bigger, requiring more planning and preparation on the part of the function coordinator and caterer. 3 semester hours

**HM 364 CASINO MANAGEMENT**
This course provides an overview of casino management and casino operations. Topics include gaming trends in the United States, casino organizational structure, government regulations, and casino games. Also covered are the practices and problems associated with casino management including staffing, control, credit, security, and marketing. HM majors only. 3 semester hours

**HM 365 RACETRACK MANAGEMENT**
This course explores the various facets of racetrack management, focusing on the proliferation and operation of the “racinos”—the hybrid partnership of casinos and racetracks that has become commonplace in the industry. Students become familiar with the parimutuel model that generates racetrack revenues, marketing/brand loyalty paradigms that serve to promote the racino and the sport of racing, and the role of hospitality and customer service that links the racing venue’s on-track product to the facility’s larger whole. 3 semester hours

**HM 368 PRINCIPLES OF TOURISM**
The course gives an insight into the nature, scope, and significance of the tourism industry. Subjects studied include tourism’s historical development as well as its economic, sociological, and environmental impact. Current trends in the marketing and management of the tourism industry are discussed. 3 semester hours

**HM 400 LEADERSHIP DEVELOPMENT SEMINAR, CO-OP**
This 6-credit seminar is part of the 15-credit co-op capstone program and must be taken in conjunction with two other courses: HM 401 Leadership Skills Assessment and HM 402 Applied Hospitality Management Principles. Class activities and assignments focus on the interrelated areas of self-management, managing and leading others, organizational leadership, and future perspectives of management and leadership in the hospitality industry. Extensive use of the Myers-Briggs Type Indicator is utilized. Writing enriched course. 6 semester hours

**HM 401 LEADERSHIP SKILLS ASSESSMENT, CO-OP**
This 3-credit course is part of the 15-credit co-op capstone program and must be taken in conjunction with two other courses: HM 400 Leadership Development Seminar and HM 402 Applied Hospitality Management Principles. In this course, students implement critical thinking skills as they assess themselves as well as other managers. These projects focus on analyzing and developing characteristics essential for leadership. 3 semester hours

**HM 402 APPLIED HOSPITALITY MANAGEMENT PRINCIPLES, CO-OP**
This 6-credit course is part of the 15-credit co-op capstone program and must be taken in conjunction with two other courses: HM 400 Leadership Development Seminar and HM 401 Leadership Skills Assessment. Students work in an approved paid position in a hospitality industry organization within the pre-established semester parameters for at least 16 weeks as full-time employees for a minimum of 600 hours. During the semester, the employer twice evaluates the student’s job performance. In addition, students identify and accomplish on-the-job employment objectives, analyze organizational management styles, and develop an awareness of societal need in the context of civic responsibility. 6 semester hours
HM 403  HOSPITALITY LAW
Legal rights and responsibilities of managers of hotels, restaurants, and private clubs. The course consists of lectures, reading, and written assignments. Topics include the innkeeper’s responsibility for loss or injury to guest’s property, the relationship of the innkeeper and guest, and the specific laws relevant to situations in the hospitality industry. HM majors only. 3 semester hours

HM 404  STRATEGIC HUMAN RESOURCE MANAGEMENT IN THE HOSPITALITY INDUSTRY
This senior-level seminar explores contemporary human resource issues in the hospitality industry through research and case study analysis. Topics include labor relations and collective bargaining, compensation and benefits, performance assessment tools, social and ethical issues, and leading change in the 21st century. This seminar defines the relationship between strategic management and human resources. Contemporary issues are analyzed through a research project. This is a writing enriched course. Prerequisite: HM 204. 3 semester hours

HM 407  RESTAURANT OPERATIONS
A food production and service management restaurant simulation where the students operate the Heinz Dining Room. Emphasis is placed on food and alcoholic beverage service, food production techniques, team building, and group dynamics. Student groups develop a total restaurant concept based on regional and international cuisines, and accomplish course objectives through rotation among management and employee assignments. Prerequisites: Sanitation Certificate, HM 107, and HM 207. 4 semester hours

HM 424  HOSPITALITY INDUSTRY TRAINING SYSTEMS
Students are introduced to the benefits of effective training within the hospitality industry in this course. Students examine and define training needs, plan a training program, implement the training itself, and evaluate the training process. Areas of exploration include the needs assessment, the task analysis, learning objectives, individual and group training methods, and the use of training tools, aids, and technology in enhancing the training program. This course also emphasizes the importance of effective delivery technique. Prerequisite: HM 204. 3 semester hours

HM 450  BEVERAGE MANAGEMENT
A systematic study of wines, spirits, and beers. Topics of study include the history, sales, service, and controls involved in beverage management. The wines of Europe and America are studied and discussed. For juniors and seniors only. 3 semester hours

HM 488  SPECIAL TOPICS IN HOSPITALITY MANAGEMENT
Particular topics which have special appeal to instructors and students because of their timely quality or particular qualifications may be selected. 1–3 semester hours

HM 499  INDEPENDENT RESEARCH
Students may conduct independent research projects under the direction of a faculty member. 1–3 semester hours

HUMANITIES

HUM 050  ORAL COMMUNICATION FOR NON-NATIVE SPEAKERS
This is a course in oral communication skills for non-native speakers of English. Practice in developing strategies for academic interaction. Emphasis on structuring information for presentation, summarizing, speaking spontaneously, and making formal and informal presentations. Attention given to pronunciation, enunciation, non-verbal language, projection, and presence. Course may not be used as a humanities elective nor to satisfy the humanities distribution requirement and is considered a developmental course. 3 semester hours

HUM 051  RESEARCH TECHNIQUES FOR NON-NATIVE SPEAKERS
This course is in research techniques for non-native speakers of English. Focus on the development of library research methods and related writing skills, including summarizing, paraphrasing, and incorporating source quotations. Attention is given to the conventions of organization and style for several disciplines by writing short research papers which will be presented orally. Course may not be used as a humanities elective nor to satisfy the humanities distribution requirements and is considered a developmental course. 3 semester hours

HUM 101  INTRODUCTION TO THE HUMANITIES
This course will examine the interdisciplinary nature of Western culture and will incorporate materials from all disciplines within the humanities—art, literature, philosophy, history, and music. 3 semester hours

HUM 200  LITERATURE OF THE NON-WESTERN WORLD (SAME AS ENGL 130)
Students read works by major writers from Japan, China, India, African nations, and other cultures. This course includes works by writers such as Basho, Ferdousi, Confucius, Li Po, Motokiyo, and Mishima. In addition, students study selections from The Koran, The Bhagavad Gita, and a number of Japanese Noh plays. 3 semester hours

HUM 211  FRENCH CIVILIZATION AND CULTURE
From the Gallo-Roman period to the Space Age, this course will examine particularly how political, philosophical, and social conditions and developments are reflected in achievements in French literature and the arts. Taught in English. 3 semester hours

HUM 212  CONTEMPORARY FRENCH CIVILIZATION
This course concentrates on a study of contemporary French political, economic, and social structures and their development from the end of World War II to the present. Emphasis will be placed upon the evolution of family life, the changing role of women, education, leisure time activities, immigrant workers, and the sphere of French influence in other Francophone regions of the modern world. Current newspapers and magazines will be the sources of much topics. 3 semester hours

HUM 223  ANCIENT GREEK DRAMA IN TRANSLATION
Plays from tragedy, satyr drama, old comedy, and new comedy will be read with the emphasis on tragedy. For each play, attention centers on its structure and the version of myth presented or the political context from which it arose and which it influenced. 3 semester hours

HUM 251, 252  AFRICAN-AMERICANS IN THE UNITED STATES I & II
A course designed to explore, examine, and analyze the “Black Experience” in the United States from a humanistic perspective. The disciplines of history, philosophy, religion, languages, literature, and art provide the interpretive, interdisciplinary frame of reference. The first semester covers the period up through the Civil War. The second semester includes Reconstruction to the present. 6 semester hours

HUM 310  AMERICAN FOLKLORE
Designed and intended as an introduction to the field of folklore, this course is essentially a survey encompassing the basic, major divisions of the discipline: oral narrative, belief systems, material culture, and popular culture. Attention will be given to the nature, development, function, and appropriateness of folklore in our culture. Through the examination, analysis, and discussion of the components of folklore, the student will gain an understanding of and an appreciation for the discipline, especially with respect to its disciplinary ramifications. The opportunity to engage in fieldwork-oriented research will also be afforded. 3 semester hours

HUM 313  SELECTED TOPICS IN LITERATURE AND FILM (SAME AS WS 313)
Literature and film represent two of the media in which society explores its most puzzling questions. This course examines the way particular issues are treated in literature and film, focusing on both the issues and the analytical skills necessary to critique the two media. Issues are different each time the course is offered. 3 semester hours
HUM 316  THE LITERATURE OF SPAIN & THE AMERICAS DURING THE AGE OF EXPLORATION
In this introduction to the literature of Spain and New Spain from pre-contract through 1650, students read and discuss the discourse of exploration and conquest and analyze the themes of discovery, cultural encounter, and identity from both Spanish and indigenous perspectives. It begins with an overview of the chivalric spirit and the literature which molded the minds and spirits of the conquistadores, and continues with the chronicles of discovery and exploration and with an examination of Spanish colonialism. Finally, students consider an alternative perspective to the encounter of the two worlds through the reading selections and the iconography from the Amerindian accounts of the invasion of their lands. All readings, discussions, and assignments are in English. 3 semester hours

HUM 325  CONTEMPORARY GERMANY
This course focuses on historical, political, scientific, and cultural issues of the German-speaking countries. Students consider art, architecture, history, music, politics, science, technology, and much more. The regional focus of the class varies. The course includes lectures in English, instruction in basic German, and a mandatory trip to the German-speaking countries over spring break. Prerequisite: Permission of the instructor. 3 semester hours

HUM 330  REPRESENTATIVE MODERN LATIN AMERICAN FICTION IN TRANSLATION
This course introduces the student to modern Latin American fiction in translation. Part of the course will be dedicated to the study of short fiction and part to representative contemporary novels. Both genres should enable the student to reach a clearer understanding of the “real” rather than the “official” story of Latin America. A broad spectrum of writers is reflected in the choice of novels and short fiction studied. These writers represent a variety of countries and will invite interesting comparisons and contrasts regarding style and content. A dominant theme that characterizes much of the literature is a search for identity, and the student will come to see “realismo mágico” not only as a style but also as an integral part of the Latin American way of life. 3 semester hours

HUM 335  HISPANICS IN THE UNITED STATES
This course traces the history of the Hispanic presence in the United States and focuses on issues concerning immigration, exile, race, language, assimilation, and transculturation. Selected readings trace the evolution of U.S. and Latin American cultures and illustrate how significant social, economic, and political differences developed within the various regions of the Americas. In addition to historical monographs and essays, students read autobiographies, novels, short stories, poetry, and drama by writers who document contemporary Hispanic experience in the United States in a variety of ways. No knowledge of Spanish required. 3 semester hours

HUM 340  HUMANITIES AND MEDICINE
By exploring medicine through the humanities, students can discover mirrors within societies that reflect the many faces of medicine. This course challenges students to widen their viewpoints on medicine, especially considering the dichotomous terms of life-death, health-illness, and provider-patient. Key activities include writing a formal research paper, leading a classroom discussion, presenting in a public forum, and participating in special course activities (i.e., guest speakers, museum visits, and live performances). 3 semester hours

HUM 341  HUMANITIES AND MEDICINE (HONORS)
By exploring medicine through the humanities, students can discover mirrors within societies that reflect the many faces of medicine. This course challenges students to widen their viewpoints on medicine, especially considering the dichotomous terms of life-death, health-illness, and provider-patient. Key activities include writing a formal research paper, leading a classroom discussion, and participating in special course activities (i.e., guest speakers, museum visits, and live performances). This course also requires students to participate in preparing, enacting, and critiquing a live dramatic performance related to the medical humanities. 3 semester hours

HUM 355  WORLD WAR AND CINEMA (HONORS)
This course examines the post-war cinematic representation of the World Wars in many of the combatant nations, including France, Germany, Great Britain, Italy, Russia, and the United States. The course familiarizes students with the experience of these wars as well as the politics of national memory in order to facilitate contextual analysis. Students study both cinematic techniques and film theory and learn to apply these methods to the analysis of film. Collective and individual study of films expose significant shifts in the creation of each nation’s memories of world war. 3 semester hours

HUM 360  SEEING OTHERS, SEEING OURSELVES
This course will explore representations of the relations between dominant and minority cultures. The representations under scrutiny enter into a wide range of cultural practices, and thus call for an interdisciplinary study involving various branches of the humanities. Literature, music, art, film, and history—all will be considered in an examination of how culture creates systems of inclusion and exclusion that position individuals inside or outside a domain of privilege on the basis of criteria such as class, race, and gender. 3 semester hours

HUM 370  DISTINCT AND DIVERSE VOICES: THE WORLDS OF CURRENT INTERNATIONAL ENGLISH WRITERS
The intent of this course is to examine selected works from the growing body of postcolonial or international English writing and art. The works are from Africa, the Caribbean, and the Pacific Rim. Students will look at the cultural, social, historical, and political background of these works and the areas of the world they represent. The stories, novels, poems, plays, essays, music, art, and films read and viewed represent the diversity—and unity—of the multinational community we inhabit. Two major themes dominate the survey: first, the impact of whites upon the indigenous culture, and second, the problems of modernization, independent nation stature, and internal political corruption once the colonial power has been removed. The readings are all in their original English. 3 semester hours

HUM 375  TWIN PEAKS AND POSTMODERN TELEVISION
This course examines the intersections between popular culture and postmodernism, reading the television series Twin Peaks as a literary text. By studying Twin Peaks as narrative art and as cultural phenomenon, the course aims to give the student a sophisticated understanding of the differences between consumable and readable culture as well as critical strategies for interpreting the nuances in this wonderfully strange and mysterious text. 3 semester hours

HUM 409  SENIOR PROJECT
Offered in the fall semester only. 3 semester hours

HUM 499  INDEPENDENT STUDY
Individual investigation of a topic in humanities. Reading, research, consultation, and discussion as required. Credit, scope, topic, and prerequisites to be arranged individually. May be taken more than one semester. 3 semester hours

HUM 188, 288, 388, 488, 588  SPECIAL TOPICS IN HUMANITIES
Topics offered in response to student and faculty interest. 3 semester hours each

HUMANITIES MODULES
HUM 905  GREEK MYTHOLOGY
This module considers psychoanalytic and anthropological theories of myth origin, the Olympian deities, Greek myths, and treatment of myths in modern literature. 1.5 semester hours

HUM 916  PASSION AND DEATH
These themes are studied in five dramas by F. Garcia Lorca: Blood Wedding, Yerma, The House of Bernada-Alba, Dona Rosita, The Spinner, and The Love of Don Perlimplin for Belisa in Her Garden. Poetry is also read to illustrate how these themes permeate Lorca’s works. 1.5 semester hours
HUM 921  WORLD CULTURES
This module is an introductory survey that examines the cultural background of the non-Western world in a historical framework. It introduces the origins and development of the human communities of East and South Asia, Africa, the Middle East, and Central and South America. Special emphasis is placed on the early histories of these areas insofar as they show the foundations of the cultural legacies of their peoples that continue to the present. 1.5 semester hours

HUM 934  POVERTY AND THEFT
This module deals with Spain as the most powerful country in 16th-century Europe and the progenitor of the picaresque genre. Works studied include Lazareillo de Tormes, The Celestina; and Cervantes, Six Exemplary Novels. 1.5 semester hours

HUM 946  GENESIS: THE BEGINNINGS
Key concepts of the Judeo-Christian culture find their roots in Genesis whose composition consists of both early and late writing. The Hebraic traditions of the creation of the universe and of human beings, the relationship between the Creator and the created, the relationship of human with human, and the early experience of one people are explored. The book provides insight into the stirrings of people who in their humanity respond to what they regard as the revealed Word of God. Judaism, Christianity, and Islam are indebted to the book. 1.5 semester hours

HUM 947  JESUS IN THE GOSPELS
A look at the life and mission of Jesus Christ who is the center of one of the world’s dominant religions. Emphasis is placed on the Gospel as revealed in Mark, Matthew, Luke, and John. 1.5 semester hours

HUM 950  THE LEGACY OF EVE I (SAME AS WS 950)
A look at woman’s role as depicted in the Bible. The essential woman: ordinary, extraordinary, submissive, aggressive, good, evil. 1.5 semester hours

HUM 951  LONDON
A study, through literature and visual aids, of one of the world’s most emblematic cities. The course emphasizes the uniqueness of London, its boroughs (especially the city and Westminster) and institutions, as a successful merger of modernization and tradition. 1.5 semester hours

HUM 953  THE LEGACY OF EVE II
A look at the way a predominantly patriarchal culture viewed women in Jesus’ time, and how his view differed. The traditional picture of Eve is compared with the picture of the Virgin Mary. Emphasis is on the women who surrounded and were a vital part of the early Christian church. 1.5 semester hours

HUM 954  DESCENT OF WORDS
A study of word origins with consideration of related topics such as theories of language origin, the development of dictionaries, sources of new words, types of semantic change, and the history of the English language. 1.5 semester hours

HUM 955  DIALOGUE WRITING
Exercises in writing dialogue for assigned situations aimed at sharpening students’ dramatic perception and encouraging them to take advanced courses in creative writing. 1.5 semester hours

HUMAN RESOURCE MANAGEMENT

MHR 316  INTRODUCTION TO HUMAN RESOURCE MANAGEMENT
This course examines the role and function of human resources management in organizations. Major areas studied include trends in human resource management; human resource planning and utilization; job analysis and work design; employee recruitment, selection, and training; compensation and benefits; and managing the performance of people in a global environment. The course is designed to provide students with the knowledge and skills required by both human resource specialists and line managers. Prerequisite: MGT 210. 3 semester hours

MHR 325  DIVERSITY IN THE WORKPLACE
This course examines the rapidly changing workforce and population shifts in the United States and around the world in the 21st century. It looks at the differences and similarities that each person brings to the workplace. Students become aware of individual and cultural differences and examine a new organizational paradigm in which diversity can thrive. They focus on the issues, challenges, and subtle dynamics that operate in cross-cultural organizations and learn how to build work relationships that are functional, effective, and satisfying. The course considers the realities of increasing global competition, the renewed emphasis on human capital to achieve organizational goals, and the increasing diversity of customers. It evaluates the benefits and costs of having a diverse workforce. Prerequisite: MGT 210. 3 semester hours

MHR 416  LABOR-MANAGEMENT RELATIONS
Study of contemporary industrial relations at both the micro and macro level. Analysis of the factors shaping the American system of industrial relations; theories and history of the American labor movement; evolution of public policy; the impact of social and economic forces on employer-employee relations in public and private enterprise are included as is evaluation of collective bargaining through case studies. Prerequisite: MGT 210. 3 semester hours

MHR 420  ORGANIZATIONAL BEHAVIOR
An examination of the traditional structures of management and organizational theory as they meet a changing technology, a changing work force, changing job structures, and changing market demands. Organizational and management issues are examined in the context of the question: Will the theories of organization and management that have served us productively in the past have a significant meaning for effective managerial performance and worker productivity in the 21st century? Prerequisite: MGT 210. 3 semester hours

MHR 460  TRAINING AND DEVELOPMENT
This course is designed to provide students interested in the field of human resources with the knowledge and skills necessary to understand the processes of learning, training, and development, and their applications in business and industry. Students learn analytical and problem-solving approaches to training and development problems. Prerequisite: MHR 316. 3 semester hours

MHR 465  INTERNATIONAL HUMAN RESOURCE MANAGEMENT
U.S. corporations are moving into global markets at a very rapid pace. This increased level of globalization has a significant impact on how organizations recruit, develop, and manage their employees. This course explores the implications of internationalization on human resource management policies and activities. It discusses differences between domestic and international HR perspectives and identifies challenges and opportunities presented by HRM at the global level. Students develop an international perspective in various HR functions, including recruitment and selection, performance management, training and development, compensation, and labor relations. Cases and short projects play an important role in presenting international issues. Prerequisite: MGT 210. 3 semester hours

MHR 498  HUMAN RESOURCES MANAGEMENT INTERNSHIP
This is a course developed for the Human Resources Option to provide opportunities for obtaining practical experience by applying knowledge gained through coursework in an actual business environment. Students work on projects developed with industry partners and prepare reports on these experiences with their academic and industry supervisors. Prerequisite: Junior or senior standing. NOTE: This course can only be taken pass/fail as a free elective. 3 semester hours

ITALIAN
See courses listed under Modern Languages.

JAPANESE
See courses listed under Modern Languages.
**MGT 210  FOUNDATIONS OF MANAGEMENT**

This course is an introduction to management and organization theory. It integrates classic management thought with contemporary business and behavioral concepts. Students learn about the environment of business and the role that managers play in guiding the business firm to success. The class discusses the responsibilities and functions of management. Students learn how to plan, design organizations, lead and motivate people, and exercise control. Prerequisite: Sophomore standing. 3 semester hours

**MGT 365  INTERNATIONAL BUSINESS**

The course is designed to present a specialized, managerial overview of environmental and operational issues of international business. Several related topical areas will be investigated. First, the course examines the scope and patterns of international business and the environments it confronts. Emphasis is placed on the economic, political, legal, financial, and cultural environments of international business. Second, the theories and institutions of international business are explored, with a focus on multinational corporations (MNCs) and their global strategy formulation and implementation. Prerequisite: ANTH 105, MGT 210, and junior standing. 3 semester hours

**MGT 390  ENTREPRENEURSHIP AND SMALL BUSINESS MANAGEMENT**

The course deals with fundamental principles that would prove helpful to those preparing to enter the world of business or to those who intend to pursue specific advanced courses in finance, real estate, insurance, and law. Topics include forms of business organization, financing, insuring against business risks, acquisition and financing of real estate, business failures and reorganizations, and a general study of the “Bankruptcy Act and Rules.” Prerequisite: MGT 210, FIN 303, and junior standing. 3 semester hours

**MGT 409  SENIOR PROJECT**

Team-type projects for small groups of students working under faculty supervision. Projects combine analytical and field work. Written and oral presentation may be required. Prerequisite: Senior standing and approval of instructor. 3 semester hours

**MGT 440  MANAGEMENT AND SOCIETY**

The interaction of the Judeo-Hellenistic customs and mores and legal constraints on the action of the manager are studied through lectures, discussions, and analyses of cases to provide students with an awareness of the ethical requirements of managerial professionalism. Prerequisite: MGT 210 and junior standing. 3 semester hours

**MGT 451  MANAGEMENT SEMINAR**

This is an integrative course designed to focus on contemporary issues in management theory and practice. Class discussion and projects examine key areas of concern through an interdisciplinary framework of managerial, economic, ethical, and social values. A key aspect of the course is the preparation of a strategic business plan. Student groups work with real entities, including local business firms and product development teams, to develop plans and recommend implementation activities. The development of a strategic business plan requires students to integrate material from all of their core courses plus new material from this course. Prerequisite: Senior standing and completion of all SBA core courses except MGT 452. 3 semester hours

**MGT 452  MANAGEMENT POLICY AND STRATEGY**

Policy formulation and strategic decision-making from the viewpoint of the top-level manager is presented. The student is called upon to integrate the frameworks of accounting, finance, management, economics, and marketing through case analysis and group discussion. This is the capstone course for the bachelor of science in business administration. Early in the semester, students are assessed on business concepts covered previously in the SBA core curriculum via a comprehensive examination. All sections are writing enriched. Prerequisites: Senior standing and completion of the SBA core curriculum. 3 semester hours

**MGT 498  MANAGEMENT INTERNSHIP**

This is a course developed for management majors to provide opportunities to obtain practical experience by applying their knowledge gained through the classwork in an actual business environment. Students work on projects developed with industry partners and prepare reports on these experiences with their academic and industry supervisors. Prerequisite: Junior or senior standing. NOTE: This course can only be taken pass/fail as a free elective. 3 semester hours

**MIS 180  COMPUTING AND SPREADSHEETS**

Today’s business professionals are required to be more involved with computer application usage and development. The student has to demonstrate the understanding and ability using electronic spreadsheets for decision support purposes. Using state-of-the-art spreadsheet techniques, the student will be required to create and manipulate spreadsheet data, perform sensitivity analysis (what-if scenarios), perform simple macro programming, and create graphs and charts. 1 semester hour

**MIS 290  MANAGEMENT INFORMATION SYSTEMS**

This course provides elementary concepts to the management of information systems. The single most important factor in doing business in today’s competitive environment is how accurate, complete, and fast information is disseminated to the manager. This course covers the gathering, discriminating, storing, organizing, and disseminating of information so that it can be used efficiently. It embroils security of the vital information and cost of using hardware, software, and personnel. The purpose of this course is to understand the above underlying principle of information systems from a user perspective for different management functions. It surveys the use of current information systems technology in various business functions including accounting, economics, marketing, human resources, finance, sports management, and international management. Topics cover various system applications for specific business functions and their importance to today’s manager. The impact of information on the role of management is stressed. Issues include how information should be integrated into the organization to provide a competitive advantage. Prerequisite: MIS 180. 3 semester hours

**MIS 329  STRUCTURED SYSTEMS ANALYSIS AND DESIGN**

The study of systems analysis has long been a key component in the education of computer information systems professionals. Today, managers are faced with the need to communicate with systems professionals to assist them in designing systems to meet managers’ needs. This course covers the system development process including analysis, the logical and physical design, and system implementation and maintenance. Prerequisite: MIS 290. 3 semester hours

**MIS 358  DATABASE MANAGEMENT SYSTEMS**

A study of the technology and management of database information systems. This course surveys various theories of data modeling, emphasizing the relational entity set, and object-oriented models. Topics include data structures, organization, design, auditing, security, and recovery. Leading commercially available database management systems are studied, and their capabilities are evaluated. The role of the database administrator in the modern corporation is explored. Prerequisite: MIS 290. Students cannot receive credit for both MIS 358 and CSCI 434. 3 semester hours
MIS 363  OBJECT-ORIENTED DESIGN AND DEVELOPMENT
This course emphasizes the object-oriented aspects of programming, analysis, and design. Students learn how to design and develop information systems using an object-oriented/event-driven language. Topics include object-oriented concepts such as classes, inheritance, polymorphism, abstraction, hierarchy, modularity, and encapsulation. The course reinforces object design concepts using an object-oriented programming language. Students are required to write a number of computer programs. Prerequisite: MIS 290. 3 semester hours

MIS 421  INFORMATION TECHNOLOGY SOLUTIONS IN BUSINESS
This course includes the technology of data processing relative to computer hardware, computer software, and business data processing systems. Other topic areas involve management information systems and their life cycle of definition, development, and implementation activities. As actual examples, or case studies, of the application of computer-based information systems, this control course studies accounting information systems for the control of general ledgers, budgeting, working capital, production, and fixed assets. Other information systems studied include strategic planning and decision support systems. Prerequisite: MIS 290. 3 semester hours

MIS 425  SPECIAL TOPICS IN INFORMATION TECHNOLOGY
The only constant in the management of information technologies is change. As a result, university-level information systems curricula need frequent updating to remain effective. In an effort to provide students with the latest MIS issues, technologies, and uses of those technologies, it is imperative to bring the latest innovations and issues in MIS to the classroom. This course therefore, involves the in-depth study of a selected MIS topic or business use of a state-of-the-art information technology. All aspects of the computing field have had rapid and continuous change. This course allows MIS curriculum to present an in-depth coverage of a current MIS issue or technology. This course is to bring new and creative issues in MIS to the classroom. Prerequisite: MIS 290. 3 semester hours

MIS 430  ERP SYSTEMS AND WORKFLOW MANAGEMENT
To survive in the 21st century, organizations have focused on integrating enterprise-wide technology solutions in an attempt to improve their business processes. The largest of these information technology solutions has been in the area of Enterprise Resource Planning (ERP) Systems. This course introduces the student to ERP systems and the role of workflow management in enabling those systems. Students examine the ERP market, then experience an overview of these ERPs—SAP R/3. Students are introduced to various modules of SAP R/3 and receive basic hands-on experience with SAP R/3. There is an emphasis on analysis and design of business processes in order to improve organizational workflow. As a result, students gain experience with SAP Business Workflow. This course covers both functional and technical issues of ERP systems. This course counts toward the SAP Certificate of Recognition. Prerequisite: MIS 290. 3 semester hours

MIS 440  WEB DESIGN
This course provides the knowledge and skills necessary to develop an organization’s web-based solution using Extensive Markup Language (XML). It introduces XML-based design for electronic commerce (EC) and electronic business (EB). The focus is on the design of B2B business models using whiz-bang possibilities of XML. Various alternatives to web design are explored. Qualities of internet tools such as HTML, web servers, and browsers are discussed. Working as members of a team, students complete a small-scale, electronic commerce solution. Prerequisite: MIS 290 or equivalent. 3 semester hours

MIS 441  DECISION SUPPORT SYSTEMS
As organizations and the business environment become increasingly complex, the role of information technology in supporting informed and intelligent decisions has continued to increase. Web-based technologies deliver enterprise information and knowledge, business environment data, analysis tools, and collaboration capabilities to support decision making. Systems designed to support decisions take many forms and functions. This course surveys the theories of and the applications in these systems, including decision support systems, group collaboration and support systems, executive information systems, artificial intelligence systems, intelligent agents, organizational learning, and knowledge management. Extensive use of spreadsheets and SAP are incorporated into this course. This course counts toward the SAP Certificate of Recognition. Prerequisite: MIS 290. 3 semester hours

MIS 453  MIS CURRICULUM INTEGRATION THROUGH SERVICE LEARNING
This course integrates the areas covered in prior coursework, including databases, systems analysis and design, programming, and web design. The course enables students to gain an appreciation for how these subjects interrelate when developing, implementing, and using information systems in the real world. Students enhance their technical and managerial skills by analyzing, designing, and implementing an information system for an organization or constituency. Prerequisites: MIS 329, 358, and 363. 3 semester hours

MIS 461  DATA COMMUNICATIONS
This course is an introduction to fundamental data communications concepts and technology. Topics of discussion include transmission methods and media, various hardware devices and software required to implement data communications systems, techniques to minimize the cost of operating networks, the management and maintenance of a network environment, and detecting and correcting common data communication errors. Network configurations such as LAN, WAN, client/server, internet, intranet, and commercial network offerings are presented and evaluated. Each student is required to participate in designing an efficient data communications network. Prerequisite: MIS 290. 3 semester hours

MIS 498  MANAGEMENT INFORMATION SYSTEMS INTERNSHIP
This course developed for the Management Information Systems Option provides opportunities for obtaining practical experience by applying knowledge gained through classroom in an actual business environment. Students work on projects developed with industry partners and prepare reports on these experiences with their academic and industry supervisors. Prerequisite: Junior or senior standing. NOTE: This course can only be taken pass/fail as a free elective. 3 semester hours

MARKETING

MKT 300  MARKETING PRINCIPLES
This course fulfills a core requirement and serves as the foundation for further study in marketing. The course primarily has a micro-marketing orientation in that it presents marketing from the perspective of an individual manager or firm in the design of the marketing mix, target market selection, environmental assessment, securing information, and understanding consumer/buyer behavior. Marketing’s macro interface with society and the ethical responsibilities of managers in a global context are examined. A dynamic computer simulation stressing team work and group decision making is an integral part of the course. Prerequisites: EC 202, and junior standing. Students may not receive credit for both MKT 180 and 300. 3 semester hours

MKT 320  EVENT PLANNING AND SPORT MARKETING
In this course, students plan and execute a simulated marketing and publicity event designed to accomplish a sport organization’s goals. Students not only apply business skills in an event-marketing context but also receive exposure to the interdepartmental nature of a marketing decision-making process, blending together input from sales, marketing, publicity, creative services, broadcasting, events/entertainment, and accounting. Prerequisite MKT 300 and junior standing. 3 semester hours
MKT 400 CONSUMER AND BUSINESS BUYER BEHAVIOR
This is a marketing elective that analyzes in detail the qualitative and quantitative factors contributing to the thought processes, feelings, and behaviors of individual consumers and business organizations. The course critically examines the contributions of economics, marketing, and related behavioral disciplines to modern consumer behavior theories to deduce and predict consumer behavior of firms and individuals. Topics include a review of cultural, social, personal, and psychological factors influencing behavior. Problems and contributions of modern psychoanalytic theory and motivation research are studied from the perspective of their impact on improved marketing decision making. Students are introduced to current research trends in the discipline as reflected in the leading academic marketing journals. The course requires an in-depth research paper investigating a current consumer behavior topic. Prerequisite: MKT 180 or MKT 300. Students may not receive credit for both MKT 400 and PSY 203 (Consumer Behavior and Advertising). 3 semester hours

MKT 402 MARKETING MANAGEMENT
Strategic marketing decision making is the principal focus of this course. Students are introduced to the strategic and tactical decisions managers make on a daily basis. Analysis of a firm’s core competencies and mission is related to its target market and competitive environment. Through a series of case studies, students are required to select a strategic marketing alternative and defend the logic and soundness of their choice. Examples from the internet are integrated throughout the course. A marketing simulation is used to provide students with a deeper appreciation of the details in designing a marketing mix and assessing competitive environments. Prerequisites: EC 201 and 202, MKT 180 or 300, and MATH 117. 3 semester hours

MKT 403 PROFESSIONAL PERSONAL SELLING
Personal selling is the face-to-face, personalized method of communicating with customers. Often, salespeople constitute the largest expense for marketing communications within a business. In this course, students learn the strategies, skills, and behaviors an individual needs to be able to create, communicate, and deliver value to a customer. The primary topic is the steps in the selling process designed to initiate, develop, and enhance customer relationships. Other topics are the buying process, adaptive selling, negotiation skills, and ethical issues in selling. This hands-on course makes extensive use of exercises, role plays, and interactions with the professional sales community. Prerequisite: Junior standing and MKT 300 or permission of the instructor. 3 semester hours

MKT 405 SALES MANAGEMENT
This marketing elective course provides an overview of the terminology, methods, and issues in managing the personal selling function and sales representation. Topics include sales forecasting and quota methods, selection and recruiting of sales people, training, compensation, and motivation methods and issues, organization of sales territories, sales force automation, and the professional personal selling process. The course relies on a mix of lectures, exercises, guest speakers, case studies, and an interview project. Prerequisites: EC 201, EC 202, MKT 180 or MKT 300, and MATH 117. 3 semester hours

MKT 406 MARKETING RESEARCH
This course introduces students to the methodology and procedure of securing information for improved marketing decision making. The marketing research process is presented as a sequence of logically connected steps that depends on problem definition, research design, sample selection and data interpretation, and presentation. Questionnaire design, scale development, hypothesis testing, and regression analysis are other topics studied. Students are assigned a semester-long research project addressing one of the areas of study. Prerequisites: EC 201 and 202, MKT 180 or 300, and QA 252. 3 semester hours

MKT 409 CUSTOMER RELATIONSHIP MANAGEMENT
Customer relationship management (CRM) is a business strategy that enables companies to understand and connect with their customers more effectively. Emerging technologies permit firms to become more customer-centric—a new strategic imperative. Defining and implementing an effective CRM strategy is currently a key topic for marketers. The technology available to support a CRM strategy is new and rapidly changing, requiring that marketers rethink their interactions with customers. In this course, students will learn about how a company crafts and implements a strategy to coordinate and integrate all of the various touchpoints available to a customer, including web pages, call centers, and the field sales force. Various CRM software packages will be examined and discussed. Technology will be explored from the point of view of the technology purchaser and user, so a technical background is not necessary. Projects and exercises will enable students to become familiar with a variety of the software packages. This course counts toward the SAP Certificate of Recognition. Prerequisite: EC 201, EC 202, and MKT 180 or MKT 300. 3 semester hours

MKT 410 INTERNATIONAL MARKETING
The global dimensions of marketing activities are emphasized in this course. As such, the course stresses the importance of cultural, political, social, religious, technological, and economic factors in determining how consumer preferences are formed. The conditions for designing successful marketing strategies across diverse markets are studied. Major topics include comparative advantage, the standardization/customization debate, currency fluctuations, market entry strategies, nature of business risks in global markets, growth of regional alliances, and manipulating controllable marketing variables on a global scale. The course makes use of case studies to reinforce concepts. A major term paper is required. Prerequisite: EC 201, EC 202, and MKT 180 or MKT 300. 3 semester hours

MKT 412 ADVERTISING
This marketing elective course provides an overview of the terminology, methods, and issues in managing the advertising function of the promotional mix. Topics include social, ethical, and regulatory aspects, advertising research, advertising campaign development, media selection, advertising on the internet, direct marketing, creative process, and the functions of advertising participants. A significant creative project is required. The course relies on a mix of lectures, case study discussions, and projects. Prerequisites: EC 201, EC 202, and MKT 180 or MKT 300. 3 semester hours

MKT 498 MARKETING INTERNSHIP
This course provides opportunities to obtain practical experience by applying marketing knowledge gained through classwork in an actual business environment. Students work on projects developed with industry partners and prepare reports on these experiences with their academic and industry supervisors. Prerequisite: Junior or senior standing. NOTE: This course can only be taken pass/fail as a free elective. 3 semester hours

MATHEMATICS
Any student entering Widener who plans to take a MATH course other than MATH 101 as a first mathematics course must take the Mathematics Placement Test.

The sequence MATH 117–118 is primarily for students in the social sciences, economics, accounting, and management. The sequences MATH 141–142 and MATH 131–132–133 are primarily for students in engineering, the sciences, and mathematics. Students may not receive credit for MATH 117–118 as well as credit for either of the other sequences. The sequence MATH 141–142 covers the same material as MATH 131–132–133 at a more rapid pace. Students who need a review of trigonometry are strongly advised to take MATH 131–132–133. Students may not receive credit for both sequences.

MATH 101 FUNDAMENTALS OF MATHEMATICS
This is a developmental mathematics course designed to review elementary algebra, to prepare students for further mathematics courses, and to develop problem-solving skills and critical thinking in mathematics. Topics include the real number system, linear equations and inequalities, exponents and polynomials, factorization, rational expressions, roots and radicals, and graphing. Because this
MATH 111 MATHMATICAL IDEAS I
This course is designed for students pursuing early childhood or elementary school teacher certification. Emphasis is placed on learning concepts and developing an understanding of mathematics as a body of connected ideas. The NCTM (National Council of Teachers of Mathematics) Principles and Standards for School Mathematics provides a framework for the selection of topics for this course. Topics are presented in a historical context and include an introduction to problem solving; elementary set theory; patterns, relations, and functions; number concepts and relationships; and elementary number theory. Prerequisite: Human-ites or social science major, elementary/early childhood major, or permission of instructor; MATH 101 or satisfactory score on the Mathematics Placement Test. 3 semester hours

MATH 112 MATHMATICAL IDEAS II
This is a second course in mathematics designed for students pursuing early childhood or elementary school teacher certification. Emphasis is placed on learning concepts and developing an understanding of mathematics as a body of connected ideas. The NCTM (National Council of Teachers of Mathematics) Principles and Standards for School Mathematics provides a framework for the selection of topics for this course. Topics are presented in a historical context and include proportional reasoning, measurement, geometry, geometric transformations, and data analysis. Prerequisite: Humanities or social science major, elementary/early childhood major, or permission of instructor; MATH 101 or satisfactory score on the Mathematics Placement Test. 3 semester hours

MATH 113 EARTH ALGEBRA
This course is designed as a science elective for students majoring in humanities or social science. Concepts of elementary algebra are introduced in the context of simple models for the “greenhouse” effect. Linear, quadratic, exponential, and logarithmic functions are studied and used to make long-term predictions. Credit will not be granted for both MATH 113 and 117. Prerequisite: MATH 101 or satisfactory score on the Mathematics Placement Test. 3 semester hours

MATH 114 BASIC CONCEPTS OF PROBABILITY AND STATISTICS
This course is designed as a science elective for students pursuing early childhood and/or elementary school teacher certification. Topics may include both theoretical probability and principles of counting. Various proof techniques, graphical representation of data, measures of central tendency and variability, and statistical inference. Prerequisite: Humanities or social science major, elementary/early childhood major, or permission of instructor; MATH 101 or satisfactory score on the Mathematics Placement Test. 3 semester hours

MATH 116 THE NATURE OF MATHEMATICS
This course is an introduction to the nature and utility of mathematics, designed for students majoring in humanities, social sciences, or education. Mathematical topics are chosen from the following: sets, logic, number systems, numbers, trigonometry, networks and graph theory, probability and statistics with applications to growth, financial management, combinatorics, and voting. Prerequisites: Humanities, social sciences, or education major, or permission of instructor; MATH 101 or satisfactory score on the Mathematics Placement Test. 3 semester hours

MATH 117 ELEMENTARY FUNCTIONS
The course starts with a review of elementary algebra and moves on to the study of functions and graphs (emphasizing polynomial, exponential, and logarithmic functions), systems of linear equations, and matrices and linear programming. Prerequisite: MATH 101 or a satisfactory score on the Mathematics Placement Test. 3 semester hours

MATH 118 ELEMENTARY CALCULUS I
Concepts of calculus are studied. The emphasis is on the differentiation and integration of polynomial, rational, exponential, and logarithmic functions. Prerequisite: MATH 117 or MATH 120 or a satisfactory score on the Mathematics Placement Test. 3 semester hours

MATH 120 PRECALCULUS
This course is designed for students who need to take calculus but lack the prerequisite background. Topics include a review of real numbers; algebra (fractions, exponents, roots, equations of degree 1 and 2); elementary functions (polynomials, rational functions, trigonometric functions); and basic concepts from geometry. Solving of word problems are emphasized throughout. Credit will not be granted for both MATH 120 and 117. Prerequisite: MATH 101 or a satisfactory score on the Mathematics Placement Test. 4 semester hours

The sequence MATH 141–142 covers the same material as MATH 131–132–133 at a more rapid pace. Students who need a review of trigonometry are strongly advised to take MATH 131–132–133. Students may not receive credit for both sequences.

MATH 131 CALCULUS WITH REVIEW I
This is the first semester of a three-semester sequence in differential and integral calculus of a single variable. The course introduces the concept of the derivative and some of its applications. After a review of coordinate systems and functions, including polar coordinates and trigonometric functions, the course covers limits, continuity, differentiation, and applications of derivatives. Typical applications include related rates, curve sketching, linearization and differentials, Newton’s method, and optimization. Prerequisite: MATH 120 or a satisfactory score on the Mathematics Placement Test. 4 semester hours

MATH 132 CALCULUS WITH REVIEW II
This course introduces the concept of the Riemann integral and some of its applications. Topics include the Mean Value Theorem, antiderivatives, Riemann sums, the Fundamental Theorem of Calculus, the logarithmic and exponential functions, hyperbolic and inverse trigonometric functions, indeterminate forms, and applications of definite integrals. Prerequisite: MATH 131 or MATH 141. 4 semester hours

MATH 133 CALCULUS WITH REVIEW III
This is the final semester in the three-semester sequence in differential and integral calculus. It covers further techniques of integration, improper integrals, infinite sequences and series, power series, Taylor polynomials, and polar coordinates. Prerequisite: MATH 132. 4 semester hours

MATH 141 CALCULUS I
This is the first of a two-semester sequence in differential and integral calculus. It covers limits and continuity, differentiation of algebraic and trigonometric functions, applications of derivatives, the Mean Value Theorem, antiderivatives, Riemann sums, the Fundamental Theorem of Calculus, integration by substitution, and some applications of definite integrals. Prerequisite: MATH 120 with a grade of at least a B or a satisfactory score on the Mathematics Placement Test. 4 semester hours

MATH 142 CALCULUS II
This is the final semester in the two-semester sequence in differential and integral calculus. It covers logarithmic and exponential functions, indeterminate forms, inverse trigonometric and hyperbolic functions, techniques of integration, improper integrals, infinite sequences and series, power series, Taylor polynomials, and polar coordinates. Prerequisite: MATH 141 or MATH 132. 4 semester hours

MATH 151 ELEMENTARY DISCRETE MATHEMATICS I
This is an introductory approach to discrete mathematics. Topics include propositional logic and an introduction to first order logic, set theory, number theory, induction by substitution, and some combinatorial applications, including induction, will be taught and used throughout the course. Applications are stressed. Prerequisite: MATH 101 or a satisfactory score on the Mathematics Placement Test. 3 semester hours

MATH 152 ELEMENTARY DISCRETE MATHEMATICS II
A continuation of MATH 151. Topics include functions, recursion, graph theory, algebraic structures, and combinatorics. Combinatorial problems will be solved using various counting techniques including
permutations, combinations, inclusion-exclusion, and the binomial theorem. Various graph algorithms will be studied and their complexities evaluated. Proof techniques are stressed. Prerequisite: MATH 151. 3 semester hours

MATH 217, 218 ELEMENTARY CALCULUS II, III
A continuation of MATH 118 which considers special methods of integration, differential and difference equations, applications of matrix algebra, and linear programming with particular emphasis on applications in economics and management. Prerequisite: MATH 118 for MATH 217 and MATH 217 for MATH 218, or permission of the instructor. 3 semester hours each

MATH 241 MULTIVARIABLE CALCULUS
The course covers parametric curves and vectors in the plane and three-space, differentiation of vector functions, motion in space, curvature, functions of several variables, partial derivatives, directional derivatives and gradient, double and triple integrals, area and volume, integration in cylindrical and spherical coordinates, vector fields, line integrals, Green’s theorem, surface integrals, and Stoke’s theorem. Prerequisite: MATH 142 or MATH 133. 4 semester hours

MATH 242 ELEMENTARY DIFFERENTIAL EQUATIONS
Analytical, numerical, and graphical approaches to the solution of linear and nonlinear first order ordinary differential equations are discussed. Solution methods for second and higher order linear equations are treated, together with selected applications. Prerequisite: MATH 142 or MATH 133. 3 semester hours

MATH 273 INTRODUCTION TO PROBABILITY
This course introduces the basic concepts of probability, including elementary events, sample spaces, independence, conditional probability, Bayes’ formula, expectation, and random variables. Both discrete and continuous random variables are considered, with examples drawn from games, genetics, coding theory, elementary decision theory, and queuing theory. Prerequisite: MATH 142 or MATH 133. 3 semester hours

MATH 322 TOPICS IN DISCRETE MATHEMATICS
This course concentrates on algorithmic thinking and proofs. Topics include sets and functions, relations and orders, counting techniques, analysis of algorithms, induction, recurrence relations, elements of the theory of numbers, and graph theory. Prerequisite: MATH 142 or MATH 133. Credit will not be granted for both MATH 322 and MATH 151–152. 4 semester hours

MATH 325 HISTORY AND PHILOSOPHY OF MATHEMATICS (FORMERLY MATH 225)
This course traces the development of mathematical ideas. Historical details form the course’s foundation, but the emphasis is on the changing face of mathematics in relation to different opinions about the nature of mathematics. The role of logic, formalization, experimentation, applications, examples, analogy, and motivation in mathematics are probed. The contributions of different societies and groups are explored. Prerequisite: MATH 241 or MATH 242. 4 semester hours

MATH 331 LINEAR ALGEBRA
An introductory treatment of linear algebra, including systems of linear equations, matrices, determinants, vector spaces, linear independence, bases, linear maps, eigenvalues and eigenvectors, together with selected applications. Prerequisite: MATH 142 or MATH 133. 4 semester hours

MATH 332 MODERN ALGEBRA
An introductory study of algebraic structures such as groups, rings, and fields is made in this course. Galois Theory is studied as time permits. Prerequisite: MATH 142 or MATH 133. 4 semester hours

MATH 341 ADVANCED CALCULUS I
This course covers the fundamentals of real analysis: the axioms of the real number system, convergence of sequences and series, the topology of Euclidean spaces, continuity, uniform continuity, and differentiability. Prerequisite: MATH 241. 4 semester hours

MATH 342 ADVANCED CALCULUS II
Continuation of MATH 341. Topics include the Riemann integral, Riemann-Stieljes integration, sequences and series of functions, normed linear spaces, linear transformations, and inverse and implicit function theorems. Prerequisite: MATH 341. 4 semester hours

MATH 343 APPLIED ANALYSIS
The course covers Fourier series, Fourier transforms, and integrals. These tools are applied to the study of partial differential equations; in particular, the wave equation, heat equation, and Laplace’s equation. Prerequisite: MATH 241 and MATH 242. 4 semester hours

MATH 351 TOPICS IN GEOMETRY
The content varies from year to year to accommodate special interests of instructors and students. Topics may include an axiomatic treatment of synthetic geometry, projective geometry, classical differential geometry, and convex sets. Prerequisite: MATH 241. 4 semester hours

MATH 352 POINT SET TOPOLOGY
A study of the topology of the real line and of higher dimensional Euclidean spaces serves as a model for the study of metric spaces; these in turn lead to general topological spaces. Particular attention is paid to the notions of compactness, connectedness, completeness, and continuity. Prerequisite: MATH 241. 4 semester hours

MATH 361 NUMERICAL METHODS
A one-semester introduction to numerical methods, covering fixed point arithmetic, solutions of equations in one variable, interpolation and approximation, numerical integration, initial-value problems for ordinary differential equations, and numerical techniques in matrix algebra. Prerequisite: MATH 242; recommended: MATH 331. 4 semester hours

MATH 373 MATHEMATICAL STATISTICS
After a preliminary study of probability spaces, the notions of random sampling theory are introduced. The binomial and the normal distributions are examined in detail, leading to techniques for estimating parameters, determining confidence intervals, and testing hypothesis. Prerequisite: MATH 241. 4 semester hours

MATH 376 INTRODUCTION TO COMPLEX ANALYSIS
The algebra of complex numbers is developed. The elementary functions are studied, including a description of the singularities of rational functions. The technique of contour integration is developed, including the residue method of evaluation. An application is made to the computation of definite integrals. Prerequisite: MATH 241. 4 semester hours

MATH 408, 409 SENIOR PROJECT I, II
Design and implementation of a project approved by the faculty. Prerequisite: Senior standing. 2 semester hours each

MATH 490 MATHEMATICS INTERNSHIP
This subject-related work experience or other activity is offered only upon special application from the student and a supervising faculty member. Approval must be obtained in advance from the mathematics faculty and requires a specific outline of work to be done; the nature and extent of its academic relevance; the academic and special preparation of the student for the proposed activity. Written approval must be obtained from the employer/sponsor, and arrangements must be made for regular contact between the student and the supervising faculty member. The student is responsible for making all arrangements. A final report must be submitted upon completion of the activity, and a pass/fail grade will be assigned. The number of semester hours earned will depend on the extent of the approved activity (12 semester hours corresponds to full-time work for a semester). Prerequisites: Junior or senior standing, a GPA of at least 2.5 both in the major and cumulative in all courses, and approval of both the academic advisor of the student and the head of the Science Division. 3–12 semester hours

MATH 499 INDEPENDENT STUDY
Students may pursue the study of mathematical topics not included in the previously listed courses; or students may participate in problems seminars. May be repeated. Prerequisite: Junior or senior status and subject to the selection of a faculty sponsor. 1–4 semester hours
MILITARY SCIENCE

MS 101 LEADERSHIP AND PERSONAL DEVELOPMENT
MS 101 introduces cadets to the personal challenges and competencies that are critical for effective leadership. Cadets learn how the personal development of life skills such as critical thinking, goal setting, time management, physical fitness, and stress management relate to leadership, officerhip, and the Army profession. The focus is on developing basic knowledge and comprehension of Army leadership dimensions while gaining a big picture understanding of the ROTC program, its purpose in the Army, and its advantages for the student. 1 semester hour

MS 102 INTRODUCTION TO TACTICAL LEADERSHIP
MS 102 overviews leadership fundamentals such as setting direction, problem-solving, listening, presenting briefs, providing feedback, and using effective writing skills. Cadets explore dimensions of leadership values, attributes, skills, and actions in the context of practical, hands-on, and interactive exercises. Cadre role models and the building of stronger relationships among the cadets through common experience and practical interaction are critical aspects of the MS 102 experience. 1 semester hour

MS 201 INNOVATIVE TEAM LEADERSHIP
MS 201 explores the dimensions of creative and innovative tactical leadership strategies and styles by examining team dynamics and two historical leadership theories that form the basis of the Army leadership framework (trait and behavior theories). Cadets practice aspects of personal motivation and team building in the context of planning, executing, and assessing team exercises and participating in leadership labs. Focus is on continued development of the knowledge of leadership values and attributes through an understanding of Army rank, structure, and duties and basic aspects of land navigation and squad tactics. Case studies provide tangible context for learning the Soldier's Creed and Warrior Ethos as they apply in the contemporary operating environment (COE). 2 semester hours

MS 202 FOUNDATIONS OF TACTICAL LEADERSHIP
MS 202 examines the challenges of leading tactical teams in the complex contemporary operating environment (COE). The course highlights dimensions of terrain analysis, patrolling, and operation orders. Further study of the theoretical basis of the Army leadership framework explores the dynamics of adaptive leadership in the context of military operations. MS 202 provides a smooth transition into MS 301. Cadets develop greater self-awareness as they assess their own leadership styles and practice communication and team building skills. COE case studies give insight into the importance and practice of teamwork and tactics in real-world scenarios. 2 semester hours

MS 301 ADAPTIVE TACTICAL LEADERSHIP
MS 301 challenges cadets to study, practice, and evaluate adaptive leadership skills as they are presented with challenging scenarios related to squad tactical operations. Cadets receive systematic and specific feedback on their leadership attributes and actions. Based on such feedback, as well as their own self-evaluations, cadets continue to develop their leadership and critical thinking abilities. The focus is on developing cadets' tactical leadership abilities to enable them to succeed at ROTC's summer Leader Development and Assessment Course (LDAC). 3 semester hours

MS 302 LEADERSHIP IN CHANGING ENVIRONMENTS
MS 302 uses increasingly intense situational leadership challenges to build cadet awareness and skills in leading tactical operations up to platoon level. Cadets review aspects of combat, stability, and support operations. They also conduct military briefings and develop proficiency in garrison operation orders. The focus is on exploring, evaluating, and developing skills in decision-making, persuading, and motivating team members in the contemporary operating environment (COE). MS 302 cadets are evaluated on what they know and do as leaders as they prepare to attend the ROTC summer Leader Development and Assessment Course (LDAC). 3 semester hours

MS 400 U.S. MILITARY HISTORY
In MS 400, students develop awareness of the relationship of the military establishment to society, particularly in the United States. Students also develop their interest in the evolution of modern war and the progression of military professionalism. 3 semester hours

MS 401 DEVELOPING ADAPTIVE LEADERS
MS 401 develops cadet proficiency in planning, executing, and assessing complex operations, functioning as a member of a staff, and providing performance feedback to subordinates. Cadets assess risk, make ethical decisions, and lead fellow ROTC cadets. Lessons on military justice and personnel processes prepare cadets to make the transition to Army officers. MS IV cadets analyze, evaluate, and instruct cadets at lower levels. Both their classroom and battalion leadership experiences are designed to prepare MS 401 cadets for their first unit of assignment. They identify responsibilities of key staff, coordinate staff roles, and use situational opportunities to teach, train, and develop subordinates. 3 semester hours

MS 402 LEADERSHIP IN A COMPLEX WORLD
MS 402 explores the dynamics of leading in the complex situations of current military operations in the contemporary operating environment (COE). Cadets examine differences in customs and courtesies, military law, principles of war, and rules of engagement in the face of international terrorism. They also explore aspects of interacting with nongovernment organizations, civilians on the battlefield, and host nation support. The course places significant emphasis on preparing cadets for their first unit of assignment. It uses case studies, scenarios, and “What now, Lieutenant?” exercises to prepare cadets to face the complex ethical and practical demands of leading as commissioned officers in the U.S. Army. 3 semester hours

MS 499 A, B, C ROTC INDEPENDENT STUDY
This independent study course is only open to contracted ROTC cadets and is subject to the selection of a faculty sponsor. The course may be repeated. 1–3 semester hours

MODERN LANGUAGES
All courses are taught in the target language.

FRENCH

FREN 101, 102 ELEMENTARY FRENCH I & II
This basic course of study of the French language with equal emphasis on speaking, listening, reading, and writing offers an introduction to the culture of France and of the French-speaking world. 3 semester hours each

FREN 103, 104 ELEMENTARY FRENCH LAB I & II
These practice sessions emphasize the development of oral-aural competence. Through role-playing in a wide spectrum of real-life situations, students master proficiencies which enable them to react and respond naturally in current and accurate idiomatic French. These sessions integrate and expand upon materials concurrently studied in the elementary language courses. 1 semester hour each

FREN 201, 202 INTERMEDIATE FRENCH I & II
This intermediate course study of the French language with equal emphasis on speaking, listening, reading, and writing offers instruction in the more complex structures of the language. In addition, the course expands students' knowledge of the culture of France and the French-speaking world. Prerequisite: FREN 102 or permission of instructor. 3 semester hours each

MATH 188, 288, 388, 488, 588 SPECIAL TOPICS IN MATHEMATICS
Topics offered in response to student and faculty interest. 3 semester hours each
FREN 301, 302 FRENCH CONVERSATION AND COMPOSITION I & II
Intensive practice in oral and written expression. Topics for discussion and written assignments will be drawn from contemporary French and Francophone culture. Prerequisites: FREN 202 or consent of the instructor. 3 semester hours each

FREN 304 FRENCH CIVILIZATION AND CULTURE
From the Gallo-Roman period to the Space Age, this course examines particularly how political, philosophical, and social conditions and developments are reflected in achievements in French literature and the arts. Prerequisite: FREN 301 and 302 or their equivalent. 3 semester hours

FREN 305 CONTEMPORARY FRENCH CIVILIZATION AND CULTURE
This course concentrates on a study of contemporary French political, economic, and social structures and their development from the end of World War II to the present. Emphasis is placed upon the evolution of family life, the changing role of women, education, leisure time activities, immigrant workers, and the sphere of French influence in other Francophone regions of the modern world. Current newspapers and magazines, in French and in English, are the sources of many topics. Prerequisites: FREN 301 and 302 or their equivalent. 3 semester hours

FREN 306 FRENCH CINEMA AND SOCIETY
Selected French films serve as the basis for an exploration of many aspects of French culture. This course considers films from the 20th and 21st centuries, which treat periods in French history from the Middle Ages through the present. All films in French (some with subtitles). Course conducted in French. Fulfills Culture and Civilization requirement for French major and minor. Prerequisite: FREN 301 or 302 or by permission of instructor. 3 semester hours

FREN 307 FRENCH MEDIA AND SOCIETY
French television news programs, radio broadcasts, internet sites, and press articles serve as the basis for an exploration of many aspects of contemporary French culture. This course considers a broad range of issues affecting contemporary society including, but not limited to, the economy, politics (both national and international), religion, public health, crime, immigration, the arts, and tourism. In addition to learning about French culture, students also discuss the role of media in French society and explore the ways in which the French represent themselves in the media. All media documents will be in French (some with subtitles). The course is conducted in French. Fulfills Culture and Civilization requirement for French major and minor. Prerequisite: FREN 301 or 302 or by permission of instructor. 3 semester hours

FREN 309 INTRODUCTION TO FRENCH LITERATURE
This course introduces students to French literature. In addition to reading representative works in French, students study literary concepts such as theme, discourse, figurative language, dialogue, and text. Students read works from the four major categories of literary production—narrative, poetry, drama, and essay—with special attention given to the ways in which categories of genre are both constructed and challenged. Prerequisite: French 301 or 302 or by permission of the instructor. 3 semester hours

FREN 310 INTRODUCTION TO FRENCH AND FRANCOPHONE SHORT STORIES
Selected 19th- and 20th-century French and Francophone short stories are studied and interpreted as a reflection of the development of the short story and social, philosophical, and artistic changes throughout this period. Authors may include Camus, Djebar, Flaubert, Maupassant, and Sembé. The course is conducted in French. Prerequisite: French 301 or 302 or by permission of instructor. 3 semester hours

FREN 311, 312 READINGS IN FRENCH LITERATURE FROM THE MIDDLE AGES TO THE PRESENT I & II
Selected works of French literature are studied and interpreted as a reflection of the development of literary genres and social, philosophical, and artistic changes throughout French history. The first half of the course considers texts from the Middle Ages through the 18th century. The second half of the course deals with illustrative examples from the 19th century to the present day. Prerequisite: FREN 302 or by permission of instructor. 3 semester hours each

FREN 330 TOPICS IN FRANCOPHONE LITERATURE
Topics can vary but may include all periods and genres of literature from the French-speaking world. Readings may be drawn from a single country or from multiple countries. Possible topics include but are not limited to Francophone African theater, Francophone Caribbean novels, or Francophone Quebecois short stories. Studied authors may include Léopold Senghor, Assia Djebar, Anne Hébert, Aimé Césaire, Bernard Dadié, and Gabrielle Roy. 3 semester hours

FREN 341 CONTEMPORARY FRENCH AND FRANCOPHONE WOMEN WRITERS
The quest to create fiction has been a difficult one for women from French-speaking countries around the world. Many of the authors featured in this course have overcome obstacles of sexism, racism, and ethnorelativism. Against all odds, writers such as Marguerite Duras, Edwidge Danticat, Maryse Conde, and Assia Djebar have created literary works of extraordinary beauty and depth. Students discuss a variety of issues, including the representation of women in literature, colonialism and its aftermath, exile and repatriation, and the many purposes that literature can serve. 3 semester hours

FREN 405 PRACTICUM IN FRENCH
Students assist in a variety of nonprofit social and educational organizations and programs. A core component of this course consists of engaging students’ language skills and specialized cultural knowledge. Off-campus assignments are combined with in-class discussion and reflection. Students may work with local or international organizations in French-speaking countries. Students will not be paid for the services they provide to the partner organization. In addition to written assignments, students may be required to present their individual projects in a public forum. The course fulfills a culture distribution requirement for the major. Prerequisite: French 202 or permission of instructor. 3 semester hours

FREN 406 INTERNSHIP IN FRENCH
Students pursue internship experiences in a range of governmental organizations, businesses, and nonprofit institutions. The internship must relate directly to the Francophone world, and French must be the primary language used in the workplace. A minimum of 75 hours on site is required. Interns are solely responsible for providing adequate documentation (e.g., letter from supervisor, time sheets, and contract) as to the number of hours fulfilled and the duties performed. Students may be paid for their work at the partner institution. A research paper in French focusing on an aspect of the internship is required. Students must consult the supervising faculty member prior to their internship to determine whether the internship fulfills the criteria for credit in this course. Depending on the nature of the internship, this course may fulfill one culture distribution requirement for the major. 3 semester hours

FREN 409 SENIOR SEMINAR
Offered in fall semester only. 3 semester hours

FREN 499 INDEPENDENT STUDY
Independent study and research; individual investigation of a problem in literature or a closely related topic may be arranged by a student and professor. 3 semester hours

FREN 188, 288, 388, 488, 588 SPECIAL TOPICS IN FRENCH
Topics offered in response to student and faculty interest. 3 semester hours each

GERMAN
GRMN 101, 102 ELEMENTARY GERMAN I & II
This multiple approach to language learning is an introduction to German culture and civilization through graded readings. The student is introduced to the fundamentals of German linguistics and, at the same time, is drilled in diction and given elements of grammar and rudiments of composition. 3 semester hours each
GRMN 103, 104 ELEMENTARY GERMAN LAB I & II
These practice sessions emphasize the development of oral-aural competence. Through role-playing in a wide spectrum of real-life situations, students master proficiencies which enable them to react and respond naturally in current and accurate idiomatic German. These sessions integrate and expand upon materials concurrently studied in the elementary language courses. 3 semester hours each

GRMN 201, 202 INTERMEDIATE GERMAN I & II
The language and culture of Germany are studied in an intensive review of German grammar and German linguistics done exclusively in German. An introduction to all elements of German culture and civilization through readings of graded literary texts and cultural materials is included. 3 semester hours each

GRMN 301, 302 GERMAN CONVERSATION AND COMPOSITION I & II
Intensive practice in oral and written expression. Topics for discussion and written assignments will be drawn from contemporary culture of the German-speaking world. Prerequisites: GRMN 202 or consent of the instructor. 3 semester hours each

GRMN 304 GERMAN CIVILIZATION AND CULTURE
A survey of the historical, political, and social factors from 763 A.D. to the present which have influenced the character and culture of the German-speaking countries of Western Europe. Prerequisite: GRMN 202 or its equivalent. 3 semester hours

GRMN 306 GERMAN FILM AND SOCIETY
This course treats films from the German-speaking world over the past century. Films are discussed in terms of techniques and socio-cultural contexts. All discussion and written work are done in German. This course may be used for fulfilling the cultural requirement for the German minor. Prerequisite: GRMN 202 or by permission of the instructor. 3 semester hours

GRMN 320 MODERN GERMAN LITERATURE
Reading and critical analysis of representative writers from Germany, Switzerland, and Austria. Classroom discussion, brief presentation, and short papers in German are required. Prerequisite: GRMN 202 or its equivalent. 3 semester hours

GRMN 330 GOETHE
The early works of Goethe are considered, with special emphasis on Faust. Prerequisite: GRMN 202 or its equivalent. 3 semester hours

GRMN 499 INDEPENDENT STUDY
Independent study and research; individual investigation of a problem in literature or a closely related topic may be arranged by a student and professor. 3 semester hours

GRMN 188, 288, 388, 488, 588 SPECIAL TOPICS IN GERMAN
Topics offered in response to student and faculty interest. 3 semester hours each

ITALIAN

ITAL 101, 102 ELEMENTARY ITALIAN I & II
A multiple approach to language learning and an introduction to Italian culture and civilization through graded readings is presented. Students are introduced to the fundamentals of Italian linguistics, and at the same time, drilled in diction, given elements of grammar, and rudiments of composition. 3 semester hours each

ITAL 103, 104 ELEMENTARY ITALIAN LAB I & II
These practice sessions emphasize the development of oral-aural competence. Through role-playing in a wide spectrum of real-life situations, students master proficiencies which enable them to react and respond naturally in current and accurate idiomatic Italian. These sessions integrate and expand upon materials concurrently studied in the elementary language courses. 1 semester hour each

ITAL 201, 202 INTERMEDIATE ITALIAN I & II
A thorough review of Italian grammar and linguistics done exclusively in Italian. This is an introduction to all elements of Italian culture and civilization through reading of graded literary texts and cultural material. 3 semester hours each

ITAL 301, 302 ITALIAN CONVERSATION AND COMPOSITION I & II
Intensive practice in oral and written expression. Topics for discussion and written assignments will be drawn from contemporary Italian and Italian-American culture. Prerequisites: ITAL 202 or consent of the instructor. 3 semester hours each

ITAL 304 ITALIAN CIVILIZATION AND CULTURE
An analysis of Italian civilization from pre-Roman times to the present. This course surveys the political, social, and historical events that have shaped Italian culture. Use of audiovisual materials and Italian films are part of the program. Prerequisite: ITAL 301 or its equivalent. 3 semester hours

ITAL 311, 312 TOPICS IN ITALIAN LITERATURE I & II
Reading and critical analysis of representative Italian writers. These courses focus on major genres, movements, and themes. Classroom discussions and short papers in Italian are required. Prerequisite: ITAL 301 or its equivalent. 3 semester hours each

ITAL 499 INDEPENDENT STUDY
Independent study and research; individual investigation of a problem in literature or a closely related topic may be arranged by a student and professor. 3 semester hours

ITAL 188, 288, 388, 488, 588 SPECIAL TOPICS IN ITALIAN
Topics offered in response to student and faculty interest. 3 semester hours each

JAPANESE

JAP 101, 102 ELEMENTARY JAPANESE I & II
A multiple approach to language learning and an introduction to Japanese culture and civilization through graded readings. Students are introduced to the fundamentals of Japanese linguistics and are drilled in diction, given elements of grammar, and rudiments of composition. 3 semester hours each

JAP 103, 104 ELEMENTARY JAPANESE LAB I & II
These practice sessions emphasize the development of oral-aural competence. These sessions integrate and expand upon materials concurrently studied in the elementary language courses. 1 semester hour each

JAP 201, 202 INTERMEDIATE JAPANESE I & II
A thorough review of Japanese grammar and linguistics done exclusively in Japanese. This is an introduction to all elements of Japanese culture and civilization through reading of graded literary texts and cultural material. 3 semester hours each

SPANISH

SPAN 101, 102 ELEMENTARY SPANISH I & II
This course introduces students to basic grammar and vocabulary through a variety of speaking, listening, reading, and writing activities. Recommended for students with little or no previous Spanish instruction. 3 semester hours each

SPAN 103, 104 ELEMENTARY SPANISH LAB I & II
These practice sessions emphasize the development of oral-aural competence. Through role-playing in a wide spectrum of real-life situations, students master proficiencies which enable them to react and respond naturally in current and accurate idiomatic Spanish. These sessions integrate and expand upon materials concurrently studied in the elementary language courses. 1 semester hour each

SPAN 201, 202 INTERMEDIATE SPANISH I & II
This course introduces students to more advanced grammar and vocabulary through a variety of speaking, listening, reading, and writing activities. Recommended for students with two or more years of high school Spanish. 3 semester hours each

SPAN 301, 302 SPANISH CONVERSATION AND COMPOSITION I & II
This course involves intensive practice in oral and written expression through readings, films, discussion topics, and writing assignments that reflect the diversity of cultures in present-day Spain and
Spanish students continue to refine their reading, writing, listening, and speaking skills. Advanced grammar and vocabulary topics are reviewed. Prerequisites: SPAN 202 or consent of the instructor. 3 semester hours each

SPAN 304 SPANISH CIVILIZATION AND CULTURE
An examination of Spanish civilization from its pre-historic roots to its present-day status as a modern European country composed of diverse cultural, linguistic, and ethnic communities. The course surveys the political, social, and historical events that have shaped Spanish culture, and provides opportunities to learn about the literature, art, music, and film of Spain. Students continue to refine their reading, writing, listening, and speaking skills. Prerequisites: SPAN 202 or consent of the instructor. 3 semester hours each

SPAN 305 LATIN AMERICAN CIVILIZATION AND CULTURE
A survey of the social, historical, and political currents in Latin America from pre-Columbian times to the present. The course deals with the quest for identity and the sense of orfandad and other legacies of Colonialism and Independence. Prerequisite: SPAN 202 or its equivalent. 3 semester hours

SPAN 309 INTRODUCTION TO HISPANIC LITERATURE
This course introduces students to the study of Hispanic literature. In addition to reading representative works in the Spanish language, students study literary concepts such as theme, discourse, figurative language, dialogue, and text. Students read works from the four major categories of literary production—narrative, poetry, drama, and essay—with special attention given to the ways in which categories of genre are both constructed and challenged. This course is strongly recommended for students majoring in or minoring in Spanish. All coursework and class discussions are done in Spanish. Prerequisite: SPAN 202 or by permission of the instructor. SPAN 304 or 305 recommended but not required. 3 semester hours each

SPAN 310 THE HISPANIC SHORT STORY
This course focuses on understanding and analyzing short prose forms by authors from Spain and Latin America. The stories feature an array of thematic and formal elements that include language, culture, religion, politics, gender, and economic conditions, while the studied authors represent a diversity of cultural, ethnic, and literary backgrounds. Students learn to analyze narrative techniques through theoretical and practical criticism of the genre while continuing to refine their reading, writing, listening, and speaking skills. Prerequisites: SPAN 302 or consent of the instructor. 3 semester hours each

SPAN 311 SPANISH LITERATURE BEFORE 1700
An introduction to the literature of Spain from its inception in the jarchas to 1700. Readings include selections from epic and lyric poetry, ballads, drama, and prose forms. Coursework focuses on the ability to read and to discuss literature critically. 3 semester hours

SPAN 312 SPANISH LITERATURE AFTER 1700
This course continues the exploration of Spanish literature from 1700 to the present with the writings of representative authors and movements including Romanticism, the Generation of '98, the Generation of '27, and the literature of post-Civil War Spain. Coursework emphasizes critical evaluation and appreciation of the Peninsular literary tradition. 3 semester hours

SPAN 313 LATIN AMERICAN LITERATURE, 1492–1810
This course surveys the major works of Latin American literature written between approximately 1492 and 1810. The course begins with an examination of the chronicles that document the first European encounters with the indigenous peoples of the Americas. Students read selections by major writers of the colonial period that feature the prominent themes of identity, class, race, gender, violence, miscegenation, and an emergent Latin American consciousness. These works are interpreted according to the artistic and ideological requirements of the Renaissance, baroque, and neoclassical periods. This course is required for students seeking secondary education certification in Spanish. Prerequisite: SPAN 302 or permission of instructor. 3 semester hours

SPAN 314 LATIN AMERICAN LITERATURE, 1810 TO THE PRESENT
This course surveys the major works of Latin American literature since 1810, when the first independent Latin American republics were founded. Students will learn the characteristics of the romantic, realist, naturalist, and modernist literary periods, and who the major exponents of these periods were. As the course moves further into the 20th century, students continue to read works of poetry, drama, essay, and narrative, and study the literary and commercial phenomenon known as the “Boom.” This section of the course focuses on the function of literature within contemporary society by contrasting the artistic and ideological objectives of the magical and social realist genres. This course is required for students seeking secondary education certification in Spanish. Prerequisite: SPAN 302 or permission of instructor. 3 semester hours each

SPAN 316 CERVANTES
A detailed discussion and analysis of the Quijote, with reference to the novelas ejemplares and the entremeses. 3 semester hours

SPAN 317 SPANISH DRAMA OF THE GOLDEN AGE
An introduction to the Golden Age Theater with special emphasis on the drama of Lope de Vega and the influence of his Arte nuevo de hacer comedias on other major dramatists, including Tirso de Molina, Ruiz de Alarcón and Calderón de la Barca. 3 semester hours each

SPAN 320 MODERN SPANISH DRAMA
The development of modern Spanish drama from Romanticism to the works of Paso, Sastre, and Buero Vallejo is taught. Given in alternate years. 3 semester hours each

SPAN 330 TOPICS IN LATIN AMERICAN LITERATURE
Topics vary but can include pre-Columbian works, early chronicles, and literature of the 19th and early 20th centuries. 3 semester hours each

SPAN 331 MODERN LATIN AMERICAN FICTION
This course introduces the student to modern Latin American fiction with particular emphasis on literature beginning with the 1940s. Novels as well as short fiction are read and analyzed. Writers such as García Márquez, Fuentes, Borges, Vargas Llosa, María Luisa Bombal, Isabel Allende, and others will be discussed. 3 semester hours each

SPAN 340 SPANISH, LATIN AMERICAN, AND LATINA WOMEN WRITERS
This course focuses on the role of women in the cultural production of Spain, Latin America, and the United States, and their historical marginalization from the literary canon and the public sphere. Through drama, poetry, and prose by Spanish, Latin American, and Latina writers, the class explores issues including the construction of gender, the public and private spheres, love and friendship, mother-daughter relationships, power relations, violence, migration, and poverty. 3 semester hours each

SPAN 405 PRACTICUM IN SPANISH
Students assist in a variety of nonprofit social and educational organizations and programs. A core component of this course consists of engaging the students’ language skills and specialized cultural knowledge. Off-campus assignments are combined with in-class discussion and reflection. Students may work with local or international organizations in Spanish-speaking countries. In addition to written assignments, students may be required to present their individual projects in a public forum. The course fulfills a culture distribution requirement for the major. Prerequisite: SPAN 302 or permission of instructor. 3 semester hours each

SPAN 406 INTERNSHIP IN SPANISH
Students pursue internship experiences in a range of governmental organizations, businesses, and nonprofit institutions. The internship must relate directly to the Hispanic world and Spanish must be the primary language used in the workplace. A minimum of 75 hours on site is required. Interns are solely responsible for providing adequate documentation (e.g., letter from supervisor, time sheets, and contract) as to the number of hours fulfilled and the duties performed. Students may be paid for their work at the partner institution. A research paper in Spanish focusing on an aspect of the internship is also required. Students must consult the supervising faculty member prior to their
internship in order to determine whether the internship fulfills the criteria for credit in this course. Depending on the nature of the internship, this course may fulfill a culture distribution requirement for the major. 3 semester hours

**SPAN 409 SENIOR SEMINAR**
Offered in fall semester only. 3 semester hours

**SPAN 499 INDEPENDENT STUDY**
Independent study and research; individual investigation of a problem in literature or a closely related topic may be arranged by a student and professor. 3 semester hours

**SPAN 188, 288, 388, 488, 588 SPECIAL TOPICS IN SPANISH**
Topics offered in response to student and faculty interest. 3 semester hours each

**GENERAL OFFERINGS**

**ML 330 CONTRASTIVE AND APPLIED LINGUISTICS**
This is a comparative overview of the linguistic structures of the major Germanic and Romance languages. Phonetics, semantics, and syntax across the languages are examined, and language use in other cultures are also considered. Special attention is given to using this knowledge in teaching modern languages. Prerequisite: Completion of two semesters of intermediate level language courses or its equivalent, or permission of the instructor. 3 semester hours

**MUSIC**

**MUS 021 GOSPEL CHOIR I**
A performance-based class focusing on traditional and contemporary gospel literature. Students perform several times a semester. Does not satisfy the humanities distribution requirement. Prerequisite: Permission of instructor. Students may enroll in the course up to three times. 0 semester hours

**MUS 031 WIDENER CHORALE I**
A performance-based class focusing on choral literature from the Renaissance period up to the present day. Students will perform at least once a semester. Does not satisfy the humanities distribution requirement. Prerequisite: Permission of instructor. Students may enroll in the course up to three times. 0 semester hours

**MUS 041 CHAMBER ENSEMBLE I**
A performance-based class focusing on chamber literature from the Baroque period up to the present day. Students are organized into groups according to ability and meet twice a week throughout the academic year. Performances are on campus. Does not satisfy the humanities distribution requirement. Prerequisite: Permission of instructor. Students may enroll in the course up to three times. 0 semester hours

**MUS 051 WIND ENSEMBLE I**
A performance-based class that focuses on contemporary American band literature. Students meet weekly throughout the academic year and perform on campus. Does not satisfy the humanities distribution requirement. Prerequisite: Permission of instructor. Students may enroll in the course up to three times. 0 semester hours

**MUS 061 JAZZ ENSEMBLE I**
A performance-based class that focuses on the classical jazz idiom. Students meet weekly throughout the academic year and perform on campus. Does not satisfy the humanities distribution requirement. Prerequisite: Permission of instructor. Students may enroll in the course up to three times. 0 semester hours

**MUS 101 HISTORY AND LITERATURE OF MUSIC I**
An introduction to the language of music and a survey of music in Western civilization from the Middle Ages through Bach. 3 semester hours

**MUS 102 HISTORY AND LITERATURE OF MUSIC II**
An introduction to the language of music and a survey of music in Western civilization from 1750 to the present. 3 semester hours

**MUS 105 CONCEPTS OF MUSIC**
This course surveys Western music from the medieval period up to the present day, as well as a limited number of non-Western music. The former is examined from an historical perspective; the latter, from a cultural perspective. Upon successful completion of the course, students will have the ability to critically evaluate a composition for stylistic content and historical characteristics. This course differs from MUS 101 and 102 in its subject matter, and in the substantial writing and listening components. Non-Western topics include Native American, Ghanaian, and Japanese music. Western music topics/composers include Gregorian chant, symphony, and 20th-century experiments; Bach, Vivaldi, Beethoven, Wagner, Stravinsky, and Glass. 3 semester hours

**MUS 109 AMERICA’S MUSIC**
Treatment of the music of the United States which reveals the diversity of America’s music from the early 17th century until the present. The factors that have contributed to the music’s growth including folk, sacred, and secular elements are discussed. 3 semester hours

**MUS 120 MUSIC THEORY**
This course serves as an introduction to music theory of the common practice period (1600–1900): scales, intervals, chords, rhythm, and melodies. Each concept is illustrated with practical examples that expose students to a wide variety of forms and styles including classical, pop, musical theater, film music, hymns, spirituals, folksongs, and children’s songs. Students will be provided with written, aural, and performance experiences. Does not meet the history general education requirement. 3 semester hours

**MUS 121 GOSPEL CHOIR II**
A continuation of MUS 021. Does not satisfy the humanities distribution requirement. Prerequisite: 3 semesters of MUS 021 and permission of instructor. 2 semester hours

**MUS 122 GOSPEL CHOIR III**
A continuation of MUS 121. Does not satisfy the humanities distribution requirement. Prerequisite: MUS 121 and permission of instructor. Students may enroll in the course up to four times. 0.5 semester hours

**MUS 131 WIDENER CHORALE II**
A continuation of MUS 031. Does not satisfy the humanities distribution requirement. Prerequisite: 3 semesters of MUS 031 and permission of instructor. 2 semester hours

**MUS 132 WIDENER CHORALE III**
A continuation of MUS 131. Does not satisfy the humanities distribution requirement. Prerequisite: MUS 131 and permission of instructor. Students may enroll in the course up to four times. 0.5 semester hours

**MUS 141 CHAMBER ENSEMBLE II**
A continuation of MUS 041. Does not satisfy the humanities distribution requirement. Prerequisite: 3 semesters of MUS 041 and permission of instructor. 2 semester hours

**MUS 142 CHAMBER ENSEMBLE III**
A continuation of MUS 141. Does not satisfy the humanities distribution requirement. Prerequisite: MUS 141 and permission of instructor. Students may enroll in the course up to four times. 0.5 semester hours

**MUS 151 WIND ENSEMBLE II**
A continuation of MUS 051. Does not satisfy the humanities distribution requirement. Prerequisite: 3 semesters of MUS 051 and permission of instructor. 2 semester hours

**MUS 152 WIND ENSEMBLE III**
A continuation of MUS 151. Does not satisfy the humanities distribution requirement. Prerequisite: MUS 151 and permission of instructor. Students may enroll in the course up to four times. 0.5 semester hours

**MUS 161 JAZZ ENSEMBLE II**
A continuation of MUS 061. Does not satisfy the humanities distribution requirement. Prerequisite: 3 semesters of MUS 061 and permission of instructor. 2 semester hours
MUS 162  JAZZ ENSEMBLE III
A continuation of MUS 161. Does not satisfy the humanities distribution requirement. Prerequisite: MUS 161 and permission of instructor. Students may enroll in the course up to four times. 0.5 semester hours

MUS 231  VOCAL STUDIO
Private vocal instruction. Does not satisfy the humanities distribution requirement. Corequisite: MUS 031, 131, or 132. Prerequisite: Permission of instructor. Students may enroll in the course up to eight times. 0.25 semester hours

MUS 241  STRING INSTRUMENT STUDIO
Private violin, viola, cello instruction. Does not satisfy the humanities distribution requirement. Corequisite: MUS 041, 141, or 142. Prerequisite: Permission of instructor. Students may enroll in the course up to eight times. 0.25 semester hours

MUS 242  KEYBOARD STUDIO
Private keyboard instruction. Does not satisfy the humanities distribution requirement. Corequisite: MUS 041, 141, or 142. Prerequisite: Permission of instructor. Students may enroll in the course up to eight times. 0.25 semester hours

MUS 251  WIND INSTRUMENT STUDIO
Private wind instrument instruction. Does not satisfy the humanities distribution requirement. Corequisite: MUS 051, 151, or 152. Prerequisite: Permission of instructor. Students may enroll in the course up to eight times. 0.25 semester hours

MUS 252  PERCUSSION STUDIO
Private percussion instruction. Does not satisfy the humanities distribution requirement. Corequisite: MUS 051, 151, or 152. Prerequisite: Permission of instructor. Students may enroll in the course up to eight semesters. 0.25 semester hours

MUS 306  MUSIC OF THE CLASSICAL PERIOD
This course examines music of the second half of the 18th century. Although the focus will be on the works of Wolfgang Amadeus Mozart, Joseph Haydn, and Ludwig van Beethoven, students will also look at the place of the musician in society, lesser-known composers, and the development of genres such as the string quartet, the symphony, and opera. 3 semester hours

MUS 307  MUSIC OF THE ROMANTIC ERA
The course examines Western European 19th-century music. Students study works by both well-known composers such as Schubert, Brahms, and Wagner, and lesser known ones such as Balakirev, Field, and Clara Schumann. Selected topics for discussion include the impact of Beethoven, the lied, keyboard works, symphonic traditions, and opera. 3 semester hours

MUS 308  MUSIC OF THE 20TH CENTURY
Developments in musical composition in the 20th century. Examination of styles and composers from impressionism to the electronic age. 3 semester hours

MUS 309  AMERICAN MUSIC: 1890–1980s (HONORS)
This honors course examines music in the United States from 1890 to the 1980s. Topics include music of the cultivated tradition, jazz, musicals, and various popular genres. 3 semester hours

MUS 371  POSTROMANTICISM: 1875–1915
An examination of the music of the postromantic period (1875–1915). Students focus on works by such composers as Bizet, Debussy, Franck, Mahler, Mascagni, Schoenberg, Strauss, and Wolf, with particular attention paid to the influence of Wagner and the role of text in generating sound and structure. 3 semester hours

MUS 391  20TH-CENTURY AMERICAN MUSICAL (HONORS)
The American musical is a distinctively American art form that took shape during the first half of the 20th century. Throughout the century, it developed and evolved, reflecting events and changes in American society and culture. This course considers selected American musicals through the lens of entertainment, identity, ethnicity, and genre. Using original literary texts as a point of departure, students examine the transformation of these works from play, novel, or short story to musical, and determine how music and lyrics serve, ignore, or contradict the dramatic themes and ideas. 3 semester hours

MUSIC STUDIO

MSTU 309  MUSICAL ASPECTS OF RECORDING
A course designed to develop a better understanding of recording technology and the ability to apply the acquired knowledge and techniques. Does not satisfy general education distribution requirement in the humanities. 3 semester hours

MSTU 499  INDEPENDENT STUDY
Independent study. Individual work in aspects of recording or music performance. 3 semester hours

NURSING

NURS 125  INTRODUCTION TO NURSING
This course is designed to introduce the student to the discipline of nursing in society. The course will be an overview of nursing history, nursing theories, ethics, and legal influences, with an opportunity to examine attitudes and beliefs about nursing. This course is designated as a writing-enriched course and a service learning course. Prerequisites: ENGL 101 or 103. 3 semester hours

NURS 216  NUTRITION IN HEALTH CARE
This course, taught by a registered dietician, is designed to increase the student’s knowledge of the basic principles of nutrition. The course content focuses on the normal nutritional needs of humans throughout the life cycle and the application of nutrition principles to promote health. The course assists students in assessing nutritional status and initiating nursing interventions to improve or maintain nutritional status and to promote wellness. Prerequisite: none. 3 semester hours

NURS 226/227  FOUNDATIONS OF NURSING PRACTICE WITH LAB
This course introduces scientific reasoning and selected theory and evidence based nursing interventions within the nursing process framework to meet the diverse and complex needs of individuals. Effective therapeutic communication and professional accountability and responsibility are emphasized. The course includes 28 hours of skills practice and testing in the campus laboratory. Prerequisites: Matriculated nursing student, successful completion of CHEM 105, 106 and BIOI 121, 122. Pre- or corequisites: BIOI 219, 220. 2 class hours and 2 laboratory hours weekly. 3 semester hours

NURS 230  CALCULATING WITH CONFIDENCE
The purpose of this course is to assist students to achieve an understanding of the processes that are the basis for the mathematical applications necessary to determine correct medication and fluid administration in nursing practice. Students will be guided toward developing their own style of problem solving that promotes personal understanding of the underlying concepts that are the basis of medication/fluid calculations. Sessions are highly interactive with students discovering the steps necessary for successful solutions as they work on progressively more complex problems. Prerequisite: Matriculated nursing student. 1 semester hour

NURS 299  INDEPENDENT STUDY
Individual investigation and analysis of a nursing topic in an area of special interest is undertaken. Reading, research, consultation, and discussion are required. Credit, scope, topic, and prerequisites are arranged individually with the faculty mentor. Open to freshmen and sophomore students.

NURS 350  CARE OF THE ADULT
This first clinical course introduces the student to care of the hospitalized adult in various states of illness. Utilizing the nursing process and nursing diagnoses as organizers, the health needs of individual clients are considered. Mental health concepts, therapeutic communication, developmental stages, gerontological considerations, and nutritional aspects are integrated both in theory and in clinical situations. The course provides the student with opportunities to learn
and demonstrate the nurse’s caregiver roles (provider of care, teacher, advocate, change agent, and communicator). Course includes 168 clinical hours. Prerequisite: Junior status. Pre- or corequisites: NURS 351 and NURS 352. 9 semester hours

NURS 351/353 HEALTH ASSESSMENT WITH LAB
In this course, students gain knowledge and develop skills of health assessment. The nurse’s role in health assessment is presented from a holistic perspective. Health assessment concepts and physical examination techniques are emphasized. Activities are designed to facilitate the learners’ acquisition of the theory and skills necessary to do a health assessment of the normal adult. Disease conditions are included as necessary for understanding the concepts of examination. The course includes didactic presentation and laboratory practice. Students are expected to participate in laboratory sessions as examiners and examinees. Course includes 28 hours in campus lab. Prerequisite: Junior status or registered nurse. 3 semester hours

NURS 352 PATHOPHYSIOLOGY AND PHARMACOLOGY
This course focuses on selected physiological alterations of the human body that are pathologic in nature. Possible causes of the alterations and physiological changes are discussed along with the physiological effects and responses. Basic pharmacology and appropriate pharmacological interventions are reviewed for each pathophysiological change discussed. Prerequisite: Junior status or registered nurse. 3 semester hours

NURS 357 NURSING PERSPECTIVES
This online course provides the entering registered nurse with the opportunity to explore professional nursing from the perspective of baccalaureate education. The course is designed to increase the learner's knowledge of the history, philosophy, and conceptual basis of professional nursing. The impact of current trends in health care on the client, the nurse, and the profession is also discussed. This course is designated as a writing enriched course. Prerequisite: Registered nurse. 3 semester hours

NURS 360 CARE OF THE CHILDBEARING FAMILY
This course focuses on the needs of the woman and her family system during the reproductive health cycle, and the health care of the neonate from conception through the neonatal period. Included in the course are current issues and trends in maternity-newborn health care and women’s health. Consideration is also given to legal, ethical, and cultural aspects of related health issues. Emphasis is placed on the role of the nurse as a caregiver in the hospital and community settings. The roles of the nurse as a member of a profession and as a beginning utilizing of research are included. Course includes 84 clinical hours. Prerequisite: Successful completion of NURS 350, 351/353, and 352. 6 semester hours

NURS 361 CARE OF THE CHILDREARING FAMILY
This course focuses upon the child, infancy through adolescence, within a family system. Content is presented to provide the student with the knowledge and skills needed to apply the nursing process in activities directed toward assisting in the health promotion and health restoration of children and adolescents. Students will provide care to children and adolescents in a variety of settings, including hospitals and primary care centers. Course includes 84 clinical hours. Prerequisite: Successful completion of NURS 350, 351/353, and 352. 6 semester hours

NURS 363 RESEARCH IN NURSING PRACTICE
This course is designed to promote a knowledgeable and enthusiastic interest in nursing research and to provide a foundation for the use of research findings as a basis for practice. It prepares the student to understand the language of science, the steps of the scientific research method, and to read, interpret, and evaluate selected nursing studies and appropriately determine the clinical relevance of study findings and their implications for nursing practice. This course is designated as a writing enriched course. Prerequisite: Successful completion of NURS 350 or 357. 3 semester hours

NURS 364 PSYCHIATRIC MENTAL HEALTH NURSING
This course builds upon learning activities included in the mental health integration in NURS 350 Care of the Adult. Content includes patterns of behavior related to coping/stress and alterations in cognition, sensory perceptions, and thought. Concepts of group process, family process, cultural/spiritual variations, and psychological theories are included. Clinical practice emphasizes the application of therapeutic communication. Course includes 56 clinical hours. Prerequisite: Successful completion of NURS 350, 351/353, and 352. 5 semester hours

NURS 370 CLINICAL ELECTIVE
This undergraduate elective provides a concentrated experience for nursing students to apply theoretical, conceptual, and psychomotor skills in a structured clinical medical and/or surgical inpatient environment and under the supervision of clinical faculty. The objectives of the course are achieved through the patient care assignments which students will assume and implement. Course includes 80 clinical hours. Prerequisites: Successful completion of NURS 350, 351/353, 352, 363, 364, and either 360 or 361. 1.5 semester hours

NURS 381H HEALTH POLICY: A NURSING PERSPECTIVE
This course examines the current health policy environment within the United States and the overarching effects of those policies on health care. Influences on health policy, as well as the process of policy development, are discussed within the context of the role of the health provider in the health policy arena. 3 semester hours

NURS 420H SENIOR HONORS PROJECT I
The Senior Honors Project is a two-semester effort. The first semester is devoted to planning the project with a faculty mentor. The student conducts extensive readings and study in a particular area of nursing practice. The student's project must demonstrate evidence of independent, abstract, analytic, and critical thinking. By invitation. 3 semester hours

NURS 430H SENIOR HONORS PROJECT II
The second semester of the senior honors project is devoted to implementing and presenting the project designed in the first semester. The student continues to conduct extensive readings and study in a particular area of nursing practice. A final paper and presentation are prepared describing the completed work. Presentation of the project is during Honors Week or on Student Project Day in the spring semester of the senior year. The student's project must demonstrate evidence of independent, abstract, analytic, and critical thinking. By invitation. 3 semester hours

NURS 450 CARE OF THE COMMUNITY
This course expands the student's view of the community as a client and teaches concepts and principles necessary to apply the nursing process to improve and maintain community health. Sociocultural, environmental, political, and economic factors influencing health and the delivery of health care are included, particularly as they impact on the developing family. The health of the community is viewed from the context of systems theory. The role of the nurse as change agent in the promotion of health is emphasized. An opportunity is provided to apply the concepts of community nursing practice in developing and presenting a health promotion program to a selected population. Course includes 28 clinical hours. Prerequisites: NURS 363, 364, and either 360 or 361. 3 semester hours

NURS 452 CONCEPTS AND ROLES IN PROFESSIONAL NURSING
This course requires students to synthesize experience and new knowledge of nursing roles and issues to develop professional attitudes and values and to prepare graduates to function effectively in the health care delivery system. Leadership and management roles and theories are differentiated, and related research is applied to professional nursing practice. Leadership content focuses on change process, legislative action, and legal and ethical issues. The management component places emphasis on planning, priority setting, human resource management, and budgeting. Concepts of personal, professional, and staff development are discussed and applied. The tools of technology and management systems are integrated throughout. This course is designated as a writing enriched course. Prerequisites: Successful completion of NURS 350, 364, and either 360 or 361. 3 semester hours
NURS 453  NURSING IN TODAY’S WORLD
This course focuses on multidimensional roles in nursing. In addition, the legislative process, legal and ethical issues, and their impact on the nurse, the consumer, and society are addressed. Issues of professional and personal development are discussed. Prerequisite: NURS 357. 3 semester hours

NURS 455  NURSE AS MANAGER
This course provides a beginning knowledge of the managerial role of the professional nurse with groups of clients and caregivers within a variety of health care settings. Management process, organizational theory, styles of leadership, change models, and conflict resolution are addressed. An independent clinical practicum is included to provide the student with an opportunity to observe and analyze these concepts within a health care setting. Prerequisite: NURS 357. 3 semester hours

NURS 456  COMMUNITY NURSING
This course focuses on the health care of the individual and the family in the home, and the application of the nursing process to population aggregates in the community. Experiences in the application of community health nursing concepts in a variety of community settings are provided. Course includes 84 clinical hours. Prerequisites: NURS 216, 351/353, 352, 357, 363, and all required liberal studies and science courses. Pre- or corequisites: NURS 453 and 455. 6 semester hours

NURS 458  NEW DIMENSIONS IN PROFESSIONAL NURSING PRACTICE
This course focuses on strengthening professional nursing practice through the integration of knowledge from the discipline of nursing and related areas. The clinical practicum provides the opportunity to use this knowledge as a basis for engaging in innovative and skilled nursing practice designed to address a range of health care needs of individuals and groups. This course is designated as a writing enriched course. Course includes 84, self-directed, independent clinical hours. Prerequisites: NURS 216, 351/353, 352, 357, 363, and all required liberal studies and science courses. Pre- or corequisites: NURS 453 and 455. 6 semester hours

NURS 460  COMMUNITY NURSING II
Within the context of community health, this course focuses on the nurse’s roles as advocate, teacher, and as coordinator of care of the patient and family coping with the illness experience. Using a systems approach for the analysis of family needs, adult complex care problems such as the nursing management of incontinence, immobility, intellectual impairment, dying/death, and family burden are emphasized at all levels of prevention. In addition, sociocultural, ethical, environmental, economic, and political factors influencing the delivery of health care in the community are addressed. Course includes 14 clinical hours. Prerequisites: NURS 360, 361, 363, 364, 450, and 452. Pre- or corequisite: NURS 462 and 472. 3 semester hours

NURS 462  CARE OF THE ADULT WITH COMPLEX PROBLEMS
The course provides students with opportunities to increase nursing knowledge, integrate evidence based findings, refine technical skills, develop proficiency in communication, and use the nursing process in providing culturally competent care to adult patients with complex acute and longterm health care needs. Prioritization of care through the use of clinical problem-solving and decision-making is discussed and applied. The clinical focus is on complex multisystem problems that involve individuals with diverse ethnic or cultural backgrounds in acute care settings. Opportunities for collaboration with other health care providers in the planning of care are provided. Demonstration of professional and ethical behaviors are stressed. Course includes 112 clinical hours. Prerequisites: NURS 360, 361, 363, 364, 450, and 452. Pre- or corequisites: NURS 460, 471, 472. 7 semester hours

NURS 471  CRITICAL THINKING AND CLINICAL DECISION MAKING I
This course is designed to develop clinical problem solving and decision-making skills in nursing students. Factors that influence clinical problem solving will be examined. Application of problem solving and critical thinking approaches will be facilitated through the use of simulated clinical situations and practice in standardized test taking. Prerequisites: All junior-year nursing courses. 1 semester hour

NURS 472  CRITICAL THINKING AND CLINICAL DECISION MAKING II
This course continues to develop clinical problem solving and decision-making skills in nursing students. Factors that influence clinical problem solving are examined. Application of problem solving and critical thinking approaches continue to be facilitated through the use of simulated clinical situations and practice in standardized test taking. This course requires students to achieve a score of 850 or greater on the Health Education Systems, Inc. (HESI) exit examination. Prerequisite: NURS 471. 1 semester hour

NURS 490  NURSING PRACTICUM
This intensive clinical experience provides an opportunity for students to gain knowledge, as well as apply and refine skills in the application of the nursing process to a selected patient population. Nurse preceptors from a variety of clinical agencies and the faculty collaborate to assist students to gain confidence through direct patient care opportunities and clinical conferences as they approach the transition to professional practitioner. Students are encouraged to be creative in writing personal objectives and with the help of the preceptor, develop experiences which will assist them in exploring career options available in professional nursing. Course includes 96 clinical hours. Prerequisites: NURS 460, 462, and 471. Corequisite: 472. 4 semester hours

NURS 499  INDEPENDENT STUDY
Individual investigation and analysis of a nursing problem in an area of special interest is undertaken. Reading, research, consultation, and discussion are required. Credit, scope, topic, and prerequisites are arranged individually.

NURS 188, 288, 388, 488  SPECIAL TOPICS IN NURSING
Particular topics such as health viewed through films, wellness workshops, women’s health issues, and health care technology are explored. These courses are nursing electives open to all university students. 3 semester hours each

OPERATIONS MANAGEMENT

OPM 352  OPERATIONS MANAGEMENT (FORMERLY MGT 352)
Production/operations management techniques are studied as applied to logistics problems. Topics include decision making, forecasting, capacity planning, linear programming, facility location, the transportation method, layout planning, information systems and operations, scheduling and aggregate planning, job-shop scheduling, and inventory control systems. Prerequisite: QA 251 and 252, and junior standing. 3 semester hours

OPM 375  GLOBAL OPERATIONS MANAGEMENT (FORMERLY MGT 442)
An organization’s decision to consider in favor of globalizing operations involves factors such as product, domestic/foreign market interplay, cost, technology transfer, and resource availability. Technological and scientific development also impact on recoverable resources. In addition, because many uncertainties enter in choosing a country for the site of globalizing operations, risk assessment is included in the decision-making process. The course focuses on issues of immediate concern for operational decision making in the new global environment. It examines the international aspects of quality, productivity, and strategy while addressing concerns of customers, employees, and shareholders. Prerequisite: MGT 365. Corequisite: OPM 352. 3 semester hours

OPM 380  INTRODUCTION TO MANAGEMENT SCIENCE (FORMERLY MGT 480)
The primary objective of this course is to introduce students to basic quantitative methods for managerial decision making. Topics include mathematical programming and linear, integer, and goal programming, advanced inventory control models, network theory, queueing models, Markov processes, simulation, and game theory. Computer applications play a basic role in this course. Prerequisite: MATH 117, MATH 118, and junior standing. 3 semester hours
PHILOSOPHY AND RELIGION

PHIL 105  INTRODUCTION TO LOGIC
A consideration of the forms of valid reasoning and argument with practice in detection of fallacies, including a survey of methods of deductive and inductive reasoning is undertaken. Examination of the concepts of validity and consistency, factual support, and probability with special emphasis on methods of verification and proof in various sciences and in daily life. No prerequisite. Given every semester. 3 semester hours

PHIL 115  PHILOSOPHICAL IDEAS
This introductory course offers readings in classical as well as modern sources. The emphasis is on social, political, ethical, epistemological, and metaphysical issues; the course includes consideration of questions raised by both oriental and Western systems. No prerequisite. Given every semester. 3 semester hours

PHIL 116  PHILOSOPHICAL IDEAS (HONORS)
This introductory honors course offers readings in classical as well as modern sources. The emphasis is on social, political, ethical, epistemological, and metaphysical issues; the course includes consideration of questions raised by both oriental and Western systems. No prerequisite. 3 semester hours

PHIL 120  SYMBOLIC LOGIC
This course is a rigorous examination of the theory and methods of symbolic logic. Students do problems and proofs in both sentential logic and first-order predicate logic, using truth tables, logic trees, and INT/ELIM systems of natural deduction. Special emphasis is placed on developing skills in translating sentences from natural language into symbolic notation. This course is especially useful for majors in computer science, mathematics, engineering, and any discipline in which knowledge of formal systems is important. 3 semester hours

PHIL 225  HISTORY OF ANCIENT AND MEDIEVAL PHILOSOPHY
This course covers Western philosophy from the pre-Socratics to the Schoolmen. The writers studied include Plato, Aristotle, St. Thomas Aquinas, St. Augustine, and Occam. No prerequisite. Given alternate years. 3 semester hours

PHIL 226  HISTORY OF MODERN PHILOSOPHY (16TH THROUGH 19TH CENTURY)
This course offers an examination of the major philosophers from the late 16th century to the end of the 19th century. The works of Descartes, Leibniz, Spinoza, Locke, Berkeley, Hume, Kant, Nietzsche, Marx, and Mill are examined. No prerequisite. Given alternate years. 3 semester hours

PHIL 251  SOCIAL AND POLITICAL PHILOSOPHY
This course considers such questions as: What is the proper function and organization of the state? What is justice? What is the proper relationship between society and the individual? Contributions of philosophers on these topics from ancient Greece to the present are discussed. No prerequisite. Given alternate years. 3 semester hours

PHIL 320  ADVANCED TOPICS IN LOGIC
A survey of key concepts in the metatheory of Symbolic Logic as well as an introduction to various alternative logics. The course will consider such topics as the nature of a formal system with emphasis on the distinction between Syntax and Semantics, account of the Soundness and Completeness of formal systems along with related concepts, Godel’s incompleteness theorem, and Epistemic, Modal, and Probabilistic Logics. Prerequisite: PHIL 120 or permission of the instructor. 3 semester hours

PHIL 350  ETHICS
This approach to philosophy is through the analysis of moral problems and the critical investigation of theories of moral characteristics in various cultures. Prerequisite: 3 semester hours of philosophy or permission of the instructor. 3 semester hours

PHIL 352  BUSINESS ETHICS
This course examines ethical issues in the business world. Topics covered include product safety, consumerism, affirmative action, ecological damage, and the relationship between morality and economics. This is a writing-enriched course. 3 semester hours

PHIL 360  PHILOSOPHY OF SEX AND LOVE (HONORS)
This course provides an examination of philosophical issues relating to romantic love and human sexuality. Readings include philosophical and literary selections from a variety of intellectual perspectives, including contemporary feminist thought, Christian thought, Classical Greek thought, psychoanalytic perspectives, Marxist thought, and modern analytic thought. This course satisfies Humanities general education distribution requirements. 3 semester hours

PHIL 378  PHILOSOPHY OF RELIGION
Course explores the nature and development of religion, with interpretation of its significance in contemporary cultures representing every part of the world. Prerequisite: 3 semester hours of philosophy or permission of the instructor. 3 semester hours

PHIL 379  PHILOSOPHY OF SCIENCE
An examination of the basic issues in scientific methodology, including discussion of the concepts of verification, confirmation, scientific explanation, and the data-theory relationship. Material for this course is relevant to a wide variety of sciences; primarily physics, biology, and psychology. Prerequisite: 3 semester hours of philosophy or permission of instructor. Given on demand. 3 semester hours

PHIL 380  AESTHETICS
An examination of fundamental philosophical questions about art. What is art? Are artistic standards objective? What is the significance of art? Problems and examples from painting, sculpture, literature, music, poetry, and architecture are discussed. Some familiarity with at least one of the arts is necessary. Prerequisite: 3 semester hours of philosophy or permission of instructor. Given spring semester. 3 semester hours

PHIL 381  HONORS AESTHETICS
This honors course considers a range of classic aesthetic theories, and a number of central problems in aesthetics. Among the issues discussed are the definition of art, the nature of aesthetic value and evaluation, the relationship between art and morality, and questions of style and form. The major aesthetic theories discussed are Formalism, Mimetic theory, and Expressionism. Various works of art, including examples from poetry, film, music, architecture, painting, sculpture, and photography will be used in discussing these theories and problems. This course satisfies the distribution requirements for humanities. 3 semester hours

PHIL 188, 288, 388, 488, 588

SPECIAL TOPICS IN PHILOSOPHY
Topics offered in response to student and faculty interest. 3 semester hours each
PHYSICAL EDUCATION

Each class is 0.5 credit. 1.0 credit is needed to graduate. No class may be repeated for credit.

PE 103  TENNIS
Introduces basic skills and techniques of tennis. Students practice serves, forehand drive, backhand drive, volley, grip, footwork, rules, and etiquette. 0.5 semester hours

PE 105  BEGINNING SWIMMING
Learn to swim. Covers basic skills of strokes and water safety for those who want to swim. 0.5 semester hours

PE 107A  PERSONAL FITNESS
All around cross-training includes running and lifting. Cardio-based training with heart monitors and circuit training. 0.5 semester hours

PE 107B  PERSONAL FITNESS
For Army ROTC students. Early morning (6 a.m.) physical training. 0.5 semester hours

PE 108  LIFEGUARD TRAINING
American Red Cross certified; CPR and AED training. Swim-ming prerequisite of 16 laps, crawl, and breast stroke. 0.5 semester hours

PE 109  VOLLEYBALL
Introduction to rules and technique. Basic instruction to advanced play of competitive volleyball. 0.5 semester hours

PE 112  GOLF
Learn to hit like Tiger Woods! Introduction to basic technique, rules, and etiquette of golf. 0.5 semester hours

PE 116  AEROBICS
Students exercise to music, improving cardiovascular health while burning off the calories. 0.5 semester hours

PE 118  WEIGHT TRAINING
Teaches students proper techniques of lifting and spotting. Provides information for putting together individual workout programs. 0.5 semester hours

PE 119  INTERMEDIATE SWIMMING
Stroke mechanics offered. Students learn to swim with ease and strength. 0.5 semester hours

PE 120  SCUBA
Be a certified scuba diver. Offered by Ultimate Scuba of Media, PA. Discounted cost is approximately $300. Help on campus. Contact Bob Piotti in Athletics. 0.5 semester hours

PE 122  SOCIAL DANCE
Eight weeks only. Two hour classes. Rule the floor with Jitterbug, Cha-Cha, Salsa, Swing, and more. 0.5 semester hours

PE 124  OUTDOOR SKILLS
Develop the confidence to take on wilderness adventure through ropes instruction, land navigation, and survival techniques. 0.5 semester hours

PE 128  BOXING
Learn the skills, techniques, and rules of the ring of this Olympic sport, including learning to punch. 0.5 semester hours

PE 129  YOGA
Students reduce stress, reaching a new level with mind-body harmony. 0.5 semester hours

PE 130  STREET-WISE SELF DEFENSE
Introduces and develops self defense techniques and practical applications for a variety of situations. Enhance awareness of personal safety. 0.5 semester hours

PE 131  TRIM AND SCULPT
Tone and trim to a better body. Personalized instruction through a variety of methods. 0.5 semester hours

PE 133  FITNESS FOR LIFE
Total body health. Nutrition, healthy lifestyle, cardiovascular fitness, weight training, circuits, and personal instruction are included. 0.5 semester hours

PE 134  BODY WELLNESS
Aerobics with a twist, including detailed instruction in nutrition, anatomy, and overall wellness. 0.5 semester hours

PE 136  HIP HOP DANCE
Students dance their way to health and fitness with instruction in modern hip hop techniques. 0.5 semester hours

PE 137  ROCK CLIMBING
Scale new heights on our award-winning indoor climbing wall. Basic instruction and belay certification offered. 0.5 semester hours

PE 138  T’AI CHI CHIH
Students learn the 19 moves of Moving Meditation to discover internal peace and harmony. This is not a martial art, but a globally practiced stress release. 0.5 semester hours

PE 140  SPINNING
Students ride our stationary pro model bikes to music for fitness, fun, and aerobic exercise. 0.5 semester hours

PE 141  INTRODUCTION TO BASKETBALL
Students learn the fundamentals and rules to play ball for life. 0.5 semester hours

PE 200  VARSITY SPORT PARTICIPATION
Fall sports register in the fall. Winter and Spring sports register in the spring. Participation in one full season of Varsity Sport satisfies the PE requirement for graduation. Check with the head coach and advisor for information. 1 semester hour

PE 206  ORGANIZATION AND ADMINISTRATION OF ATHLETIC COACHING
An introduction to athletic supervision, care of equipment, coaching leadership, athletic facilities, budgeting, and finances in athletics. Scheduling, game management, staff planning, and organization are also covered. Offered spring semester. 3 semester hours

PE 215  MEDICAL ASPECTS OF ATHLETIC COACHING AND INTERN TRAINING
The care and prevention of athletic injuries is studied, with special consideration to taping, first aid, weight training, physical fitness, nutrition, and body mechanics. Offered fall semester. 3 semester hours

PHYSICS

PHYS 108  INTRODUCTION TO ASTRONOMY
(SAME AS ESSC 108)
This course is designed for nonscience majors. The course provides an overview of the whole universe. Astronomy topics include understanding the planets, the Sun, stars and stellar evolution, the Milky Way, galaxies, and cosmology. The history of astronomy, telescopes, and the nature of light and gravity are also covered. Students are expected to have basic math and calculator skills. Evening observation sessions using the Widener Observatory are a required part of the course. No prerequisites. 3 hours lecture. 1 hour observing. 3 semester hours

PHYS 109  INTRODUCTION TO WEATHER AND CLIMATE
(SAME AS ESSC 109)
This course is designed to provide a descriptive survey of weather and climate for nonscience majors. Subjects include composition and structure of the atmosphere, solar and terrestrial radiation, temperature, atmospheric stability, forms of condensation and precipitation, pressure and wind systems, severe weather (thunderstorms, tornadoes, and hurricanes), weather analysis and forecasting methods, air pollution, the changing climate, world climates, and optical phenomena in the atmosphere. The laboratory component PHYS 119 is a separate course. Credit will not be granted for both this course and ENVR/PHYS 209 Meteorology. No prerequisites. 3 hours lecture. 3 semester hours

PHYS 111  PHYSICS OF DIGITAL CIRCUITS AND INFORMATION
This course covers the concepts of electric charge, current, voltage, power, heat, and the basic principles of digital circuits. In the lab, simple circuits such as gates, flip-flops, and counters are assembled and tested. 1 hour lecture. 2 hours lab. 2 semester hours
PHYS 118  ASTRONOMY LABORATORY
(SAME AS ESSC 118)
This laboratory course is designed to complement PHYS 108. Lab exercises include identifying moon features, optics, understanding star properties, spectral analysis, classification of galaxies, etc. The laboratories are mostly pen and paper exercises to be completed in class. This course fulfills the College of Arts and Sciences science laboratory requirement. Corequisite: PHYS 108. 2 hours laboratory. 1 semester hour

PHYS 119  WEATHER AND CLIMATE LABORATORY
(SAME AS ESSC 119)
This laboratory course is designed to complement PHYS 109. Students engage in exercises that involve analyses of daily weather cycles, employing instruments to determine atmospheric temperature and humidity, learning about the forms of condensation and precipitation, studies of global pressure and wind systems, analyses of surface and upper-air weather maps, understanding the nature of air pollution, and classification of world climates. This course fulfills the College of Arts and Sciences science laboratory requirement. Corequisite: PHYS 109. 2 hours laboratory. 1 semester hour

PHYS 120  CONCEPTUAL PHYSICS
An introductory course for students who do not plan to major in science. The central ideas, principles, and relationships of physics are applied to the study of the natural universe and the human environment. Many of the concepts discussed are investigated through activities. The concepts presented are developed and supported with minimal mathematics. Concepts discussed can include mechanics, properties of matter, heat, sound, electricity and magnetism, light, quantum mechanics, and atomic and nuclear physics. 3 semester hours

PHYS 130  CONCEPTS OF MUSIC AND SOUND
(SAME AS SCI 130)
An introductory course which describes the basic physical principles of sound production, propagation, and perception and applies these principles toward an understanding of music. Topics include oscillations, wave motion, sound intensity, the ear and hearing, elemental ingredients of music, musical instruments, scales, and harmony. The course is designed for the musician and nonmusician alike and assumes no previous background in music, physics, or college mathematics. PHYS 132 is not a corequisite. 3 semester hours

PHYS 132  CONCEPTS OF MUSIC AND SOUND LAB (SAME AS SCI 132)
This laboratory course is designed to complement PHYS 130. The course includes an introduction to oscillations, wave motion, sound production from strings and air columns, measurement of the speed of sound, interference of waves, the oscilloscope, amplifiers, and the technologies for recording and playing back music. 2 laboratory hours weekly. 1 semester hour.

PHYS 135  THE PHYSICS OF LIGHT (HONORS)
A conceptual study of the physics of light. Using minimal mathematics, the course will follow the path that the physical understanding of light has followed, from Newton’s times to the present. Lab exercises are designed to observe and study the fascinating properties of light. For non-science majors in the Honors Program. 3 hours lecture. 2 hours laboratory. 4 semester hours

PHYS 136  COSMOLOGIES ANCIENT AND MODERN (HONORS)
This course is for non-science majors in the Honors Program. The course investigates the evolution of humankind’s conception of the universe from ancient Greek times until the present. The ideas, theories, and discoveries of such renowned figures as Pythagoras, Aristotle, Aristarchus, Ptolemy, Copernicus, Kepler, Galileo, Mach, Newton, Hubble, and Einstein are examined and compared. While the emphasis of this course is on history, some scientific concepts such as gravity, general relativity, and the uncertainty principle are also discussed. Students will observe some of the more prominent celestial objects using the facilities of the Widener University Observatory. 3 semester hours

PHYS 141  COLLEGE PHYSICS I
This first course in a two-semester noncalculus-based physics sequence covers both classical and modern physics. Students are expected to be familiar with basic geometry and trigonometry, but need no background in calculus. Topics include classical mechanics, elementary fluids, wave motion, sound, thermodynamics, and kinetic theory. Students cannot claim credit for both the PHYS 141–142 sequence and the PHYS 231–232 sequence. Prerequisites: MATH 117. 3 hours lecture. 1 hour recitation. 6–8 three-hour labs. 5 semester hours

PHYS 142  COLLEGE PHYSICS II
This course is a continuation of PHYS 141. Topics include classical electromagnetic theory, DC and AC circuit theory, geometrical and physical optics, special relativity, quantum phenomena, an introduction to atomic, molecular, and solid state physics, and nuclear and elementary particle physics. Prerequisite: PHYS 141. 3 hours lecture. 1 hour recitation. 6–8 three-hour labs. 5 semester hours

The sequence PHYS 161, 162, 163, 164, 261 is ordinarily taken by engineering majors, while PHYS 231, 323 is ordinarily taken by science majors. The sequence PHYS 161, 162, 261 may be substituted for PHYS 231, 232 in those curricula requiring PHYS 231, 232.

PHYS 161  PHYSICS I
This first course of a two-semester calculus-based physics course for engineering and physics majors includes the following topics from classical physics: kinematics and dynamics of particles, particle systems and rigid bodies, simple harmonic motion, kinetic theory, heat, and thermodynamics. Corequisites: MATH 141 or MATH 131, PHYS 163. 3 hours lecture. 1 hour recitation. 3 semester hours

PHYS 162  PHYSICS II
This course is a continuation of PHYS 161. Topics include gravitation, classical electromagnetic theory including vector and scalar fields, DC and AC circuits, waves motion, and geometrical and physical optics. Prerequisite: PHYS 161. Corequisite: MATH 142 or MATH 132. 3 hours lecture. 1 hour recitation. 3 semester hours

PHYS 163  PHYSICS I LABORATORY
Lab experiments coordinated with topics in PHYS 161. Concurrent registration in PHYS 161 is required. 1 semester hour

PHYS 164  PHYSICS II LABORATORY
Lab experiments coordinated with topics in PHYS 162. Concurrent registration in PHYS 162 is required. 1 semester hour

PHYS 208  ASTRONOMY AND ASTROPHYSICS
(SAME AS ENVR 208 AND ESSC 208)
This course provides a calculus-based introduction to astronomy and astrophysics for all science and engineering students, including qualified freshmen. Topics include celestial mechanics, planets and the solar system, the Sun and energy generation, electromagnetic radiation, optics, stars and stellar evolution, the Milky Way and other galaxies, cosmology, and the start of the Universe. Evening observation sessions using the 16-inch telescope at the Widener Observatory are a required part of the course. Corequisite: MATH 131 or MATH 141. 3 hours lecture. 1 hour observing. 3 semester hours

PHYS 209  METEOROLOGY (SAME AS ESSC/ENVR 209)
This introductory course teaches an understanding of the Earth’s atmosphere, including the forces producing weather and climate, the dynamics of air movements, pressure changes, mass density, volume relationships, as applied to the changing atmosphere, and the production of hurricanes, tornadoes, and thunderstorms. Also studied are atmospheric structure, the effects produced by solar radiation on the Earth’s magnetic field—auroras, Van Allen belts, and similar phenomena. Meteorological instrumentation is studied in laboratory experiments designed to integrate theory with practice, together with the production of weather maps by students from empirical data recorded in the laboratory. This course is designed primarily for students majoring in science or engineering. 3 hours lecture. 2 hours laboratory. 4 semester hours

PHYS 231  UNIVERSITY PHYSICS I
The first course in a two-semester calculus-based physics sequence that covers both classical and modern physics designed for science
majors. Topics include classical mechanics, special theory of relativity, elementary fluids, thermodynamics and kinetic theory, wave motion, and sound. Prerequisite: MATH 142 or MATH 132. 3 hours lecture. 1.5 hours recitation. 6 three-hour labs. 5 semester hours

PHYS 232  UNIVERSITY PHYSICS II
Continuation of PHYS 231. Topics include the following: classical electromagnetic theory, DC and AC circuits, geometrical and physical optics, quantum phenomena, introduction to atomic, molecular, and solid state physics, and nuclear and elementary particle physics. Prerequisite: PHYS 231. 3 hours lecture. 1.5 hours recitation. 6 three-hour labs. 5 semester hours

PHYS 261  MODERN PHYSICS WITH APPLICATIONS
This course begins with an introduction to quantum physics, including the quantum theory of light, matter waves and the study of solutions to the Schrödinger equation for free electrons, the “particle in the box,” tunneling phenomena and atomic hydrogen. This is followed by a study of statistical physics and solids accompanied by a wide variety of applications. Applications include solid state electronic devices such as the diode, transistor, JFET, MOSFET, diode laser, solar cells, photodetectors, and CCDs. Prerequisite: PHYS 162 and MATH 133 or MATH 142. 3 hours lecture. 1 hour recitation. 3 semester hours

PHYS 263  PHYSICS III LAB
A laboratory course in classic modern physics to be taken concurrently with PHYS 261. Required for physics majors. Students not majoring or minoring in physics may elect to take this lab. 1 semester hour

PHYS 271  COMPUTATIONAL METHODS IN PHYSICS
This course is designed to introduce students to the use of the desktop computer programs Mathematica and Matlab in solving problems in physics. Topics include numerical integration and differentiation, algebraic manipulation, and graphical presentation. Prerequisites: PHYS 162 and 164. 3 hours of laboratory/lecture weekly. 1 semester hour.

PHYS 272  EXPERIMENTAL METHODS OF PHYSICS
This course is designed to introduce students to experimental design and techniques. Topics include electronics and circuit design, and signal detection and data collection instrumentation. Prerequisites: PHYS 162 and 164. 3 hours of laboratory/lecture weekly. 1 semester hour

PHYS 278  ASTRONOMY AND ASTROPHYSICS LABORATORY
This course provides a hands-on, practical laboratory experience in astrophysics. Students become proficient in planning to take data, using a telescope to obtain their own data, reducing their data using software packages, and presenting results. Some of the laboratory time is spent at the telescope taking the data. Topics include creating finding charts, observing standard stars, photometry of variable stars, photometry of visual binaries, color-magnitude relation of open clusters, surface brightness profile of globular clusters, and spectroscopy of bright stars. Students are expected to write up their results in the format of a journal including abstract, introduction, results, discussion, and bibliography. Prerequisite: PHYS 208. 1 semester hour

PHYS 309  MATHEMATICAL METHODS OF PHYSICS
A survey of mathematical techniques useful in physics, including vector analysis, matrices, coordinate transformations, Sturm-Liouville problems, Fourier series, Fourier transforms, boundary value problems, and complex variables. Prerequisite: MATH 241. 3 semester hours

PHYS 310  THEORETICAL ASTROPHYSICS
This course applies mathematical and physical techniques to astronomical objects and phenomena. Topics include stellar atmospheres and interiors, stellar evolution, supernova, degenerate stars, electromagnetic processes in space, galaxy formation, large scale structure, and cosmology. Computer projects are a required part of the course. Prerequisites: PHYS 162 or 232, PHYS 228, MATH 241 and CSCI 143 or equivalent. 4 hours class. 3 semester hours

PHYS 311  METHODS OF OBSERVATIONAL ASTRONOMY
This course provides an overview of the various instruments and techniques used by professional astronomers to obtain and reduce their data. Topics include telescope design, optical and infrared detectors, noise, radio telescopes, x-ray and gamma-ray detectors, neutrino detectors, CCD detectors and electronic imaging, speckle interferometry, photometry, and spectroscopy. A primary objective is the direct participation in astronomical research studying variable stars using the facilities of the Widener University Observatory. Students learn how to operate the 16-inch telescope and CCD camera, take calibration frames, and employ photometry to obtain stellar magnitudes. Sessions are run in part lecture, part laboratory/project format, and require some outside reading. Students also solve problems and exercises that involve analyses of astronomical data. Prerequisite: PHYS 228. 3 hours lecture/laboratory/projects. 3 semester hours

PHYS 312  ATMOSPHERIC PHYSICS
(SAME AS ENVR 312)
This course provides a mathematically rigorous investigation into the science of meteorology. Graphical analyses and calculus-based numerical problems are used throughout. Topics include radiation principles, heat, boundary layers, moisture, stability, cloud formation, precipitation, atmospheric dynamics, global circulation, air masses, fronts, cyclones, numerical weather prediction, thunderstorms, air pollution, and climate change. PHYS 209 is a prerequisite for environmental science majors and is recommended to be taken concurrently for physics majors. Corequisite: PHYS 162 or PHYS 232. 3 semester hours

PHYS 313  CLASSICAL MECHANICS
This course involves the rigorous study of Newtonian mechanics and its applications to the motion of particles, particle systems, and extended bodies. Vector calculus methods are used freely. Applications to astronomy and particle physics will be treated. Prerequisite: PHYS 162 or PHYS 232 and MATH 242. 3 hours lecture. 1 hour recitation weekly. 3 semester hours

PHYS 314  THERMODYNAMICS AND STATISTICAL MECHANICS
The laws of thermodynamics with applications to problems in chemical, electrical, and magnetic systems are studied. The course is an introduction to statistical methods for the study of properties of matter. Offered alternate years. Prerequisites: PHYS 162 or PHYS 232. Corequisite: MATH 242. 3 class hours. 3 semester hours

PHYS 315  ELECTROMAGNETIC THEORY
This course introduces electromagnetic theory. Topics include electric and magnetic fields, dielectric and magnetic materials, Maxwell’s field equations, displacement current, the Poynting theorem and electromagnetic waves, boundary-value problems, and radiation. Corequisite: PHYS 309; prerequisite: PHYS 162. 3 semester hours

PHYS 316  OPTICS AND WAVE MOTION
Studies include principles of geometrical and physical optics; interference; diffraction; polarization; the nature and characteristics of sound waves; and acoustics. Prerequisite: PHYS 162 or PHYS 232 and MATH 242. 3 class hours. 3 semester hours

PHYS 317  RELATIVITY AND ADVANCED TOPICS
Special Relativity Theory and elementary aspects of Einstein’s General Relativity Theory (geometrodynamics) are studied, with applications in electromagnetism, particle physics, and cosmology. Prerequisites: MATH 242, PHYS 261, and PHYS 309 or ENGR 315. 3 semester hours

PHYS 318  SOLID STATE PHYSICS
An introduction to solid state physics. Topics include crystal structures, mechanical properties, thermal properties, electrical and magnetic properties, and bond theory and its applications. Prerequisite: PHYS 261. 3 semester hours

PHYS 319  LASER PHYSICS
An introduction to the physics of lasers. Topics include classical theory of dispersion and absorption, rate equations, the density matrix, semi-classical radiation theory, laser oscillation characteristics,
multi-mode and transient oscillations, applications to specific laser systems, optical coherence, and laser applications. Prerequisites: PHYS 261 and MATH 241. 3 semester hours

PHYS 323 CLASSICAL MECHANICS LAB
This laboratory course involves selected advanced experiments in the area of Newtonian mechanics. Experiments and projects involve such topics as Kepler's laws of planetary motion, the frictional drag on falling bodies, resonance and damping in a harmonic oscillator, determination of the universal gravitational constant G using a Cavendish balance, numerical integration of galactic orbits, and Rutherford scattering of alpha particles. 3 hours laboratory. 1 semester hour

PHYS 326 OPTICS LAB
Selected experiments of an advanced nature in the area of optics. 3 hours laboratory. 1 semester hour

PHYS 333 ADVANCED TOPICS IN MECHANICS
Advanced methods of mechanics using Lagrange's equations and tensor algebra. Topics include mechanics of fluids, Lagrange's and Hamilton's equations, inertial and stress tensors, rotation of rigid bodies, perturbation theory, and special relativity. Applications to vibrating systems and fluids. Prerequisite: PHYS 313. 3 semester hours

PHYS 399 SPECIAL PROBLEMS
Individual investigation of a problem in physics includes laboratory work, computation, readings, and discussion as appropriate. Credit, score, topic, and prerequisites to be arranged individually. May be taken more than one semester. Credit open

PHYS 409 SENIOR PROJECT
This course involves original research carried out under the direction of a faculty member. Prerequisites: Senior standing and permission of the sponsoring faculty member. 4 semester hours

PHYS 413 QUANTUM MECHANICS
An introduction to quantum theory, beginning with the Schrödinger equation and the statistical interpretation of the wave function. One-dimensional applications include the infinite square well, finite square well, and harmonic oscillator; three-dimensional applications include the theory of angular momentum, central potentials, and the hydrogen atom; spin, identical particles, and the Pauli exclusion principle; and time-independent perturbation theory. Prerequisite: PHYS 261. 4 class hours. 4 semester hours

PHYS 414 ADVANCED TOPICS IN QUANTUM MECHANICS
A continuation of Quantum Mechanics. Topics include photon polarization, scattering, time-independent and time-dependent perturbation theory, interaction of the quantized radiation field with matter, spin, identical particles, second quantization, applications to atoms and molecules, and the Klein-Gordon and Dirac equations. Prerequisite: PHYS 413. 3 semester hours

PHYS 490 PHYSICS INTERNSHIP
This subject-related work experience or other activity is offered only upon special application from the student and a supervising faculty member. Approval must be obtained in advance from the physics faculty and requires a specific outline of: work to be done; the nature and extent of its academic relevance; the academic and special preparation of the student for the proposed activity. Written approval must be obtained from the employer/sponsor, and arrangements must be made for regular contact between the student and the supervising faculty member. The student is responsible for making all arrangements. A final report must be submitted upon completion of the activity, and a pass/fail grade will be assigned. The number of semester hours earned depends on the extent of the approved activity (12 semester hours correspond to full-time work for a semester). Prerequisites: Junior or senior standing, a GPA of at least 2.5 both in the major and cumulative in all courses and approval of both the academic advisor of the student and the head of the Science Division. 3–12 semester hours

PHYS 492 SENIOR SEMINAR
This senior seminar course focuses on a conceptual understanding of classical physics along with an introduction to current topics in physics and astrophysics. Each student reports on four current topics both orally and in written reports. Prerequisite: Senior standing in the physics major. 3 semester hours

PHYS 488 SPECIAL TOPICS IN PHYSICS
Topics offered in response to student and faculty interest. 3 semester hours each

PROFESSIONAL WRITING (FORMERLY COMMUNICATIONS)

PRWR 100 FUNDAMENTALS OF PROFESSIONAL WRITING (FORMERLY PRWR 260)
This writing-enriched course introduces students to the diverse field of professional writing. Through required assignments and in-class exercises, students learn, practice, and improve their writing skills for various professional media, as well as begin compiling their first professional portfolio. Writing forms include print and electronic material. This course provides the suggested (but not required) basis for other courses in professional writing. Does not satisfy general education distribution requirement in humanities. 3 semester hours

PRWR 110 FUNDAMENTALS OF JOURNALISM (FORMERLY PRWR 261)
This writing-enriched course provides lectures, discussion, and hands-on practice in techniques for planning, organizing, and delivering information through the written news media. Topics range from standard structures for ‘hard’ news to specialized structures for particular subject areas and media formats. This course also introduces the concept of journalism ‘beats’ or fields such as education, business, sports, religion, and family/home. Writing for online newspapers is introduced. Does not satisfy humanities distribution requirement. 3 semester hours

PRWR 215 EFFECTIVE COMMUNICATION
This writing-enriched course covers the theory and application of oral, written, and interactive (computer) communication techniques. Using topics relating to their own disciplines, students prepare appropriate forms of communication, including oral presentations, short reports, letters, memos, proposals, and a research report. Does not satisfy humanities distribution requirement. Prerequisite: ENGL 101 or 103. Open to students who have at least sophomore standing. 3 semester hours

PRWR 320 TECHNICAL WRITING (FORMERLY PRWR 220)
This writing-enriched course concentrates on developing strategies for organizing and reporting technical concepts and research in written documents. Assignments include reviewing and writing technical specifications, manuals, and other industrial publications. The major writing project is a long technical paper treating a subject in the student’s field of study. Does not satisfy general education distribution requirement in humanities. Prerequisite: ENGL 101 or 103. 3 semester hours

PRWR 330 MULTIMEDIA WRITING FOR BUSINESS AND TRAINING PROGRAMS (FORMERLY PRWR 230)
This writing-enriched course concentrates on developing the student’s ability to strategize and write training materials for business settings, with an emphasis on the text portions of videos, websites, and other multimedia. Although layout and design is covered, this course focuses on the text that underpins such training materials. Support materials, such as hardcopy training guides, are also addressed. This course does not cover the technical aspects of multimedia production. Does not satisfy general education distribution requirement in humanities. Prerequisite: ENGL 101 or 103. 3 semester hours

PRWR 340 COPYWRITING FOR ADVERTISING AND MARKETING (FORMERLY PRWR 240)
This writing-enriched course focuses on strategizing and writing advertisement copy for various print media, notably newspapers, magazines, and brochures. Elements of layout and design are covered, but technical production is not. Activities and assignments are
selected to familiarize students with preparing and critiquing advertisements targeting various audiences with specific messages on products and services. Students then apply this knowledge in preparing cohesive advertising pieces for a selected product or service. This course may have a service-learning component. Does not satisfy general education distribution requirement in humanities. Prerequisite: ENGL 101 or 103. 3 semester hours

PRWR 350 EDITING FOR PUBLICATIONS

(FORMERLY PRWR 250)

This writing-enriched course examines editing principles for print documents, notably newspaper and magazine articles. Elements of the editing process covered encompass both macro-editing (overall organization and content) and microediting (grammar, syntax, diction, and punctuation), along with steps in the publication process (proofreading, revising, layout, and design). Does not satisfy general education distribution requirement in humanities. Prerequisite: ENGL 101 or 103, and PRWR 100 or 110. 3 semester hours

PRWR 370 WRITING IN THE SCIENCES

(FORMERLY PRWR 270)

This writing-enriched course explores science communication by dissecting case studies and preparing documents that convey scientific and technological information; types vary from descriptive pieces and literature reviews to grant proposals and journal manuscripts. Audiences vary from research professionals to lay communities. Students select topics from their own fields and career interests to carry throughout the course projects Although designed for students in biology, psychology, and other sciences, students in English, professional writing, and journalism may also benefit from this course. Does not satisfy humanities distribution requirement. Prerequisite: ENGL 101 or 103. 3 semester hours

PRWR 380 WRITING FOR HEALTH AND MEDICINE

This writing-enriched course examines the types of writing particular to the fields of health and medicine. Students review and critique example documents from fields such as medicine, pharmacy, physical therapy, and nursing; as needed, background on particular specialties, such as writing for the pharmaceutical industry, is provided. This course is especially relevant to students interested in careers in any health care or medical field. Does not satisfy humanities distribution requirement. Prerequisite: ENGL 101 or 103. 3 semester hours

PRWR 395 SPECIAL TOPICS IN PROFESSIONAL WRITING AND JOURNALISM

This writing-enriched course rotates topics in response to student and faculty interest. Topics include sports journalism, writing for the nonprofit sector, environmental advocacy, international reporting, and documentary scripts. Does not satisfy humanities distribution requirement. Prerequisite: At least 12 credits in the PRWR sequence, plus permission of the instructor. May be taken more than once for credit only as part of a minor in professional writing or journalism. 3 semester hours

PRWR 405 WRITING PRACTICUM

Students work six to eight hours a week in supervised writing, editing, or publishing settings either on- or off-campus; these settings include University Relations, Alumni Relations, and Community Engagement; paid or unpaid positions in area corporations; as well as individualized work with faculty on defined projects such as newsletters for units of the university. Students attend a seminar once a week to exchange expertise; they also write a final report that integrates their experiences with material covered in other courses in this discipline. Does not satisfy humanities distribution requirement. Prerequisite: At least 12 credits in the PRWR sequence, plus permission of the instructor. 3 semester hours

PSYCHOLOGY

PSY 105 INTRODUCTION TO PSYCHOLOGY

A general introduction to scientific psychology, including biological psychology, development, learning, memory, psychological disorders, and social psychology. 3 semester hours

PSY 200 INDUSTRIAL/ORGANIZATIONAL PSYCHOLOGY

Relation of general psychology to aspects of business and industry including personnel selection, training, placement, supervision, and evaluation. Deals with organizational influences on behavior, job motivation and satisfaction, leadership, communication, problem solving, and research methods in I/O psychology. Prerequisite: PSY 105. 3 semester hours

PSY 201 EDUCATIONAL PSYCHOLOGY

(SAME AS ED 201)

This course is an introduction to the application of psychological theories and principles to educational settings. Topics include basic concepts in measurement and assessment, theories of learning and motivation, developmental characteristics of learners, individual differences, classroom management and teacher behavior, and diversity in the schools. Taken during the freshman or sophomore year, this course is a prerequisite for other education courses. All teacher candidates must participate in field experiences outside of regularly scheduled classes. This is a service learning course. Prerequisite: PSY 105. ED 101 is an additional corequisite or prerequisite for education students. 3 semester hours

PSY 202 CHILD DEVELOPMENT (SAME AS ED 202)

This course is an introduction to the application of child development theories, principles, and research to educational settings. Students are required to examine the physical, cognitive, and social-emotional developmental processes, as well as the family, culture, and community aspects of the child from conception through middle childhood. Students are also required to explore classroom methods for children in early intervention programs, preschool programs/child development centers, and elementary schools. This is a service-learning course. Taken during the freshman or sophomore year, this course is a prerequisite for other education courses. Education majors must receive a “B” or better in this course to remain in the Teacher Certification program. Students cannot receive credit for both PSY 211 (Human Growth and Development I) and PSY 202 (Child Development). Prerequisites: ED 101 and 102, PSY 105. 3 semester hours

PSY 203 CONSUMER BEHAVIOR AND ADVERTISING

An investigation of how psychological processes influence the marketing and consumption of products as well as the marketing and acceptance of ideas. Some of the topics include how advertising attempts to change attitudes and behavior, the influence of motivation theory on advertising content, how persuasion influences the adoption of products and political beliefs, and cultural differences in consumption patterns. Students may not get credit for both PSY 203 and MKT 400. Prerequisite: PSY 105. 3 semester hours

PSY 204 SOCIAL PSYCHOLOGY

The study of human behavior in a social setting, emphasizing types of research that may be used to study social behavior. Among topics covered are attitude formation and change, aggression and its opposite, helping behavior, factors that influence like and dislike of other people, group processes, conformity to a group, and leadership. This course may be used as an advanced elective in either psychology or sociology. Prerequisites: PSY 105 or SOC 105. Students should not take both PSY 204 and 210. 3 semester hours

PSY 205 PERSONALITY

Examples of four major types of contemporary personality theory are examined, contrasted, and compared. The role of theory and the relationship of research and evaluation strategies to theory are considered with examples from each of the theories studied, which include psychoanalytic, trait, phenomenological, and behavioral approaches to the study of personality. Prerequisite: PSY 105. 3 semester hours

PSY 206 PSYCHOLOGY OF WOMEN

(SAME AS WS 206)

The social construction of gender and its impact on the lives of women are examined in this course. This survey course is designed to cover a wide array of psychological topics as they relate to the female experience in American culture. The influence of historical, developmental, and social contexts on psychological experiences are
also examined. Prerequisite: PSY 105. 3 semester hours.

**PSY 210 CROSS-CULTURAL SOCIAL PSYCHOLOGY**

Cross-cultural social psychology deals with research done outside the United States and looks both for the universals of social behavior and for differences that might be brought about by culture. Differences between subcultures (e.g., groups defined by race, ethnicity, or social class) are also considered. Prerequisite: PSY 105. Students should not take both PSY 204 and 210. 3 semester hours

**PSY 211 HUMAN GROWTH AND DEVELOPMENT I**

This course studies human development from birth to adolescence. The course addresses the interplay of biological, intellectual, social, and emotional development. Students cannot receive credit for both PSY 211 (Human Growth and Development I) and PSY 202 (Child Development). Prerequisite: PSY 105. 3 semester hours

**PSY 212 HUMAN GROWTH AND DEVELOPMENT II**

This course focuses on human development from adolescence through adulthood and old age. It explores changing capacities and stresses throughout the human life span. Prerequisite: PSY 105. 3 semester hours

**PSY 213 EARLY ADOLESCENT PSYCHOLOGY**

Through the content and experiences in this course, candidates for middle level certification develop and apply the major concepts and theories associated with young adolescent development. Candidates become familiar with the research on adolescent development, motivation, and learning styles. The course is designed and taught in such a way that faculty and candidates are able to make explicit connections with middle level content areas, cognitive development, literacy, special education, and English language learning. Course content, competencies, and assessed outcomes are expected to be aligned with the PDE 430, and with the National Middle School Association (NMSA) performance standards for middle level teacher preparation. Prerequisites: PSY 105, ED 1211. 3 semester hours

**PSY 215 MULTICULTURAL PSYCHOLOGY**

This course is an introduction to the principles, theories, and applications of multiculturalism. Students are required to examine their own sense of self and others’ identity, beliefs and assumptions, and behaviors. Theories, research, and skills are explored so that students can acquire the necessary multicultural competencies for effective work with children and adolescents from diverse backgrounds (i.e., culture, race, ethnicity, class, & gender) in multicultural environments (i.e., public schools, community organizations). This is a service-learning course. Prerequisite: PSY 105. 3 semester hours

**PSY 216 COMMUNITY PSYCHOLOGY**

This course provides an introduction to the field of community psychology. Students learn about social issues, social institutions, and other settings that influence individuals, groups, and organizations. Principles, theories, and methods, and their application to community issues and settings are also explored. This is a service-learning course. Prerequisite: PSY 105. 3 semester hours

**PSY 225 ABNORMAL PSYCHOLOGY**

This course focuses on similarities and differences between normal and abnormal behavior, individual and environmental genesis and treatment of neurosis and psychosis, and relation of abnormality to social, religious, educational, and other aspects of living. Prerequisite: PSY 105. 3 semester hours

**PSY 230 COGNITION**

This course involves an in-depth analysis of human information processing. Topics include perception, attention, memory, and higher cognitive functions. Practical applications of cognitive principles are also discussed. Prerequisite: PSY 105. 3 semester hours

**PSY 235 FORENSIC PSYCHOLOGY**

Psychological research has much to offer to the fields of law and law enforcement. In this course, the potential impact and relevance of empirical psychological research to the criminal justice system is discussed in detail. Topics include basic methodological issues, lie detection, repressed memories, jury selection, line-up construction, eyewitness identification and testimony, courtroom persuasion, and group decision making. Prerequisites: PSY 105 and three additional credit hours in either psychology or criminal justice. 3 semester hours

**PSY 240 HEALTH PSYCHOLOGY**

This course studies the contributions of psychology to the promotion and maintenance of health, and to the prevention and treatment of illness. The course is concerned with understanding how behavior affects health, how health affects behavior, and how this knowledge is applied to diagnosis, prevention, treatment, and rehabilitation. Prerequisites: PSY 105. 3 semester hours

**PSY 245 GROUP DYNAMICS**

This advanced course in social psychology deals with behavior in group settings. Among topics covered are: one-to-one relationships in personal and work settings; group formation, structure and leadership; group functioning, conformity, and effective work groups. Prerequisites: PSY 105 or SOC 105. 3 semester hours

**PSY 250 EFFECTIVE INSTRUCTIONAL PRACTICES AND DELIVERY METHODS FOR ALL LEVELS OF SPECIAL EDUCATION SUPPORT (PRE-K–8)**

This course involves the foundations of special education. The purpose is four-fold: (1) examine historical background information related to the field of special education (legislation and litigation); (2) review components necessary for effective collaboration and consultation with parents, school personnel, and other professionals, and related multicultural issues/perspectives; (3) examine the nature and characteristics of various disabilities; and (4) discuss services and programs to help meet the educational, social, and/or personal goals for students with disabilities. This is achieved via case studies, large and small group class discussions, chapter readings, class assessments, and related exercises. Prerequisite: PSY 105. 3 semester hours

**PSY 255 INTRODUCTION TO SENSATION AND PERCEPTION**

This course deals with the physiological and psychological systems that allow us to see, hear, feel, smell, and taste the incredible range of stimuli we can perceive. Although intimately related, sensation and perception play two complimentary but different roles in how we interpret our world. Sensation is the process of sensing our environment through touch, taste, sight, sound, and smell. Perception is the way we interpret these sensations and therefore make sense of everything around us. The study of sensation and perception also involves an exploration of the constraints on our perceptual systems, since what we can’t perceive is often just as important (and often even more interesting) as what we can. Prerequisite: Psychology 105. 3 semester hours

**PSY 260 PARANORMAL PSYCHOLOGY**

This course involves a critical examination of beliefs in paranormal phenomena. Students read and discuss reports of ESP, human spontaneous combustion, near death experiences, and other parapsychological experiences. In addition, the psychological processes that underlie beliefs in other paranormal phenomena, such as aliens, ghosts, and “hidden” animals, are discussed. An emphasis is placed on understanding the errors in cognitive processes that can lead to erroneous beliefs. This course counts as an experimental advanced elective for psychology majors. Prerequisite: PSY 105. 3 semester hours

**PSY 265 EVOLUTIONARY PSYCHOLOGY**

This course examines a range of psychological phenomena within the framework of evolutionary psychology. The basic principles of evolution through natural selection are introduced, followed by their application to animal and human behavior. Topics include ethology, food preferences, short-term mating strategies, long-term mating strategies, parental investment, kinship, alliances, aggression, and dominance. An introduction to behavior genetics is also covered. Prerequisite: PSY 105. 3 semester hours

**PSY 270, 271 SUPERVISED RESEARCH TOPICS IN PSYCHOLOGY**

Students work with a faculty member in conducting a research project of mutual interest. Students are required to become familiar with
the scholarly literature relevant to the research project in addition to their active involvement with other aspects of the research, such as research design, construction of research materials, data collection, data analysis, and report writing. Regular meetings with the supervising faculty member and a final written report are required. This course may be taken for two semesters, six credits maximum. This course may be used to fulfill one psychology advanced elective based on the area of research. Prerequisite: PSY 105 and permission of instructor prior to registration. 3 semester hours

PSY 278 PROBLEM BEHAVIOR IN CHILDREN: ASSESSMENT AND THERAPY
(SAME AS ED 378)
An introduction to the principles, practices, and applications of applied behavior analysis and behavior modification in special education and counseling. Specifically, this course examines functional assessments, behavior/classroom management strategies, reinforcement techniques, token economies, and cognitive-behavior/social skills training designed for children and adolescents with emotional and behavioral disorders. Ethical issues associated with each type of individual and classroom intervention are also explored. As part of this course, students participate in field experiences outside of regularly scheduled class times, which enable them to relate the course content to teaching. Prerequisite: PSY 105. 3 semester hours

PSY 291 COGNITION WITH LABORATORY
This course involves an in-depth analysis of human information processing through lecture and structured lab activities. Topics include perception, attention, memory, and higher cognitive functions. Practical applications of cognitive principles are also discussed. Students design and conduct experiments in cognitive psychology and write laboratory reports. Psychology majors only. Students take either PSY 230 or PSY 291; they may not take both. Prerequisite: PSY 105. 4 semester hours

PSY 292 HUMAN GROWTH AND DEVELOPMENT I WITH LABORATORY
Through both lecture and structured lab activities, this course focuses on biosocial, cognitive, and psychosocial changes that occur from birth to adolescence. Topics introduced in lecture are further explored using a variety of qualitative and quantitative research methods used in the field. Psychology majors only. Students take either PSY 211 or PSY 292; they may not take both. Prerequisite: PSY 105. 4 semester hours

PSY 330 CURRENT ISSUES IN PSYCHOLOGY
This course involves a survey of a wide range of issues in psychology. Students read and discuss recent journal articles with two goals in mind. The first is to gain proficiency in reading journal articles and the second is to become knowledgeable of the cutting edge in psychology. In addition to articles provided by the course instructor, the students find additional sources and use them to supplement class discussions. Appropriate for non-psychology majors. Prerequisites: PSY 105 and junior standing. 3 semester hours

PSY 335 COMMUNITY-BASED YOUTH DEVELOPMENT INTERVENTION STRATEGIES AND PRACTICES: INTEGRATING CRIMINAL JUSTICE AND PSYCHOLOGICAL APPROACHES
(SAME AS CJ 335)
This is an interdisciplinary criminal justice and psychology year-long course on community intervention strategies and practices for at-risk youth. Theories and research that explain problem behaviors (i.e., mental health, substance abuse, delinquency) are reviewed, focusing on both the macro-structural factors emphasized in criminology and the micro-level perspective emphasized in psychology. Current intervention and prevention programs are examined and combined with field experience to train students in the principles of civic engagement, as well as in the mentoring and treatment of at-risk youth. Open to criminal justice or psychology majors with junior standing or above, or with instructor’s permission. 6 semester hours

PSY 355 BIOLOGICAL PSYCHOLOGY
An introduction to the anatomy, physiology, and pharmacology of the nervous system and its role in experience and behavior. Topics include the biological basis of perception, memory, motivation, emotion, and mental illness. Satisfies Science or Social Science distribution requirements. Prerequisite: PSY 105. 3 semester hours

PSY 368 HUMAN NEUROPSYCHOLOGY
Human neuropsychology is the branch of psychology that seeks to understand the relationship between neural structure and function. In this course, students learn about neural anatomy and physiology and the role these play in determining normal and disordered behaviors. Topics of discussion include the neuropsychology of perception, attention, memory, language, emotion, and action. Prerequisite: PSY 105. 3 semester hours

PSY 375 COUNSELING AND PSYCHOTHERAPY
Theories and methods used in therapeutic interventions with individuals are emphasized. In addition to readings and lectures the course includes practice at introductory-level skills, and class presentations. Prerequisites: PSY 105 and 325. 3 semester hours

PSY 376 PSYCHOLOGY/EDUCATIONAL TESTING
(SAME AS ED 376)
A critical examination of potentials and limitations of the presently used tests of intelligence, achievement, aptitude, interests, attitudes and personality. The use of tests in educational and psychological research, counseling and guidance, and industry is also examined. The development, use, and standardization of tests for evaluation and research is included. Prerequisite: PSY 105. 3 semester hours

PSY 377 HISTORY AND SYSTEMS OF PSYCHOLOGY
This course involves studying the historical and philosophical roots of contemporary systems of psychology. The systems discussed include structuralism, functionalism, behaviorism, Gestalt psychology, and psychoanalytic theory. These systems are examined historically, in terms of the individuals whose ideas contributed to their formulation, and philosophically, in terms of how each system resolves the problem of knowledge, the mind-body problem, and the issue of scientific verification and theory construction. Prerequisites: PSY 105 and one 200-level psychology course. 3 semester hours

PSY 381 STATISTICAL METHODS
Elementary statistics for majors outside of social science. Majors in psychology and other social sciences should take PSY 385 instead. Topics include the calculation and interpretation of methods for graphing data, descriptive statistics such as measures of central tendency and dispersion, correlation, and simple probability theory. Inferential statistics covered include t-tests, ANOVA, and non-parametric statistics such as chi-square. Note that students switching to a social science major are required to take PSY 385, although students may not receive credit for both PSY 385 and another statistical methods course such as PSY 381, QA 251, QA 252, GP 310, ENGR 111, ENGR 315, MATH 114, or MATH 373. This course may not be used to satisfy the social science general education requirement. Prerequisites: MATH 101 or equivalent or a satisfactory performance on the Mathematics Placement Test. 3 semester hours

PSY 385 STATISTICAL METHODS WITH LABORATORY FOR SOCIAL SCIENCES
(FORMERLY PSY 381/383)
Elementary statistics applied to psychology and other social sciences. Topics include the calculation and interpretation of methods for graphing data, descriptive statistics such as measures of central tendency and dispersion, correlation, and simple probability theory. Inferential statistics covered include t-tests, ANOVA, and non-parametric statistics such as chi-square. The use of the SPSS statistical computing package is covered in the laboratory. This course is required of majors in criminal justice, communication studies, psychology, and social work. Majors from other departments are welcome, although students may not receive credit for both PSY 385 and another statistical methods course such as PSY 381, QA 251, QA 252, GP 310, ENGR 111, ENGR 315, MATH 114, or MATH 373. This course may not be used to satisfy the social science general education requirement. Prerequisites: Basic computing skills, proficiency with the Windows computing environment, and the math requirement with a minimum grade of C (beginning in fall 2010). A minimum grade of C in PSY 381 will satisfy this prerequisite but will not satisfy the university math requirement. 4 semester hours
PSY 387  RESEARCH DESIGN AND LABORATORY FOR PSYCHOLOGY (FORMERLY PSY 382 AND PSY 384)

This course teaches the application of scientific method to the study of human behavior. Topics include the relationship between theory, hypotheses and empirical research, ethical considerations of research with humans, laboratory and field experimental methods, survey research, participant observation, and the use of documents and available data. The laboratory reinforces the theoretical issues covered in the lecture portion of the course. Students complete structured, hands-on exercises with experimental and non-experimental research methods in psychology. Students use the computer to analyze data, conduct literature reviews, and write research reports. Required of psychology majors. Prerequisite: minimum grade of C in PSY 385 for psychology majors. 4 semester hours.

PSY 394, 395  PSYCHOLOGY PRACTICUM

Students in this course gain valuable training and work experience in social service agencies or other appropriate settings. Placements include community mental-health centers, government agencies, rehabilitation centers, counseling and community centers, school systems, and other agencies in which students are able to exercise helping skills and put their knowledge of psychology into practice. Students are required to work 100 hours per three credits under the supervision of the field site supervisor at the placement, have regular meetings with their faculty practicum advisor, and participate in an evaluation meeting with the practicum/internship coordinator. Students are also required to become familiar with the scholarly literature relevant to their placement, and write a research paper integrating the research and fieldwork aspects of the practicum. Permission of practicum/internship coordinator is required prior to registration. Open only to juniors and seniors. Not available to students who are student-teaching. May be taken for one or two semesters. Students may take no more than 15 credits between PSY 394, PSY 395, and PSY 423. Prerequisites: PSY 105 and PSY 392, 3–6 semester hours

PSY 408, 410  SENIOR RESEARCH IN PSYCHOLOGY

Research in an area of the student’s special interest. Required of all majors in psychology. Prerequisites: PSY 385, PSY 387, and three advanced electives. Corequisite: PSY 330. 6 semester hours

PSY 423  PSYCHOLOGY INTERNSHIP

Students in this course gain extensive “real world” experience in social service agencies or other appropriate settings. Placements include community mental-health centers, government agencies, rehabilitation centers, counseling and community centers, school systems, and other agencies in which students are able apply the principles and tenets within the field of psychology. Students are required to work 100 hours per three credits under the supervision of the field site supervisor at the placement, have regular meetings with their faculty internship advisor, and participate in an evaluation meeting with the practicum/internship coordinator. Students are also required to demonstrate an understanding of the application of psychological practice in the context of broader social issues and write a paper integrating the psychological theories and research with fieldwork aspects of the internship. Permission of practicum/internship coordinator is required prior to registration. Open only to juniors and seniors. Not available to students who are student-teaching. Students may take no more than 15 credits between PSY 394, PSY 395, and PSY 423. Prerequisites: PSY 105, PSY 392, and PSY 394/395, 3–12 semester hours.

PSY 188, 288, 388, 488, 588

SPECIAL TOPICS IN PSYCHOLOGY

Topics offered in response to student and faculty interest. 3 semester hours each

QUANTITATIVE BUSINESS ANALYSIS

QA 251  ELEMENTARY STATISTICAL ANALYSIS (FORMERLY EC 251)

An introduction to the use of probability and inference for decision making in the administrative and social sciences. Topics include collection, measurement and presentation of data (descriptive statistics); probability distributions and expected values; and sample design and parameter estimation. Prerequisite: MATH 117 or its equivalent and sophomore standing. 3 semester hours

QA 252  INTERMEDIATE STATISTICAL ANALYSIS (FORMERLY EC 252)

More advanced use of probability and inference in the administrative and social sciences. Topics include hypothesis testing; multiple and nonlinear regression and correlation analysis; analysis of variance; chi-square, non-parametric tests; time-series analysis; and decision-making under uncertainty, including Bayesian analysis. Prerequisite: QA 251 and sophomore standing. 3 semester hours

READING

READING 105  CRITICAL READING AND STUDY STRATEGIES

In this course, students develop critical thinking skills and study techniques for reading college level texts. Teaching and learning activities focus on strategies for developing vocabulary, maximizing reading comprehension, enhancing note taking from texts and lectures, building organizational skills, applying test-taking strategies, and demonstrating flexibility in reading. Learning activities emphasize the direct application of these reading strategies to current coursework in the various disciplines. This is a developmental course for freshmen. Offered only in the fall. 3 semester hours

SCHOOL OF BUSINESS ADMINISTRATION HONORS

The following is a partial list of courses that have been offered. Other courses will continue to be offered. The courses are available to qualified students upon approval of Honors Committee Advisors.

SBAH 370  THE WORLD ECONOMY AND YOU

This course examines the political, social, cultural, and economic impact of globalization on employment opportunities. Various global issues such as the growing importance of outsourcing to China and India, the controversy surrounding labor rights and environmental issues, and the impact of trading blocs on the employment picture in the United States will be examined. 3 semester hours

SBAH 384A  LEGAL AND ETHICAL DILEMMAS IN INTERNATIONAL BUSINESS

This course provides an overview of international business law. The course considers the various approaches which different countries take with regard to contract, employment, corporate, and environmental law. It offers students the opportunity to do special research projects on legal and ethical dilemmas faced by the international business manager. Guest speakers from the business community have been invited to share their experiences in conducting international business transactions. 3 semester hours

SBAH 385  THE MODERN MANAGER: HOW TO CREATE COMPETITIVE ADVANTAGE

The course will provide insight into the development, integration, and implementation of competitive strategies. A case study approach will be used to highlight areas of management that cover such topics as decision analysis, competitive strategy, implementation, research and development, and international business. The seminar will be conducted by an executive who has climbed the corporate ladder from trainee to president. His experiences throughout his career will play an important role in demonstrating the competitive issues faced by the modern manager. 3 semester hours

SBAH 386  LEADERSHIP: MODERN CHALLENGES

This course examines the forces of change and their impact on the role of leadership today and tomorrow. Is leadership the primary determinant of success or failure? Students look at successful leaders of yesterday and today and examine their similarities and differences, and understand what was at the root of their success. Next, they examine the trust factor, charisma, and ego control. Students
conclude with what will be the substance of leadership for tomor-
row. 3 semester hours

SBAH 387  POPULATION AND 
THE BUSINESS ENVIRONMENT
This course is designed to provide students with an understanding of
population size, composition, and distribution. The impact of popu-
lation on the business environment is a focus of the course. Students
learn the importance of population issues for big business, small
business, and international business. 3 semester hours

SBAH 388  SPECIAL TOPICS—SEPTEMBER 11, 2001
This course focuses on the events surrounding September 11, 2001.
An attempt will be made to analyze the effects the terrorist attacks
have had and will have on the American legal system, American
businesses, and the American people. Through the use of an inter-
disciplinary approach, students and faculty debate, discuss, and
review as much of the evidence as possible. A conscious effort will
be made to bring outside experts into the classroom. 3 semester hours

SBAH 390  ETHICS IN THE PROFESSIONS
This course is designed for use in the Honors Program. It begins with
a study of the various theories and concepts that influence an indi-
vidual’s decision in situations where the question of ethics is
involved. The course attempts to give students a clearer understand-
ing of the teachings of several philosophers and economists who have
had an effect on the field of ethics. The students are then expected to
apply the teachings of the various individuals to ethical questions
from the fields of accounting, finance, management, economics,
social justice, and other areas. 3 semester hours

SBAH 391  MANAGEMENT OF TECHNOLOGY,
PRODUCTIVITY, AND CHANGE
This course covers the basic concepts, techniques, and strategies of
managing change in business organizations. Approaches for improv-
ing productivity and quality are discussed. Quantitative methods and
behavioral approaches are employed. Decisions regarding technol-
ogical development and acquisition are examined. 3 semester hours

SBAH 392  THE GREYING OF AMERICA: WHAT
DOES THE FUTURE HOLD?
This course analyzes in an interdisciplinary manner some of the
major issues and problems facing our society as the American popu-
lation ages over the next few decades. The material is drawn from the
disciplines of economics, demography, health administration,
law, nursing, philosophy, psychology, social work, and sociology.
Outside speakers from the various disciplines speak to the students
about their fields. 3 semester hours

SBAH 393  CORPORATE LAW AND SOCIAL POLICY—
ENRON’S BLACK BOX
This course provides an overview of corporate law and explores the
legal and social policy implications of the corporate form while
focusing on the Enron case. Topics include the structure of Enron, the
resulting controversial accounting methods, and management’s ulti-
mate responsibility. Care is taken to review the “off-balance-sheet”
entities and the calculation of earnings. Compliance with SEC report-
ing requirements, as well as the alleged “systemic conflicts of inter-
est,” are discussed. Attention is paid to bankruptcy issues, potential
investor fraud and resulting legal actions, employees’ rights, broker-
age house involvement, shredding of documents, and the responsi-
bility of the auditors. Political and social implications are also studied.
The method of instruction includes lecture, discussion, debate, presen-
tation, guest speakers, and possibly field trips. 3 semester hours

SBAH 395  TRENDS IN THE DESIGN & USE OF
INFORMATION TECHNOLOGIES
This course is composed of four areas. (1) It surveys the users and
uses of information technologies at home and work. (2) It focuses on
design principles for information systems which follow from human
abilities and failings. (3) It provides for discussion of the social
implications of technologies, especially ethical and privacy issues.
(4) It provides for discussion of future information technologies. 3
semester hours

SBAH 397  ECONOMICS OF HEALTH CARE
The course provides an opportunity for students to explore the major
problems confronting the U.S. health care system and evaluate reform
proposals designed to address those problems. 3 semester hours

SCIENCE

SCI 100  SCIENCE PROBLEM SOLVING
Problems drawn from various areas of science, engineering, and
daily life are used to help students develop strategies in problem
solving. Measurement tools, physical objects, demonstrations,
“manipulatives,” and the like are used to stress that the language of
science refers to the real world and not simply to textbook examples.
The course is taught in a laboratory setting to encourage free explo-
ration of problem solving strategies and learning from others.
Emphasis is placed on method and rationale rather than on correct
answers. Students learn to justify solutions to problems in clear, log-
ical language. One two-hour meeting weekly. Open to all students.
Offered only as pass/fail. It does not count toward satisfying the sci-
ence distribution requirement. 1 semester hour

SCI 107  I  FOOD SCIENCE
An introductory science course directed at meeting the needs and
interests of students enrolled in the School of Hospitality Management.
A foundation for understanding chemical reactions, partic-
ularly those pertinent to foods, will be developed by first examining
the fundamental nature of molecules, in particular organic molecules.
The molecular nature of foodstuffs and the most common and impor-
tant transformations these undergo will then be discussed. This course,
designed for nonscience majors, cannot be used to fulfill require-
ments for any major or minor in science. Students may not receive credit
for both SCI 107 and CHEM 100. 3 semester hours

SCI 125  INTRODUCTION TO FORENSIC SCIENCE
(SAME AS CHEM 125)
This course is designed for a general audience and is open to all stu-
dents who have interest in forensic science and how chemistry plays
an important role in this field. The course and its laboratory content
include the scope of forensic chemistry, types of physical evidence,
and techniques in the identification and analysis of physical evi-
dence. Laboratory experiments involve analyzing a simulated crime
scene using chemical techniques. The course is a required course for
the forensic chemistry concentration and it will be available as a sci-
cence distribution course with lab. Prerequisite: None. 2 hours lec-
ture. 2 hours laboratory. 3 semester hours

SCI 130  CONCEPTS OF MUSIC AND SOUND
(SAME AS PHYS 130)
An introductory course which describes the basic physical principles
of sound production, propagation, and perception and applies these
principles toward an understanding of music. Topics include oscilla-
tions, wave motion, sound intensity, the ear and hearing, elemental
ingredients of music, musical instruments, scales, and harmony. The
course is designed for the musician and nonmusician alike and
assumes no previous background in music, physics, or college math-
ematics. SCI 132 is not a corequisite. 3 semester hours

SCI 132  CONCEPTS OF MUSIC AND SOUND LAB
(SAME AS PHYS 132)
This laboratory course is designed to complement SCI 130. The course
includes an introduction to oscillations, wave motion, sound
production from strings and air columns, measurement of the speed
of sound, interference of waves, the oscilloscope, amplifiers, and
the technologies for recording and playing back music. 2 labora-
tory hours weekly. 1 semester hour

SCI 209  FOOD SCIENCE II
A continuation of SCI 107 Food Science I, which surveys the vari-
ous types of microorganisms. Emphasis is placed on the interactions
between microorganisms and man and the significance of microor-
ganisms in the food industry and food-borne diseases. This course,
designed for nonscience majors, cannot be used to fulfill require-
ments for any major or minor in science. Prerequisite: SCI 107 or
CHEM 105. Corequisite: SCI 210. 3 hours lecture. 3 semester hours
**SOCIAL WORK**

**SW 107 INTRODUCTION TO SOCIAL WORK AND SOCIAL WELFARE**
This introductory course provides students with a general understanding of the field of social work, its value base, and unique contributions to individuals, families, groups, and the community. It also provides students with an understanding of the history, purpose, and function of the social welfare system. A major focus of the course is to examine the broad application of social work practice in a variety of settings. Social work theory and methods, contemporary trends in the field, social policy, and the relationship between social work and other human service professions is explored. Special attention is given to the areas of diversity, oppression, and social justice. Students are also involved in a service learning project as one of the key assignments. 3 semester hours

**SW 206 HUMAN BEHAVIOR IN THE SOCIAL ENVIRONMENT I**
This is the first of a two-semester course covering the major theoretical perspectives for understanding human behavior in the social environment. The basic concepts of human development are explored using the life cycle as an organizing framework. Factors of human diversity such as race, gender, ethnicity, class status, sexual orientation, and physical ability are regularly addressed. During the first course, human behavior from conception through adolescence is examined and the developmental processes are explored and presented from the framework of the individual within the context of family, group, community, and organizations. Prerequisites: SW 107 and PSY 105. 3 semester hours

**SW 207 HUMAN BEHAVIOR IN THE SOCIAL ENVIRONMENT II**
This is the second of a two-semester course covering the major theoretical frameworks for understanding human behavior in the social environment. The course explores basic concepts of human development using a developmental life cycle framework as the organizing focus. Significant factors and influences of human diversity such as race, gender, ethnicity, class status, sexual orientation, gender identity, and physical ability are addressed. The course content focuses on late adolescence through late adulthood, including death, loss, and bereavement. The course focuses on the “person-in-environment” and “risk and resiliency” perspectives. These conceptual frameworks have implications for social work from micro- through macro-levels of practice. Prerequisites: PSY 105, SW 107, 206. 3 semester hours

**SW 225 WOMEN’S ISSUES ACROSS THE LIFE SPAN**
(SAME AS WS 225)
This course examines some of the dilemmas facing women at various points during the life cycle. The course begins with an exploration of the underpinnings of female gender identity in childhood and includes an examination of adolescence (issues such as teenage pregnancy, bulimia, abortion), early adulthood (marriage/choosing to be single, work/family stresses, day care, timing of motherhood, dual career marriages), middle adulthood (empty nest debate, adult daughter/mother relationships, caregiving, depression), and later adulthood (living alone/widowhood, poverty, sexuality, social networks). Attention is given to the role of families in intervention and service delivery. Prerequisite: SW 107. 3 semester hours

**SW 260 ADDICTIONS**
This course is designed to give students an overview of the dynamics of addiction. Students will explore the effects of alcohol and drug abuse on individuals and families. Topics include the disease concept, co-dependencies, theories of addiction and treatment, and the role of families in addiction behavior. Prerequisite: PSY 105. 3 semester hours

**SW 270 HUMAN SEXUALITY (SAME AS WS 270)**
This course explores human sexuality in three separate sections using a biopsychosocial approach. The first of these units addresses an overview of sexuality information and functioning. The second examines psychosocial issues as they exist within sexuality. Lastly, the manifestations of human sexuality as they occur within the social work context and subsequent practice issues are investigated. 3 semester hours

**SW 304 SOCIOCULTURAL DIMENSIONS OF SOCIAL WORK**
This course focuses on both the current and historical socio-political factors that influence deeply held American notions of cultural identity, Judeo-Christian values, normative belief systems, and socially constructed human differences through the lens of cultural diversity. Students have the opportunity to examine how the issues of race (whiteness and other-ness,) socio-economic class, gender, ethnicity, sexual orientation, and religion are deeply embedded within the structures of American society. Attention is given to how institutions, social policies, communities, and cross-cultural relationships are shaped by the evolution of institutionalized attitudes that are constructed to address human differences. Opportunities are provided for students to reflect upon and modify their personal and professional values regarding cultural diversity and how it impacts upon their clientele. To become effective human service professionals, it is important for students to define and employ culturally diverse frameworks in their social work (micro, macro, mezzo) practice. Prerequisites: SW 107, 206, 207. 3 semester hours

**SW 310 SOCIAL WORK WITH INDIVIDUALS, FAMILIES, AND GROUPS**
This course focuses upon generalist social work practice with individuals, families, and groups. The course provides students with the conceptual frameworks and techniques for a strengths-based approach to working with individuals, families, and groups. The purpose of the course is to develop skills in assessment and intervention with micro systems, with regard for the ways in which social work values and ethics inform decision-making and direct practice. Attention is given to understanding ethnic, racial, and cultural diversity with regard to individuals, families, and groups. Each student is required to participate in a service learning experience for 10 hours throughout the semester. This service learning experience allows the student the opportunity to practice interviewing skills in agency-based practice with a voluntary client. Students begin to evaluate their appropriateness for the social work profession through this service learning project. For social work majors only. Prerequisites: SW 107, 206, 207. 3 semester hours

**SW 315 SOCIAL WORK WITH COMMUNITIES AND ORGANIZATIONS**
This course prepares students for generalist social work practice with organizations and communities. This course builds upon the student's conceptual base and skills developed in SW 310 by applying the application to macro practice. Students develop a fundamental understanding of the knowledge, values, and skills in organizing, planning, and facilitating macro practice. This course also introduces students to community needs assessments, inter- and intra-agency collaboration, community organizing, and analyzing human service organizations. Students examine the influence of diversity on the helping process with regard to organizations and communities, and further develop their understanding of the role of social work values and ethics in the development of a professional identity. A major focus of this course is on the service-learning component in which students gain hands-on experience in the community. The objectives of the course are
achieved through field experiences, lecture, class presentations and discussions, guest speakers, reading and writing assignments, and experiential exercises. For social work majors only. Prerequisites: SW 107, 206, 207, 310. 3 semester hours

**SW 325 SOCIAL WELFARE POLICY ANALYSIS AND DEVELOPMENT**

This course defines and outlines basic concepts of social policy formulation and analysis, as well as implementation and program development. The course presents theoretical and practical frameworks for understanding social welfare policy analysis, implementation, and program development. Topics include policy analysis, social service organizational structures and delivery systems, social policy implementation, the budgetary process, program development, and the application of policy practice for generalist social work practice. Prerequisite: SW 107. 3 semester hours

**SW 335 GRIEF AND LOSS**

This course explores the issues of grief and loss using current theory and practice from social sciences and clinical practice. The focus is on the phases of bereavement from anticipatory grief to actual loss and reintegration. Grief and loss are examined as part of a lifelong process, including such events as death, divorce, miscarriage, and the loss of self-image. Prerequisites: SW 107. 3 semester hours

**SW 340 SOCIAL WORK WITH THE ELDERLY**

This course examines the conditions of and services for the aged. The course focuses upon the problems of aging in society, special groups of the aged, and the policies and programs directed at the reduction of such problems. Prerequisite: SW 107. 3 semester hours

**SW 401 SOCIAL WORK FIELD PRACTICUM I**

The senior practicum is a professional level field placement in a supervised social work setting for two days per week (16 hours) for one semester. Placement is arranged in accordance with the student’s interests and/or specialization. Emphasis is placed on the development of professional abilities and attitudes. Students also attend a weekly two-hour integrative seminar. May be taken on a pass/fail basis only. Prerequisite: permission of the instructor. Corequisites: SW 403. Social work majors only. 4 semester hours

**SW 402 SOCIAL WORK FIELD PRACTICUM II**

The final practicum continues the experience of SW 401. The student is expected to develop a strong professional commitment and identity and the skills necessary to function effectively as a beginning bachelor level professional social worker. These include the ability to develop and maintain a helping professional relationship with clients; the ability to understand social welfare policy as it relates to individual practice; the ability to identify and use existing resources; and the ability to function efficiently within a social work setting. May be taken on a pass/fail basis only. Prerequisite: permission of the instructor. Corequisites: SW 404. Social work majors only. 4 semester hours

**SW 403 SENIOR FIELD SEMINAR I**

This course provides students with an opportunity for the integration of classroom learning with field experience. The field placement enables students to directly apply social work knowledge and skills through their work with diverse client populations. The senior seminar is a collaborative learning experience between students and instructors in which the students’ field experiences are shared in various ways, including class discussions, role-plays, case presentations, and assignments. The seminar supports the students’ socialization into the social work profession and the ability to apply the strengths-based model of generalist social work practice in agency-based practice. The students grow in confidence through ongoing generalist social work practice experiences and move toward autonomy as beginning generalist social workers. Prerequisite: SW 401, 403, and permission of instructor. Corequisite: SW 402. Social work majors only. 2 semester hours

**SW 409 SENIOR RESEARCH PROJECT I**

This is the first course in the year-long senior research sequence. Students in small groups complete an original research project on a social work topic over the course of two-semesters. The research projects provide students with an opportunity to integrate their prior social work coursework in HBSE, policy, practice and research methods into a research study that contributes to the knowledge base of social work and the professional literature. Under faculty supervision, students design a research study, collect and analyze data, and prepare a journal article for publication in a social work journal. The students also give an oral presentation on their research projects to the social work faculty and students on Senior Research Day. Prerequisites: PSY 385; PSY 387 or SOC 382. For social work majors only. 3 semester hours

**SW 410 SENIOR RESEARCH PROJECT II**

This is the second course in the year-long senior research sequence. Students in small groups complete an original research project on a social work topic over the course of two-semesters. The research projects provide students with an opportunity to integrate their prior social work coursework in HBSE, policy, practice and research methods into a research study that contributes to the knowledge base of social work and the professional literature. Under faculty supervision, students design a research study, collect and analyze data, and prepare a journal article for publication in a social work journal. The students also give an oral presentation on their research projects to the social work faculty and students on Senior Research Day. Prerequisites: SW 409; PSY 385; PSY 387 or SOC 382. For social work majors only. 3 semester hours

**SOCIOLOGY**

**SOC 105 INTRODUCTION TO SOCIOLOGY**

A general introduction to sociology covering empirically based theoretical insights on social groups, culture, institutions, social organization, stratification, deviance, social movements, and social change. The development of a sociological perspective through the application of core concepts, such as the sociological imagination and the social construction of reality, formulates the basic framework for this course. 3 semester hours

**SOC 201 CRIMINOLOGY**

The study of crime in society—its origins and relationships to other institutions. These topics are discussed both historically and in the context of contemporary American society. The following theoretical perspectives are explored: biological, psychological, social disorganization, differential association, anomie, cultural and subcultural, functional, social conflict, labeling, and social control. Special topics include organized crime, white collar and corporate crime, victimless crime, and violence in society. Prerequisite: SOC 105. 3 semester hours

**SOC 203 SOCIOLOGY OF YOUTH (SAME AS WS 203)**

Youth, adolescence, young adulthood—different terms, but all imply a period in life when individuals face various new issues, physically and emotionally. In this course, students explore such issues in the context of social and cultural frameworks. Students consider how sociologists view a category termed “youth” and explore how social systems determine who is a part of this category. Students also look at the personal and social implications of “youth” and the intersections and impact of race, class, and gender on the experiences of youth. Students are introduced to the sociological constructionist approach to study the issues of youth in the United States, as well as comparative perspectives. Prerequisite: SOC 105. 3 semester hours.
SOC 204  SOCIAL PROBLEMS (SAME AS WS 204)
The study of social problems in the United States and other parts of the world. This course looks at political policy and the unrest that follows from inequality based on race, gender, class, sexual orientation, and subcultural group practices. Through film, readings, and discussion, the class focuses on the application of critical thinking to understand and address the effects of social differentiation on individuals and groups. Prerequisite: SOC 105 or permission of instructor. 3 semester hours

SOC 207  THE SOCIAL SELF
This sociologically framed social psychology course is taught from an interactionist perspective. It is concerned with the reciprocal manner in which individuals and small groups influence one another. The focus is on the interaction that takes place between people in a social setting. Readings and exercises provide a means to understand the self in relation to others, and to the society and culture in which we live. Prerequisite: SOC 105. 3 semester hours

SOC 215  THE FAMILY (SAME AS WS 215)
An examination of the family as the central institution with multicultural and cross-cultural differences. Areas of study include the organization of kinship systems, historical antecedents of family structure in the United States, gendered family roles, domestic violence, and the theoretical implications of societal change on intimacy patterns and family relations. Prerequisite: SOC 105. 3 semester hours

SOC 235  MINORITIES IN AMERICAN SOCIETY
The course investigates the role of race, ethnicity, and gender as the foundation of group relations and minority status in American society. The socio-historical process of creating subordinate groups and the nature of prejudice and discrimination are examined. The social, economic, and political consequences of the process for both minorities and the majority population are explored and related to issues of current interest. Prerequisite: SOC 105. 3 semester hours

SOC 240  GENDER AND INTERNATIONAL DEVELOPMENT (SAME AS WS 240)
This course focuses on how gender inequality is structured globally and how economic and political changes in the last half of the 20th century have impacted these inequalities. The specific regions of Latin America, Asia (Southeast, South Asia, China), Africa, and the Middle East will be compared with the United States. Some of the ways women have made changes in their countries and ultimately their own lives will also be examined. 3 semester hours

SOC 266  CLASS SOCIETY
This course covers the sociological and historical process of class formation in American society. Emphasis is on the styles of life characteristic of each class, on relationships among the classes, and on the consequences of inequality relative to the economic, political, and social opportunities available to individuals and groups. Prerequisite: SOC 105. 3 semester hours

SOC 275  AFRICAN AND AFRICAN AMERICAN WOMEN IN SOCIETY (SAME AS WS 275)
This course will explore some of the significant life experiences of women in sub-Saharan Africa (such as marriage, sex and sexuality, motherhood, being a wife, families, aging, widowhood, work, and urban vs. rural life), how the same type of experiences are lived by African American women, and how an understanding of culture and social organization helps us understand why African and African American women sometimes experience these similarly and sometimes differently. This is a writing-enriched course. 3 semester hours

SOC 307  SOCIAL DEVIANCE
A study of various forms of norm-violating behavior, including individual and group acts, using the societal reaction or interactionist perspective. Types of deviant behavior examined include sexual deviation, mental illness, juvenile gangs, alcoholism, and drug use. Prerequisite: SOC 105. 3 semester hours

SOC 310  MEDICAL SOCIOLOGY
The institution of medicine from a sociological and cultural perspective with special emphasis on the relationship of medicine to the value system of the society, the sociology of the profession, and the socialization of the professional. Prerequisite: SOC 105. 3 semester hours

SOC 311  PRACTICUM IN MEDICAL SOCIOLOGY
Enrollment is limited to students in the accelerated program in podiatry and optometry. Students select a field placement in a medical setting and complete field-related assignments. Prerequisite: SOC 105. Corequisite: SOC 310. 1 semester hour

SOC 315  POVERTY AND SOCIETY
When compared to most other advanced industrial capitalist nations, poverty rates in the United States are high, particularly in many of the nation’s urban centers. This course examines the causes and consequences of poverty. It explores the ways that social scientists define and measure poverty, examines the characteristics of poor Americans today, and considers a broad range of issues relating to poverty such as education, family structure, culture, economic restructuring, segregation, social movements, and public policy. To facilitate better comprehension and understanding of course content, there is a service learning component to the class that requires students to participate weekly in an organized activity with a community partner in Chester. Prerequisite: SOC 105. 3 semester hours

SOC 317  SOCIOLOGY OF SEX AND GENDER (SAME AS WS 317)
An examination of sex/gender systems in historical, cross-cultural, and contemporary societies. Identity politics and the interconnections between gender, race, class, ethnicity, and sexual orientation are core segments of this course. Feminist, socialist, liberal, and conservative thought on sex/gender issues are examined. Readings include classic early writings from the contemporary women’s movement and more recent gender analyses. Prerequisite: SOC 105. 3 semester hours

SOC 320  CITIES AND SOCIETY—ANCIENT TO THE EARLY 20TH CENTURY
This course traces Western urban development from Ancient Mesopotamia to the beginning of the 20th century. Cities are viewed as distinctive physical environments composed of architectural elements and spatial planning created by social and economic activity. We explore the forces that have shaped these environments and how the relationships between people have been influenced by these urban arrangements during different historical eras. Prerequisite: SOC 105. 3 semester hours

SOC 321  THE CONTEMPORARY CITY
The course focuses on how European and American cities have developed in the 20th century from the period of great industrial growth to the present. Included are the following topics: the emergence and development of urban sociological theory, the formation of western city planning, urban deconcentration and suburban development, problems of housing, poverty and homelessness, and the role of technology in shaping the urban environment. Prerequisite: SOC 105. 3 semester hours

SOC 325  UNIONS, LABOR, AND SOCIETY
Upon graduation, many Widener students will be employed in sectors of the economy in which unions play a significant role in determining wages, hours, and working conditions. This is especially true of the many students who will enter occupations in criminal justice, education, health care, and government services. This course examines the history, role, and function of labor unions in American society. It provides an overview of the development and growth of the labor movement, examines the process of collective bargaining and contract administration, and explores the current state of the labor movement. By the conclusion of the course, students are better prepared to enter into a unionized profession. Prerequisite: SOC 105. 3 semester hours

SOC 330  MODERN ORGANIZATIONS AND WORK
This course discusses the development of modern organizations and the nature of work roles within them. Topics include the impact of industrialization, Weber’s theory of bureaucracy, 19th-century industrial ideologies, the emergence of Taylorism and Human Relations, alienation and work, the development of participatory organizational models, leadership, power, informal group processes, the law regarding hiring and promotion, and organizations in the larger political economy. Prerequisite: SOC 105. 3 semester hours
SOC 335  DYNAMICS OF ORGANIZATIONS
Study concentrates on the structural and psychosocial processes in public and private sector organizations. It includes an examination of the following topics: authority and power, communication, decision making, leadership, and conflict and change. Prerequisite: SOC 105. 3 semester hours

SOC 355  SOCIAL THEORY
Major theoretical concepts in sociology are examined with emphasis on classical theorists Marx, Weber, and Durkheim. Other theorists, including more contemporary theorists, and specific theories such as Symbolic Interactionism, are covered. A look at post-modern critiques are also discussed. Required of sociology majors. Prerequisite: SOC 105, junior or senior standing, or permission of the instructor. 3 semester hours

SOC 367  SOCIAL MOVEMENTS AND SOCIAL CHANGE
(SAME AS WS 367)
This course explores the interaction between social movements and social change. The focus is on intentional change; on social movements as expressions of people’s interest in transforming social structures and cultural relations. Activism organized around class, race, gender, and other socially defined positions are examined through film, readings, and class discussion. Symbols, propaganda, music, marches, historical reference, and other forms of emotional involvement constitute part of the exploration of social movement organizations and the strategies they employ. Prerequisite: SOC 105. 3 semester hours

SOC 382  RESEARCH DESIGN FOR SOCIOLOGY
The course teaches the application of scientific method to the study of human behavior. Topics include the relationship between theory, hypotheses and empirical research, laboratory and field experimental methods, survey research, participant observation, and the use of documents and available data. After completing the course, students should be able to design scientifically valid research and also interpret and evaluate research conducted by others. Required of all majors in sociology. 3 semester hours

SOC 394, 395  SOCIOLOGY PRACTICUM
Students work 6–8 hours per week off campus in one of several social service agencies under the supervision of agency personnel. Students are also required to become familiar with the scholarly literature relevant to their placement, to participate in on-campus meetings, and to write a research paper integrating the research and fieldwork aspects of the practicum. Permission of instructor and the student’s advisor required prior to registration. Open only to juniors and seniors. Not available to students who are student-teaching. May be taken for one or two semesters. Six credits maximum. Prerequisite: SOC 105. 3–6 semester hours

SOC 405  SOCIOLOGY SEMINAR
This course is designed to apply sociological theory and analytical tools to contemporary social issues. The course will be structured as a seminar focusing on class discussion of readings and research assignments. Students will be responsible for presenting to the class comprehensive analyses of selected topics. This is a writing enriched course. Prerequisite: SOC 105 or permission of instructor. 3 semester hours

SOC 409, 410  SENIOR RESEARCH
Research in an area of the student’s special interest. Required of all majors in sociology. Prerequisites: PSY 381, SOC 382, and PSY 383. 6 semester hours

SOC 419  SENIOR RESEARCH
The SOC 409–410 sequence taken in one semester. Offered only in fall semester. Open only to December graduates or seniors who will be student teaching in the spring semester. 6 semester hours

SOC 423  SOCIOLOGY INTERNSHIP
This subject-related work experience or other activity occupies the principal time of the student for one semester. Offered only upon special application from the student and a sponsoring faculty member. Approval must be obtained in advance from the social science faculty and requires a specific outline of work to be done; the nature and extent of its academic relevance; student academic and other preparations qualifying the individual for the proposed activity; and methods to be used in evaluating the quality of the work. Students enrolling must make arrangements for regular contact with the supervising faculty member. Junior or senior standing and permission of the faculty advisor required. 6–12 semester hours

SOC 499  INDEPENDENT STUDY
Individual investigation of a topic in sociology. Readings, research, consultation, and discussion are required. Credit, scope, topic, and prerequisites to be arranged individually. May be taken more than one semester. 3 semester hours

SOC 188, 288, 388, 488, 588  SPECIAL TOPICS IN SOCIOLOGY
Topics offered in response to student and faculty interest. 3 semester hours each

SOCIAL SCIENCE

SPANISH

See courses listed under Modern Languages.

SPORT MANAGEMENT

SMGT 300  SPORT MANAGEMENT AND ADMINISTRATION
This course focuses on the management and administration of organizations in six different industries—professional sport teams, college and secondary school athletic departments, sport facilities, sport equipment manufacturing, recreation and fitness, and sport broadcasting and promotion. The focus of this industry studied is on how organizations in the industry plan and structure their organizations in an effort to meet their goals and competitively position themselves within the industry. Each organization will be studied in terms of its mission, planning, and decision-making processes, budgeting and allocation of resources, and policies governing the implementation of plans for human resources, production, marketing, and product development. These industries were chosen because they represent the diversity of sport management applications and thus offer the opportunity for comparative study. Case studies to be carried out by teams of students are included in the course. A variety of sports are included in the case studies reflecting both team and individual sports. Prerequisite: MGT 210. 3 semester hours

SMGT 340  SPORT SALES AND MARKETING
This course assesses and analyzes the markets for various sports organizations and businesses. It focuses on how to position a product in these markets and to create and design specific sales and promotion programs. Students prepare actual campaigns designed to achieve marketing and sales goals. Group projects and case studies are used. The objective of the course is to help the students develop skills that allow them to create marketing programs for various sports organizations including professional teams, athletic departments, and sports-related businesses. Prerequisite: MKT 180 or MKT 300. 3 semester hours

SMGT 410  THE ECONOMICS OF SPORTS
(SAME AS EC 316)
This course is a microeconomic analysis of the various markets that encompass the sports industry. The contemporary economic issues in professional and college sports are examined. Such topics as the sports industry, market structure and performance, the market for franchises, rival leagues, barriers to entry and expansion are analyzed. The various behaviors in the markets such as cooperation, collusion, player compensation, labor unions, strikes, and lockouts are discussed. Various public policy issues such as antitrust, subsidies of
new stadiums, and inducements by city and states to keep or attract teams are covered. Prerequisite: EC 202. 3 semester hours

SMGT 415 THE ATHLETE AND FAN: THE CREATION OF BUSINESS PRODUCTS AND SERVICES
The industries that have grown up around the business of sports have as their primary focus one or more of the following two constituencies: the athlete (whether child, amateur, or elite) and the fan or spectator. It is for these two participants in the sport process that the business of sport has created their products and services. Why people participate in sport and why they watch is crucial to the sport industry. Without such an awareness and understanding they would not be able to identify and create the products and services that fans both need and want. Such knowledge can only help to enhance the ability to meet and grow the needs of the sport industry. The perceptions, cognitions, motives and behavior of athletes and fans and the business opportunities that they present are the focus of this course. Prerequisite: MGT 210 and junior standing. 3 semester hours

SMGT 451 SEMINAR IN SPORT MANAGEMENT
An integrative course designed for Sport Management Option students to focus on contemporary issues in management theory and practice with reference to sport management. Class discussions and research projects examine key areas of concern through an interdisciplinary framework of managerial, economic, and social values. Prerequisites: Senior standing and completion of all School of Business Administration core courses except MGT 452. 3 semester hours

SMGT 498 SPORT MANAGEMENT INTERNSHIP
This is a course designed for the Sport Management Option students in order to provide opportunities to gain practical experience by applying their knowledge gained through the classwork in an actual sport management environment. Students work on projects developed with industry partners and prepare reports on these experiences with their academic and industry supervisors. Prerequisite: senior standing. NOTE: This course can only be taken pass/fail as a free elective. 3 semester hours

THEATER

THTR 021 THEATER FOR YOUNG AUDIENCES I
In this course, students assess the suitability of, adapt, and develop material from stories, tales, and original literature into theatrical presentations. Emphasis is on ensemble acting and improvisational skills. Students rehearse, develop educational materials, and perform for local schools. Does not satisfy the humanities distribution requirement. Prerequisite: Permission of instructor. Students may enroll in the course up to three times. 0 credit hours

THTR 103 THEATER ARTS WORKSHOP
Designed to increase students’ awareness of the elements of theater and of the relationship of these elements to life, this course introduces students to the appreciation of and creation of good theater. Theater is viewed as a synthesis of a variety of skills. Fifteen hours of work on an actual theater production is required. Does not satisfy general education distribution requirements in humanities. 3 semester hours

THTR 104 ELEMENTS OF THEATER PRODUCTION
This is an intensive study of selected works by three playwrights of the modern theater (e.g. Chekhov, Shaw, and O’Neill) from the viewpoint of actual theatrical production. Following an orientation analysis of all of the required plays, students select one particular play for an intensive study emphasizing their particular area of interest in theater production. Each study, under the professional supervision of the instructor, is developed from initial selection of play to actual performance capability. Limited to fifteen students in seminar-type class. Does not satisfy general education distribution requirements in humanities. 3 semester hours

THTR 105 STAGECRAFT WORKSHOP
The purpose of the course is to introduce the student of theater, a many-faceted art, to the aesthetic as well as practical importance of the scenery, properties, light, etc. as the background for the play. Subject matter includes the techniques of designing, constructing and painting scenery; the methods of stage lighting; and the various types of settings (realistic, naturalistic, expressionistic, etc.) as exemplified by settings used in famous productions. Fifteen hours of work on an actual theater production is required. Does not satisfy general education distribution requirements in humanities. 3 semester hours

THTR 106 INTRODUCTION TO ACTING
An introduction to the basic elements of character study, character development, and scene study, and to the relationship between the rehearsal process, and the on-stage action. Students will work on improvisation and monologues and perform theater exercises. The plays to be performed by Theatre Widener in any given semester may provide the texts for the course. Does not satisfy general education distribution requirements in humanities. 3 semester hours

THTR 121 THEATER FOR YOUNG AUDIENCES II
A continuation of THTR 021. Does not satisfy the humanities distribution requirement. Prerequisite: Permission of instructor and three semesters of THTR 021. 2 semester hours

THTR 122 THEATER FOR YOUNG AUDIENCES III
A continuation of THTR 121. Does not satisfy the humanities distribution requirement. Prerequisite: THTR 121 and permission of instructor. Students may enroll in the course up to four times. 0.5 semester hours

WOMEN’S STUDIES

WS 101 INTRODUCTION TO WOMEN’S STUDIES
This course focuses on the experiences of women and the significance of gender from an interdisciplinary and multicultural perspective. It explores the extent to which gender, as well as other social characteristics such as race, class, and sexual orientation, affect access to opportunity, power, and resources. It also examines the contributions of women to society and to social change. Satisfies distribution requirement. 3 semester hours

WS 104 WOMEN IN THE WESTERN TRADITION (SAME AS HIST 104)
This course examines Western society’s attitudes toward women and how these attitudes shaped women’s participation in the social, political, economic, and cultural development of the Western world from ancient times to the present. A special effort is made to use primary source material in the course readings. 3 semester hours

WS 130 LITERATURE OF THE NON-WESTERN WORLD (SAME AS HUM 200 AND ENGL 130)
Students read works by major writers from Japan, China, India, African nations, and other cultures. This course includes works by writers such as Basho, Firdausi, Confucius, Li Po, Motokiyo, and Mushima. In addition, students study selections from The Koran and The Bhagavad Gita and a number of Japanese Noh plays. 3 semester hours

WS 146 WOMEN WRITERS: 1800 TO THE PRESENT (SAME AS ENGL 146)
This course examines the contributions of women in both fiction (the novel and the short story) and poetry in the 19th and 20th centuries. Some of the authors studied include Jane Austen, Emily Dickinson, Jean Rhys, and Virginia Woolf. The class emphasizes both the singular perspectives each writer brings to her work, as well as each author’s perspectives on the role of women in her particular era. 3 semester hours

WS 147 LITERATURE OF THE AMERICAN MINORITY EXPERIENCE (SAME AS ENGL 147)
America is often called a great melting pot, yet many voices are often ignored or marginalized because they are not the voices of majority culture. In this class, students examine significant works from African Americans, Asian Americans, Chicano/as, Native Americans, and others. Writers to be studied include Zora Neale Hurston, June Jordan, Maxine Hong Kingston, M. Scott Momaday, Simon Ortiz, and Alberto Rios. 3 semester hours
WS 203       SOCIOLOGY OF YOUTH (SAME AS SOC 203)
Youth, adolescence, young adulthood—different terms, but all imply a period in life when individuals face various new issues, physically and emotionally. In this course, students explore such issues in the context of social and cultural frameworks. Students consider how sociologists view a category termed “youth” and explore how social systems determine who is a part of this category. Students also look at the personal and social implications of “youth” and the intersections and impact of race, class, and gender on the experiences of youth. Students are introduced to the social constructionist approach to study the issues of youth in the United States, as well as comparative perspectives. Prerequisite: SOC 105. 3 semester hours

WS 204       SOCIAL PROBLEMS (SAME AS SOC 204)
The study of social problems in the United States and other parts of the world. This course looks at political policy and the unrest that follows from inequality based on race, gender, class, sexual orientation, and subcultural group practices. Through film, readings, and discussion, the class focuses on the application of critical thinking to understand and address the effects of social differentiation on individuals and groups. Prerequisite: SOC 105 or permission of instructor. 3 semester hours

WS 205       HUMAN SEXUALITY IN CROSS-CULTURAL CONTEXT (SAME AS ANTH 205)
This course concerns ideas of human sexuality and to a lesser extent, gender, in a cross-cultural context. Students study the human brain and hormonal system to discover what about sexuality and gender are biologically programmed. Once that is established, students look at sexuality as it is understood in a number of cultures, including our own. Topics include marriage systems of different types and how they regulate sex, what different cultures define as customary or “normal” sexual practice, and what are regarded as abnormal, sexual custom versus sexual practice, and sexual taboos and how taboos reflect masculinity, femininity, and other culturally defined sexual orientations. 3 semester hours

WS 206       PSYCHOLOGY OF WOMEN (SAME AS PSY 206)
The social construction of gender and its impact on the lives of women are examined in this course. This survey course is designed to cover a wide array of psychological topics as they relate to the female experience in American culture. The influence of historical, developmental, and social contexts on psychological experiences is also examined. Prerequisite: PSY 105. 3 semester hours

WS 215       THE FAMILY (SAME AS SOC 215)
An examination of the family as a social institution with multicultural and cross-cultural differences. Areas of study include the organization of kinship systems, historical antecedents of family structure in the United States, gendered family roles, domestic violence, and the theoretical implications of societal change on intimacy patterns and family relations. This is a writing enriched course. Prerequisite: SOC 105. 3 semester hours

WS 225       WOMEN’S ISSUES ACROSS THE LIFE SPAN (SAME AS SW 225)
This course examines some of the dilemmas facing women at various points during the life cycle. The course begins with an exploration of the underpinnings of female gender identity in childhood and includes an examination of adolescence (issues such as teenage pregnancy, bulimia, abortion), early adulthood (marriage/choosing to be single, work/family stresses, day care, timing of motherhood, dual career marriages), middle adulthood (empty nest debate, adult daughter/mother relationships, caregiving, depression), and later adulthood (living alone/widowhood, poverty, sexuality, social networks). Attention is given to minority women throughout the course. 3 semester hours

WS 230       DOMESTIC VIOLENCE AND THE JUSTICE SYSTEM (SAME AS CJ 230)
The main objective of the course is to introduce students to the subject of family violence, especially as it relates to the legal system in the United States. This is accomplished by exploring (a) the historical roots of domestic violence, (b) social science theoretical perspectives, (c) the roles and the players, (d) the typical criminal prohibitions, (e) the experiences of victims who seek help from the court, religious, and medical authorities, and (f) efforts at developing prevention and intervention strategies. In addition, the course seeks to develop skills in students to find and evaluate information on family violence, especially as it is found in sociological sources and court needs. 3 semester hours

WS 240       GENDER AND INTERNATIONAL DEVELOPMENT (SAME AS SOC 240)
This course focuses on how gender inequality is structured globally and how economic and political changes in the last half of the 20th century have impacted these inequalities. To understand the impact of economic and political changes, we will specifically examine regions such as Latin America, Asia (Southeast, South Asia, China), Africa, and the Middle East and make comparisons with the United States. We will look at the social, economic, and political structure in different countries of these areas and see how gender inequality is socially constructed and impacted by changes. We will end the course by looking at some of the ways women have made changes in the structure of their countries and ultimately their own lives. 3 semester hours

WS 241       WOMEN AND THE CRIMINAL JUSTICE SYSTEM
This course uses case law, role-playing and discussion to examine the issues of the victimization of women in society and the response of the criminal justice system to their experiences. Emphasis is placed on the importance of gender as a factor affecting both the definition of female criminality and the role of women in the system itself. 1.5 semester hours

WS 245       WOMEN AND CRIMINAL JUSTICE (SAME AS CJ 245)
This course explores theoretical and empirical research that relates to gender and criminal justice. The course is divided into three sections: women as offenders, women as victims, and women as criminal justice practitioners. Emphasis is placed on the intersection of victimization and offending for women and girls. Topics include the nature and pattern of criminal offending by women and girls, their treatment by the criminal justice system, and how their gender may influence their punishment. The course also addresses the experiences of women as survivors of domestic violence, sexual abuse, and sexual harassment. Additional topics include women’s experiences as law enforcement officers, attorneys, judges, and correctional officers. 3 semester hours

WS 270       HUMAN SEXUALITY (SAME AS SW 270)
This course explores human sexuality in three separate sections using a biopsychosocial approach. The first of these units addresses an overview of sexuality information and functioning. The second examines psychosocial issues as they exist within sexuality. Lastly, the manifestations of human sexuality as they occur within the social work context and subsequent practice issues are investigated. 3 semester hours

WS 275       AFRICAN AND AFRICAN AMERICAN WOMEN IN SOCIETY (SAME AS SOC 275)
This course will explore some of the significant life experiences of women in sub-Saharan Africa (such as marriage, sex and sexuality, motherhood, being a wife, families, aging, widowhood, work, and urban vs. rural life), how the same type of experiences are lived by African American women, and how an understanding of culture and social organization helps us understand why African and African American women sometimes experience these similarly and sometimes differently. This is a writing-enriched course. 3 semester hours

WS 305       PSYCHOLOGY OF WOMEN, MEN, AND WORK (SAME AS PSY 305)
Women and men working together is a fact of life in today’s workplace. This course will address issues that face women and men both separately and together in today’s workplace. Facing these issues is no longer an attempt at political correctness but a legal necessity. As such, we will address both social interaction issues and legal requirement issues for the workers and the employers. 3 semester hours
WS 313  SELECTED TOPICS IN LITERATURE AND FILM (SAME AS HUM 313)

Literature and film represent two of the media in which society explores its most puzzling questions. This course examines the way particular issues are treated in literature and film, focusing on both the issues and the analytical skills necessary to critique the two media. Issues are different each time the course is offered. This course counts as a women’s studies course when the selected topic and issues focus on women. 3 semester hours

WS 315  WOMEN, MEN, AND WORK (SAME AS EC 315)

This course focuses on gender issues in the labor force and the household. Topics include labor force participation patterns and trends, allocation of time between household and market work, unemployment, leadership styles, occupational segregation, discrimination, and sexual harassment. Prerequisite: EC 202. 3 semester hours

WS 317  SOCIOLOGY OF SEX AND GENDER (SAME AS HIST 317)

An examination of sex/gender systems in historical, cross-cultural, and contemporary societies. Identity politics and the interconnections between gender, race, class, ethnicity, and sexual orientation are core segments of this course. Feminist, socialist, liberal, and conservative thought on sex/gender issues are examined. Readings include classic early writings from the contemporary women’s movement and more recent gender analyses. Prerequisite: SOC 105. 3 semester hours

WS 326  GENDER IN EUROPEAN HISTORY (SAME AS HIST 326)

The course focuses on the changing nature of male and female genders from the Renaissance to the present. The purpose of the course is to familiarize students with gender as an analytical category, distinguish it from sex, make students conscious of the variability of gender, and knowledgeable of the forces that have acted upon gender in the past. Students will explore the nature of men’s and women’s conditions, social status, and thought, as well as development of their political, social, and cultural powers from the 15th century to our day. 3 semester hours

WS 350  WOMEN AND ART (SAME AS AH 350)

This course looks at studies over the past twenty years which have restituted the significant contributions of women in making, commissioning, and inspiring artistic images. These re-evaluations have led to a richer, more nuanced history—one that portrays gender as an integral factor and that reveals the key role women have played in the world of art. The course will focus on how artists have portrayed women and the ways representations of women function as a manifestation of culture. The work of women artists and feminist critical discourse will be included. 3 semester hours

WS 351  HISTORY OF WOMEN IN AMERICA TO 1870 (SAME AS HIST 351)

Explores the lives of women in America from the beginning of the colonial era to 1870, with special emphasis on how race, class, region, and gender have affected women’s identities, relationships, and daily lives. Topics include religion, paid and unpaid labor, life cycles, friendships, family life, community, health and sexuality, the women’s rights movements, and the impact of the American Revolution and the Civil War. This is primarily a lecture-based course, with writing and discussion as important elements. 3 semester hours

WS 352  HISTORY OF WOMEN IN AMERICA SINCE 1870 (SAME AS HIST 352)

Explores the lives of women in America from 1870 to today, with special emphasis on how race, class, region, and gender have affected women’s identities, relationships, and daily lives. Topics include religion, paid and unpaid labor, prostitution, friendships, family life, community, health and sexuality, birth control, the women’s rights movement, and the impact of U.S. involvement in international wars. This is primarily a lecture-based course, with writing and discussion as important elements. 3 semester hours

WS 355  FEMINIST THEORIES AND METHODOLOGY

This seminar-style course focuses on feminist theories as they have evolved since the beginning of organized activity on behalf of women’s rights. Theoretical foundations of liberal, radical, and socialist feminism are covered, as well as more recent works on standpoint theory, masculinist studies, post-colonial research, multiculturalism, social constructionism, post-modern and queer theory. Critical thinking is applied to the intersections of gender with race, class, sexual orientation, ethnicity, age, and other socially defined characteristics. Critiques and innovations in research methodology are also covered. Prerequisite: WS 101 or permission of instructor. 3 semester hours

WS 367  SOCIAL MOVEMENTS AND SOCIAL CHANGE (SAME AS SOC 367)

This course explores the interaction between social movements and social change. The focus is on intentional change; on social movements as expressions of people’s interest in transforming social structures and cultural relations. Activism organized around class, race, gender, and other socially defined positions are examined through film, readings, and class discussion. Symbols, propaganda, music, marches, historical reference, and other forms of emotional involvement constitute part of the exploration of social movement organizations and the strategies they employ. Prerequisite: SOC 105. 3 semester hours

WS 371  STUDIES IN AMERICAN WOMEN’S HISTORY (SAME AS HIST 371)

A focused examination of key themes in American women’s history from colonial times to the present. Topics include changing roles within the family, the empowering and restricting effects of religion, the changing definitions and status of women’s work, women’s involvement in reform movements, and the evolution of the women’s rights movement. This is a seminar-style course centered on discussion of required readings, in-class presentations, and written assignments. 3 semester hours

WS 394, 395  WOMEN’S STUDIES PRACTICUM

Students work 6–8 hours per week off campus in one of several agencies/organizations that focus on issues concerning women. This practicum must be under the supervision of agency/organization personnel. Students are also required to become familiar with the scholarly literature relevant to their placement, obtain an understanding of contemporary women’s issues, participate in on-campus meetings and write a research paper integrating the research and field work aspects of the practicum. Permission of the director of women’s studies is required prior to registration. Open to juniors or seniors. Not available to students who are student teaching. May be taken in one or two semesters. Six credits maximum. Prerequisite: WS 101. 3–6 semester hours

WS 409  SENIOR CAPSTONE

This is a senior level research course in a specialized area of women’s studies. Required of all women’s studies majors. This is a writing enriched course. Prerequisite: WS 355 or permission of instructor. 3 semester hours

WS 499  INDEPENDENT STUDY

The student undertakes independent study of significant issues concerning women’s studies. A topic, approved by the instructor, as well as the director of women’s studies, is chosen for research and a written report is required. Discussions as to the progress of the work are held periodically. Prerequisite: Open to qualified students with the permission of the faculty advisor and the director of women’s studies. Student must have a junior or senior standing. 3–6 semester hours

WS 950  THE LEGACY OF EVE I (SAME AS HUM 950)

A historical and literary survey of women who appear in the Bible and their archetypal sisters who populate subsequent literature throughout the centuries. The essential woman: ordinary, extraordinary, submissive, aggressive, good, evil. Discussion focuses on famous and not-so-famous women throughout the readings, which include related stories, retellings, and observations from contemporary (and not-so-contemporary) sources. 1.5 semester hours
WIDENER UNIVERSITY
FACULTY & STAFF

FACULTY

COLLEGE OF ARTS AND SCIENCES
SCHOOL OF BUSINESS ADMINISTRATION
SCHOOL OF ENGINEERING
SCHOOL OF HOSPITALITY MANAGEMENT
SCHOOL OF HUMAN SERVICE PROFESSIONS
SCHOOL OF NURSING

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<td>Barbara Field</td>
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<td>Carol Ann Hanna</td>
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<td>Wendy A. S. Hatch</td>
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<td>Rhonda Hazell</td>
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<td>Darla Henry</td>
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<td>Charles D. Hummer III</td>
<td>Physical Therapy</td>
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<td>Carolyn S. Iafrate</td>
<td>Business Law, Taxation</td>
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<td>Jacqueline Ioli</td>
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<th>Name</th>
<th>Department</th>
<th>Education</th>
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<tbody>
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<td>Valerie Molaison</td>
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<tr>
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<tr>
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<tr>
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<tr>
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<td>Cheryl Sadeghee</td>
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<tr>
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