



Widener University

2012–2013 Undergraduate Catalog

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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*
- gender & women’s studies
- history*
- international relations
- mathematics*
- media informatics
- physics*
- political science
- psychology***
- science education*
- sociology***
- Spanish*

School of Business Administration

- accounting**
- business informatics**
- economics** (financial services track available)
- finance**
- international business**
- management** (several concentrations available)

School of Engineering

- biomedical 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

- elementary education: the early years/special education
- elementary education: the middle years, with specializations in language arts, mathematics, science, and social studies
- secondary education (several concentrations available)
- social work

School of Nursing

- nursing

Dual Degree Programs

- chemistry/chemical engineering
- creative writing/English
- criminal justice/political science
- electrical engineering/physics
- environmental science/biology
- mathematics/computer science
- mechanical engineering/physics
- social work/psychology
- social work/gender & women’s studies

*Secondary education certification available

**Cooperative education available

***Pre-physical therapy 3+3 and 4+3 programs available

CAMPUSES

Main Campus, One University Place, Chester, PA 19013

Delaware Campus, 4601 Concord Pike, Wilmington, DE 19803

Harrisburg Campus, 3800 Vartan Way, Harrisburg, PA 17110

Exton Campus, 825 Springdale Drive, Exton, PA 19341

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2012–2013 Academic Calendar

FALL SEMESTER

AUGUST 2012

- 22 WED—New student move-in.
First day of new student orientation.
- 23 THU—Second day of new student orientation.
- 24 FRI—Third day of new student orientation.
Freshman Advising Day; Convocation
- 26 SUN—Check-in for upperclassmen and re-entry students.
- 27 MON—All Main Campus day classes begin.

SEPTEMBER 2012

- 3 MON—Labor Day; no classes.
- 4 TUE—Last day for dropping and adding classes.
- 27 THU—Last day to withdraw from Module I courses.

OCTOBER 2012

- 6 SAT—Homecoming.
- 8 MON—Freshman pre-advising day.
- 11–12 THU–FRI—Final exams, Module I.
- 15–16 MON–TUE—Fall break.
- 17 WED—Midterm.
Deadline for finishing Incompletes from summer 2012.
Module II begins.

NOVEMBER 2012

- 5–23 MON–FRI—Registration for spring 2013 courses.
- 6 TUE—Deadline for withdrawal without academic penalty.
- 12–16 MON–FRI—International Week.
- 20 TUE—Last day to withdraw from Module II courses.
- 22–23 THU–FRI—Thanksgiving holiday.

DECEMBER 2012

- 6–7 THU–FRI—Final exams, Module II.
- 7 FRI—Last day of classes.
- 8 SAT—Reading Day.
- 9–13 MON–THU—Final exams or supplemental instruction.
- 13 THU—Official end of fall semester.

SUMMER I & II SESSIONS

- | | |
|-----------------|--|
| May 20–June 28 | Summer Day I—Undergraduate day, Continuing Studies, and graduate courses offered. |
| July 1–August 9 | Summer Day II—Undergraduate day, Continuing Studies, and graduate courses offered. |

SPRING SEMESTER

JANUARY 2013

- 13 SUN—New student check-in.
- 14 MON—Official start of spring semester.
All Main Campus day classes begin.
- 21 MON—Martin Luther King Jr. holiday.
- 22 TUE—Follow Monday class schedule.
Last day for dropping and adding classes.

FEBRUARY 2013

- 15 FRI—Last day to withdraw from Module I courses.
- 2/28–3/1 THUR–FRI—Final exams, Module I.

MARCH 2013

- 1 FRI—Midterm.
Deadline for finishing Incomplete grades from fall 2012.
- 4–8 MON–FRI—Midterm break. Network upgrade period.
- 11 MON—All classes resume. Module II begins.
- 17–22 SUN–FRI—Honors Week.
- 29 FRI—Spring holiday.

APRIL 2013

- 1–19 MON–FRI—Registration for summer and fall 2013 courses.
- 3 WED—Deadline for withdrawal without academic penalty.
- 14 SUN—Make-up day, if needed, for classes missed due to inclement weather (1–6 p.m.).
- 17 WED—Last day to withdraw from Module II courses.
- 19 FRI—Student Project Day (no classes).
- 30–5/1 TUE–WED—Final exams, Module II.

MAY 2013

- 1 WED—Last day of classes.
- 2 THU—Reading Day.
- 3–8 FRI–WED—Final exams (on Sunday begin at 1 p.m.).
- 10 WED—Official end of spring semester.
- 18 SAT—Commencement.

SUMMER CO-OP SESSION

MAY 2013

- 20 MON—All co-op classes begin, 8 a.m.
- 27 MON—Memorial Day holiday.
- 28 TUE—Last day for dropping and adding classes.

JUNE 2013

- 28 FRI—Midterm.
Deadline for finishing Incomplete grades from spring 2013.

JULY 2013

- 4 Independence Day holiday.
- 16 TUE—Deadline for withdrawal without academic penalty.

AUGUST 2013

- 9 FRI—Last day of classes.
- 10–11 SAT–SUN—Optional final exam period.

ABOUT WIDENER UNIVERSITY

Member, Association for Continuing Higher Education

PROFILE

Widener University is a private, metropolitan university that connects curricula to social issues through civic engagement. Dynamic teaching, active scholarship, personal attention, leadership development, and experiential learning are key components of the Widener experience. A comprehensive doctorate-granting university, Widener is comprised of eight schools and colleges that offer liberal arts and sciences and professional and pre-professional curricula leading to associate's, baccalaureate, master's, and doctoral degrees. The university's campuses in Chester, Exton, and Harrisburg, PA, and Wilmington, DE, serve approximately 6,500 students. For more information, go to www.widener.edu.

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, leadership development, 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 150 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), Accreditation Commission of ABET (School of Engineering), American Association of Sexuality Educators, Counselors, and Therapists (Center for Human Sexuality Studies), 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 Continuing Legal Education of the Supreme Court of Delaware (School of Law), Council on Social Work Education (Center for Social Work Education), National Association for Education of Young Children (Child Development Center), National Council for the Accreditation of Teacher Educators (Division of Education), Pennsylvania Continuing Legal Education Board of the Supreme Court (School of Law), Pennsylvania Department of Education (Division of Education), Pennsylvania Department of Welfare (Child Development Center), Pennsylvania Private School Board (Division of 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; Gamma Eta Rho, human sexuality; 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 SAT Reasoning Test 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.

HOW TO APPLY

1. To access the application, schedule an appointment, or request information, visit our website at www.widener.edu.
2. Complete the online application form and click submit. The application fee will be waived for those who apply directly online at www.widener.edu/apply.
3. Give the Secondary School Report (which you can print) 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.

REQUIRED TESTS

All applicants for admission are required to take either the SAT Reasoning Test 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 October, November, or December of their senior year. The SAT writing section is optional and is not a requirement for admission. The SAT 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. Admissions counselors are available for questions via phone at 610-499-4126. Our Widener Day Open House programs are a great way to learn more about what Widener has to offer.

The Office of Admissions is open Monday–Friday, 9:00 a.m. to 5:00 p.m. The Admissions Office also hosts events for those interested in visiting during the weekend. Check our website at www.widener.edu/visit or call us at 610-499-4126 or toll free 1-888-Widener (943-3637) for availability and dates. In the event that it becomes necessary to cancel an appointment, please call the Office of Admissions to let us know.

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 admission 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.

BASIC CURRICULUM REQUIREMENTS FOR ADMISSION

| | Units |
|---|-----------|
| English | 4 |
| History/Social Science (4 recommended) | 3 |
| Mathematics (4 recommended) | 3 |
| Algebra I, II | |
| Plane Geometry | |
| Trigonometry/Pre-Calculus | |
| Science (4 recommended) | 3 |
| Physics/Earth Science | |
| Biology | |
| Chemistry (required for Engineering and Nursing majors) | |
| Foreign Language | 2 |
| Electives | 3 |
| Total | 18 |

***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, with the exception of nursing, 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.

Neither the SAT Reasoning 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 are recommended for admissions consideration. Visit www.widener.edu/admissions for more information.

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 dean for the School of Education, Innovation, and Continuing Studies.

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.

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 \$300 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.

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:

$$\begin{aligned} & \text{Cost of Attendance} \\ & - \text{Expected Family Contribution} \\ & = \text{Financial Need (potential aid eligibility)} \end{aligned}$$

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 (most states are reciprocal, except for NJ, NY, and MD), the Federal Direct Loan, and any other aid for which they might be eligible. The amount of Federal Direct 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 Direct PLUS and Unsubsidized Federal Direct 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 Direct 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 Direct Loan, Federal Direct 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:

| Credit Hours Completed | Minimum GPA |
|------------------------|-------------|
| 15.5 or fewer | 1.70 |
| 16 - 30.5 | 1.80 |
| 31 - 60.5 | 1.90 |
| 61 and more | 2.00 |

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

At the end of each academic year, students are evaluated for academic progress (quantitative and qualitative). Students who do not meet the minimum standards will be contacted by e-mail using their CampusCruiser address. Notification will outline student options to re-establish eligibility, such as attending subsequent classes or submitting an appeal for a waiver by a specified date.

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 the student has earned 67 percent of total credits attempted and has achieved the required grade point average, either at the student's own expense or by completing unfinished class assignments, except when aggregate hours (total hours attempted) are the cause of ineligibility.

APPEALS

At the end of each academic year, a student may appeal any failed progress status based on extenuating circumstances, such as the death of a relative, a serious personal illness or injury, or a change of educational objective. The student must be able to demonstrate that the extenuating circumstance had a direct impact on the student's academic performance.

Appeals will require an academic plan with input from the student's academic advisor or dean. An appeal for excessive aggregate hours must address, at a minimum, any degree program changes and include a degree completion plan from the dean of the student's school or college.

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 Widener's website at widener.edu/financialaidoffice.

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 annual amount available is subject to federal fiscal year appropriations. Eligibility is limited to students who have not earned a bachelor's degree. Once a student has received a Pell Grant for 12 semesters or the equivalent the student will no longer be eligible for Pell Grants.

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 nine 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 under Forms and Publications.

FEDERAL DIRECT LOANS are low-interest loans from the U.S. Department of Education that are administered by Widener University. They are the U.S. Department of Education's major form of self-help aid and are available through the William D. Ford Federal Direct Loan Program. There are two types of Federal Direct Loans: subsidized and unsubsidized. Federal Direct Loans replace the Federal Stafford Loans, which were formerly known as Federal Guaranteed Student Loans.

Because the funding for these loans comes straight from the U.S. Department of Education, you do not have to find a lender to borrow from through this program. Please disregard any offers you may receive about the Federal Stafford Loan program through private lenders. Since Widener University is a Federal Direct Lending institution, you may not use a private lender to apply for a Federal Stafford Loan.

Federal Direct Subsidized Loan

A Federal Direct Subsidized Loan is available to help meet financial need after other resources are subtracted or to the annual maximum loan limit, whichever is lower. The interest rate in effect for 2012–2013 for undergraduate students is fixed at 3.4 percent. Interest begins to accrue immediately upon graduating or when the student ceases to be enrolled at least half time.

Federal Direct Unsubsidized Loan

A Federal Direct Unsubsidized Loan is not based on your financial need. If your estimated cost of attendance is greater than your financial aid and you have not reached your annual maximum loan limit through the Federal Direct Subsidized Loan, you may qualify for a Federal Direct Unsubsidized Loan. The interest rate for Federal Direct Unsubsidized loans is fixed at 6.8 percent. You are charged interest on this loan from the time the loan is disbursed until it is paid in full. You have the option to pay on the interest while in school or to allow the interest to accumulate, which adds to the principal amount of the loan and increases the amount to be repaid.

Federal Direct Loan Interest and Fees

The interest rate in effect for 2012–2013 for Federal Direct Subsidized loans for undergraduate students is fixed at 6.8 percent. The interest rate for Federal Direct Unsubsidized loans is fixed at 6.8 percent. Subsidized loans do not accrue interest until loan repayment begins, whereas unsubsidized loans accrue interest from when the loan is disbursed.

In addition to interest, all Federal Direct Loans have a 1.0 percent origination fee. However, you will receive an upfront 0.5 percent rebate at the time of origination based on paying your first 12 monthly payments on time, so the assessed fee is only 0.5 percent. This fee reduces the amount that disburses to your student account. For example, if you borrow \$3,500 for the academic year, \$17.50 will be deducted from your loan amount and paid directly to the U.S. Department of Education.

FEDERAL PERKINS LOAN MONTHLY PAYMENT AT 5% OVER 10 YEARS

| Total Loan Amount | Interest Charges | Number of Payments | Total Repaid | Monthly Payment |
|-------------------|------------------|--------------------|--------------|-----------------|
| \$ 4,500 | \$1,227.60 | 120 | \$ 5,727.60 | \$ 47.73 |
| 9,000 | 2,455.20 | 120 | 11,455.20 | 95.46 |
| 18,000 | 4,910.40 | 120 | 22,910.40 | 190.92 |

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

FEDERAL DIRECT LOAN MONTHLY PAYMENTS AT 8.25% OVER 10 YEARS

| Total Indebtedness | Interest Charges | Number of Payments | Total Repaid | Monthly Payment |
|--------------------|------------------|--------------------|--------------|-----------------|
| \$ 2,600 | \$ 628.42 | 65 | \$ 3,228.42 | \$ 50.00 |
| 5,000 | 2,358.97 | 120 | 7,358.97 | 61.33 |
| 7,500 | 3,538.80 | 120 | 11,038.80 | 91.99 |
| 10,000 | 4,718.00 | 120 | 14,718.00 | 122.65 |
| 15,000 | 7,077.60 | 120 | 22,077.60 | 183.98 |

Typical monthly payments and total interest charges over a 10-year period based on 8.25 percent interest rate.

How to Apply for a Federal Direct Loan (Subsidized or Unsubsidized)

To apply for a Federal Direct Loan, you must complete the FAFSA. To be eligible, you must be enrolled at least half time and meet other general federal student aid eligibility requirements. If you qualify for a Federal Direct Loan, it will be included in your Financial Aid Award Letter.

E-sign the Federal Direct Loan Master Promissory Note (MPN)

Students borrowing a Federal Direct Loan must complete a Federal Direct Loan Electronic Master Promissory Note (MPN) before loan money can be disbursed. Once a Federal Direct Loan MPN is completed and the loan is disbursed to you by Widener University, you do not have to sign a Federal Direct Loan MPN again (it is valid for 10 years).

To complete the MPN, you must go to <https://student-loans.gov>. You will need your U.S. Department of Education PIN to sign your MPN electronically. The PIN is the same one used to sign your FAFSA.

After you sign your MPN, electronic notification will be sent to Widener University. Widener may not disburse your Federal Direct Loan unless you have completed your MPN and have completed entrance counseling.

Federal Direct Loan Entrance Counseling

The federal government requires a student to participate in loan counseling prior to receiving a Federal Direct Loan. Entrance counseling will explain various aspects of student loans, such as repayment and interest, and the student's rights and responsibilities. It concludes with a 15-question quiz. You must get all answers correct to successfully complete the entrance counseling.

Entrance counseling can be completed at <https://student-loans.gov>. You will need your U.S. Department of Education PIN to successfully complete the entrance counseling. After you complete entrance counseling, the results will be sent electronically to Widener University. You may wish to print a copy of the rights and responsibilities page for your personal records.

Receiving Federal Direct Loan Funds

When Widener University is notified by the Federal Direct Loan processor that they have a valid MPN on file for you and you have completed entrance counseling, your Federal Direct Loan will automatically be credited to your student account, as long as all other federal student aid eligibility requirements are met.

Request Reduction or Cancellation of a Federal Direct Loan

You have the right to reduce or cancel your Federal Direct Loan offer. You can do so by making a notation on your Financial Aid Award Letter and returning it to the Office of Student Financial Services.

Eligibility

Degree-seeking students who are enrolled at least half time may receive Federal Direct Loan funding as long as they meet the general eligibility requirements.

Federal Direct Parent Loan for Undergraduate Students (PLUS)

The Federal Direct PLUS loan enables parents with good credit histories to borrow funds to pay the educational expenses of each dependent undergraduate child enrolled at least half time. The yearly limit on a Federal Direct PLUS is equal to the cost of attendance minus any other financial aid. Parent borrowers can choose to defer payments on a Federal Direct PLUS loan until six months after the date the student ceases to be enrolled at least half time. Accruing interest could either be paid by the parent monthly or quarterly, or be capitalized quarterly. Payments on interest are tax deductible, and there are no penalties on paying off the loan early.

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 are expected to apply for their state's grant (most states are reciprocal, except for NJ, NY, and MD). 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. Groff Alderfer 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 Laila Al-Saleh Memorial Undergraduate Nursing Scholarship—Established by Conrad '55 and Sheila 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 second semester freshman or above 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.

American Legion Smith Howard Post #93 Veteran Scholarship—Created by the American Legion's Smith Howard Post #93 of Media, Pennsylvania, this partial scholarship is awarded to a non-scholarship ROTC cadet or a veteran of the son, daughter, or grandchild of a parent or grandparent who served or is serving on active duty in any of the military services. The student will be a full-time undergraduate and maintain a 3.0 or higher GPA, be involved in extracurricular activities or involved in community service. Preference is given to residents of Delaware County, PA, who demonstrate financial need.

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

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.

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 first be given to residents of Upland, PA, then Delaware County, PA.

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.

Sarah E. Bone Endowed Scholarship Fund—This scholarship is awarded to a student who has an outstanding academic record and demonstrates financial need.

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 majoring 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.

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.

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 male 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 Scholarships—As a community service, the Board of Trustees, through the president of the university, awards two scholarships each year to residents of Delaware County, PA. 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 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.

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.

ERIN Engineering and Research Scholarship—This partial scholarship is awarded by the chairman of the mechanical engineering department to a mechanical engineering major who has a minimum GPA of 3.0 and demonstrates financial need and academic achievement.

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 given to a 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.

Thomas and Karen Flynn Scholarship—Established by Jeffrey T. Flynn '04, '05 in honor of his parents, Thomas and Karen, this partial scholarship is awarded to students demonstrating outstanding academic achievement and financial need.

General Adult Scholarship—Created by contributions from University College/Continuing Studies 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 majoring in English. The recipient shall be a member of Widener University's ROTC Freedom 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.

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 Hannum 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 Fund—This partial scholarship is awarded to a nursing student in any bachelor's or master's degree program or any nursing certification program, full- or part-time basis. The recipient must maintain a minimum 3.0 GPA and demonstrate financial need. Preference is given to a single parent, a graduate of Chester High or surrounding region

of Delaware County, a resident of the City of Chester, or an adult student 25 years old or older.

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.

Mathews 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 Sheilagh Karl in memory of Connie's parents, Samuel and Hilda Karl, this scholarship is awarded to a full-time junior or senior nursing student who exhibits outstanding academic merit and demonstrates financial need and a commitment to community service.

Lawrence S. Kucharczuk Memorial Scholarship Fund—Established by friends and family in memory of Larry Kucharczuk, 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, and is presented during 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 County, 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 Freedom 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. '42 Freshman Scholarship—This scholarship is awarded to a freshman who demonstrates financial need and general academic achievement.

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.

McGowan Fellows Program Scholarship—Widener's School of Business Administration awards the McGowan Fellows Program Scholarship to provide partial tuition support for an undergraduate student majoring in any of the six disciplines within the School of Business Administration: accounting, business informatics, economics, finance, 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.

Kenneth D. '92 and Nancy M. Miller '88, '92 Endowed Scholarship Fund—This scholarship is awarded to an undergraduate student in either the School of Business Administration or the College of Arts & Sciences. Preference is given to a science or math major. A minimum 3.0 high school GPA is required. Recipient shall demonstrate financial need. This is a renewable scholarship for recipients who maintain a 3.0 or higher GPA.

The Clarence R. and Ruth H. Moll Scholarship—This scholarship exists 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.

Subba Rao Nadig Memorial Scholarship—Created by faculty member Gopalakrishna Nadig, in memory of his father, this partial scholarship is applied to the tuition and room and board of the highest ranking student majoring in mechanical engineering who has completed at least 4 semesters at Widener University. 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. Orlofsky Internship—Created in memory of Leo A. Orlofsky '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 enrolled 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, PA, and majoring in nursing or engineering.

Pennsylvania Military College Alumni Scholarship—This four-year partial 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 reside in the City of Chester, the Borough of Upland, and Chester Township. Students must be active members of the Rotaract Club of Widener. 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 from 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. Preference is also given to children of employees of Lankenau Hospital, Philadelphia, PA. 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 and financial need.

Drs. J. Jordan Storlazzi Sr. and Jr. Memorial Scholarship—This partial scholarship is awarded to a rising senior biology student who is planning to attend medical school, 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

Freedom 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 to Gold program or a veteran of the armed forces. GPA of 3.0 is required.

Nicholas P. Trainer Scholarship Fund—This scholarship is awarded to a senior student in the School of Business Administration who has an outstanding academic record and is active in student activities.

Robert and Jean Turrell Endowed Scholarship—Created by Robert '37 and Jean Turrell to honor Robert's father, J. Elmore Turrell (Class of 1905), this partial scholarship is awarded annually to a student of outstanding academic record who has demonstrated financial need.

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.

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 Law Scholarship—The Widener Presidential Law 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.

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. Zohlman Scholarship—This scholarship fund was established in honor of John Zohlman, 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 National Scholarships—The Army Four-Year and Three-Year Advanced Designee Scholarship programs are available to students who will graduate from high school or possess an equivalent certificate before September 1 of the first year they enroll in college. Students are awarded these scholarships through a highly competitive national selection process. The scholarships provide full tuition and mandatory fees per year, plus \$1,200 per year for books and a \$300–500 (based on academic level) per month tax-free stipend. Army ROTC scholarship winners at Widener also receive free room and board (cost of basic double room and standard meal plan) as an incentive, after other grants are applied. 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.

Scholarship applications and information are available online at www.armyrotc.com. Applications must be received by the U.S. Army Cadet Command no later than January 10 of the year leading to fall semester college enrollment. Although the minimum requirements are as follows, scholarships are awarded competitively to the most qualified: applicants must have 920 or higher on the SAT (CR and Math), or 19 or higher composite score 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 Campus-Based Scholarships—The Campus-Based Scholarship program is available to freshman and sophomore students and to seniors applying to a two-year graduate program. The Widener University Department 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. Army ROTC scholarship winners at Widener also receive free room and board (cost of basic double room and standard meal plan) as an incentive, after other grants are applied. 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 submitted to the Department of Military Science by November 1 or April 1 of the semester prior to anticipated benefits. Although the minimum requirements are as follows, scholarships are awarded competitively to the most qualified: applicants must have a cumulative GPA of 2.5 or higher, be full-time students, be U.S. citizens, pass the Army Physical Fitness Test, be DoD medically qualified, and be able to graduate and commission before the year of their 31st birthday. 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 as officers at the rank of second lieutenant. 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 indiscipline, 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, visit online at www.widener.edu/vets or contact the coordinator of Veterans Affairs in Enrollment Services at 610-499-4159. The coordinator's office is open Monday–Friday, 9 a.m. to 5 p.m.

BILLING INFORMATION

ACADEMIC YEAR 2012–2013 TUITION RATES

UNDERGRADUATE DAY

| | |
|--------------------------------------|-------------------------|
| Full-Time Undergraduate Per Semester | ..\$17,882 |
| Full-Time Undergraduate Annual |\$35,764 |
| Part-Time Undergraduate |\$1,190 per credit |
| Part-Time Undergraduate Engineering | ..\$1,220 per credit |
| BSN/RN |\$522 per credit |

CONTINUING STUDIES UNDERGRADUATE

| | |
|------------------------------------|-----------------------|
| Main Campus |\$534 per credit |
| Delaware/Exton Campus (NetCourses) | ..\$484 per credit |

MANDATORY FEES (if applicable)

| | |
|---------------------------------------|-------------------------|
| Engineering Program Fee |\$595 per semester |
| Student Activity Fee |\$80 per semester |
| Technology Fee—Full-Time |\$229 per semester |
| Technology Fee—Part-Time | |
| 3–5 credits |\$46 per semester |
| 6–8 credits |\$64 per semester |
| 9–11 credits |\$110 per semester |
| Part-Time General Student Fee |\$25 per semester |
| Parking Decal—Resident |\$160 annual |
| Parking Decal—Commuter |\$110 annual |
| International Student Orientation Fee | ...\$125 |
| New Student Orientation Fee |\$175 |
| Graduation Fee (petitioning students) | ...\$30 |
| Student Health Insurance* | |

* 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. The 2012–2013 rates are posted online. Please contact the Student Health Office at 610-499-1183 for costs, benefits, and waiver information.

DINING PLANS* Semester Annual

Dining Plans with Food Court

| | | |
|---|---------------|---------|
| Platinum Unlimited Meals w/ \$350 Dining Dollars | \$2,974 | \$5,984 |
| Gold Unlimited Meals w/ \$275 Dining Dollars | \$2,898 | \$5,796 |
| Silver Unlimited Meals w/ \$175 Dining Dollars | \$2,800 | \$5,600 |
| 180 Residence Block Plan w/ \$400 Dining Dollars | \$2,500 | \$5,000 |

Dining plans can be changed up until the first Friday after the start of the semester.

Commuter/Off-Campus Meal Plans

| | |
|--|---------------|
| 25 Commuter Block Plan w/ \$250 Dining Dollars | \$500 |
| 75 Commuter Block Plan w/ \$500 Dining Dollars | \$1,250 |
| 105 Commuter Block Plan w/ \$250 Dining Dollars | \$1,250 |
| \$500 Dining Dollars Plan | \$500 |

Note: There are no refunds on purchases of block meal plans.

*Freshmen in residence halls must purchase the Platinum or Gold Unlimited Plan. Sophomores in residence halls must purchase one of the three unlimited plans. Juniors and seniors in residence halls other than Metro must purchase at least the 180 Residence Block Plan. Juniors and seniors in Metro can purchase any of the plans, but they are not required to purchase a meal plan. Commuters can purchase a 25, 75, or 105 Block Plan. Block meal plans must be used in the semester they are purchased. Meal plans and Dining Dollars do not carry forward to the next term.

In the event a student leaves or withdraws from the university, prorated housing and meal costs will be refunded. Housing and meal plans are refunded based on the portion used and the official withdrawal date.

RESIDENCE HALLS Semester Annual

| | | |
|-------------------------------------|---------------|---------|
| Basic Double Room* | \$3,150 | \$6,300 |
| Basic Single Room* | \$3,600 | \$7,200 |
| Air-Conditioned Double Room** | \$3,300 | \$6,600 |
| Air-Conditioned Single Room** | \$3,800 | \$7,600 |
| Metropolitan Double Room | \$4,400 | \$8,800 |
| Metropolitan Single Room | \$4,500 | \$9,000 |
| Fraternities/Sororities Double Room | \$3,150 | \$6,300 |
| Fraternities/Sororities Single Room | \$3,400 | \$6,800 |

*Basic Rooms: Cann, Hanna, Howell, and Turrell

**Air-Conditioned Rooms: Boettner, Grasselli, Kapelski, Moll, New, Sharples, and Thayer

Apartments

| | | |
|-----------------|---------------|---------|
| Grasselli Lofts | \$3,300 | \$6,600 |
| Dixon Hall | \$3,450 | \$6,900 |
| Widener Court | \$3,200 | \$6,400 |

BILLING/STUDENT ACCOUNT STATEMENT INFORMATION

Students can view their account and 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 Services at enrollmentservices@widener.edu or call 610-499-4161 if you do not have your Widener student ID or pin number. 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

Summer Session 2012: Due May 14, 2012

Note: Due date may vary. Tuition and fees are due on the first day of classes. For most students, this date will be May 14, 2012. If you are taking classes that begin on a different date, your tuition will be due on the first day of your class.

Fall Semester 2012: Due August 9, 2012

Spring Semester 2013: Due January 14, 2013

LATE PAYMENT FEE

A late payment fee of \$125 is assessed to all student accounts that are not financially cleared as of the payment due date noted on the bill. Late payment fees will be assessed regardless of the source of payment. It is the student's responsibility to ensure that all payments have been received, payment plan enrollment has

been completed, financial aid paperwork has been completed, and any third-party authorizations have been received by the published due dates. A \$25 late fee will be assessed to payment plan accounts for each payment that is past due.

FEE FOR INSUFFICIENT FUNDS

A fee of \$25 will be assessed for insufficient funds, including insufficient funds due to invalid account numbers, returned checks, and stop payments.

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 number to log on to your online student account. If you do not have this information, e-mail enrollmentservices@widener.edu.

** Credit card payments are charged a 2.75% convenience fee by our vendor. There is no charge for using direct debit.*

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 send payment to:

Widener University
Enrollment 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 Services in Lipka Hall (Main Campus). Regular semester office hours are Monday through Friday, 9:00 a.m. to 5:00 p.m.

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 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 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 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 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 Services’ website www.widener.edu/onestop, e-mail enrollmentservices@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 2012

| | |
|------|--|
| 100% | If withdrawal completed prior to September 5 |
| 90% | September 5 through September 14 |
| 75% | September 15 through September 24 |
| 50% | September 25 through October 5 |
| 25% | October 6 through October 15 |
| 0% | After October 15 |

Spring Semester 2013

| | |
|------|---|
| 100% | If withdrawal completed prior to January 23 |
| 90% | January 23 through February 1 |
| 75% | February 2 through February 11 |
| 50% | February 12 through February 21 |
| 25% | February 22 through March 4 |
| 0% | After March 4 |

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 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.

To sign up for direct deposit, which is our preferred method of delivery, the electronic form is available through the Web Advisor tab in CampusCruiser. Financial aid refunds are available through ACH or paper check option. Paper checks will be automatically mailed to the address on file.

WIDENER UNIVERSITY COLLECTION POLICY

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

Delinquent accounts 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 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 Services, Lipka Hall, Widener University, One University Place, Chester, PA 19013-5792; phone: 610-499-4161; fax: 610-499-4576; e-mail: enrollmentservices@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 |
| XF (Failure: Academic fraud) | 0.0 |
| P (Pass: pass/fail course) | |
| NP (Fail: pass/fail course) | |
| AU (Audit: No credit) | |
| I (Incomplete) | |
| W (Withdrawn) | |
| IP (In Progress) | |

**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 an "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, 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.

REPETITION OF COURSES

VOLUNTARY REPETITION 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 designate (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 REPETITION 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 means 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:

| Semester Hours Completed | Minimum GPA |
|--------------------------|-------------|
| 15.5 or fewer | 1.70 |
| 16 – 30.5 | 1.80 |
| 31 – 60.5 | 1.90 |
| 61 and more | 2.00 |

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 as listed.
- 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.

GENERAL EDUCATION PURPOSE STATEMENT

Widener University cultivates critical, creative, and independent thinking to develop undergraduates who demonstrate intellectual integrity, civic engagement, and potential for leadership. General education promotes awareness and synthesis of different strategies of knowing, questioning, and understanding. Through the integration of experiences both inside and outside the classroom, students learn to act as responsible citizens and to pursue knowledge beyond the boundaries of the university.

This is commonly referred to as a liberal education, which is defined as:

A philosophy of education that empowers individuals, liberates the mind from ignorance, and cultivates social responsibility. Characterized by challenging encounters with important issues, and more a way of studying than specific content, liberal education can occur at all types of colleges and universities. "General Education" and an expectation of in-depth study in at least one field normally comprise liberal education. (www.aacu-edu.org/advocacy/what_is_liberal_education.cfm)

GENERAL EDUCATION GOALS AND OBJECTIVES

1. A liberally educated graduate communicates effectively.
 - a. Gives clear presentations before a group.
 - b. Writes papers that require locating, analyzing, and formally referencing information sources to support conclusions.
2. A liberally educated graduate thinks critically.
 - a. Makes claims and draws conclusions that require the analysis and evaluation of evidence.
 - b. Synthesizes divergent content, methodologies, and models.
 - c. Makes and assesses ethical judgments.
 - d. Demonstrates an awareness of different points of view and analyzes how these are informed by factors that may include culture, ethnicity, race, socioeconomic status, gender identity, age, disabilities, language, religion, sexual orientation, or geographical area, among others.
3. A liberally educated graduate uses quantitative methods effectively.
 - a. Solves problems using mathematical methods.
 - b. Interprets, makes inferences, and draws conclusions from data.
 - c. Determines whether numerical results are reasonable.
4. A liberally educated graduate has developed a wide range of intellectual perspectives and methodologies.
 - a. Evaluates the workings of the natural and physical world

using theories and models that can be tested by experiments and observations.

- b. Evaluates social science theories and research methods related to questions of human behavior, mental processes, communication, social and cultural structures, and institutions.
- c. Evaluates philosophical, historical, and aesthetic arguments, evidence, and artifacts.

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 satisfy distribution requirements:

Humanities

art history
art studio
creative writing
dance
English (excluding ENGL 100, 101, 111)
fine arts
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)
communication studies (COMS 130, 180, 213, 220, 230, 250, 251, 275, 280, 285, 290, 316, 330, 335, 375, 380, 390)
political science
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 writing 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.

| Semester | School/Major | Minimum Score |
|------------------|-----------------------------------|---------------|
| Freshman Fall | Education | 3 |
| Sophomore Fall | Education, A&S, Nursing, Business | 4 |
| Sophomore Spring | Social Work, Engineering | 4 |
| Junior Fall | Education, A&S, Nursing, Business | 5 |
| Junior Spring | Social Work, Hospitality | 5 |

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, or equivalent.

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:

| | |
|--|----------------------------|
| <i>A student transferring in as a:</i> | <i>Must complete:</i> |
| 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 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 neither 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

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 Division of Continuing Studies, 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

During the drop/add period as established by the registrar, students can change their class schedule by dropping and adding classes online. 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 students who reduce their course load to less than 12 credits. Students are encouraged to select their courses carefully and make all adjustments during the drop/add period.

If a student cannot add a course online because it is closed or for some other reason, the student will need to bring a Drop/Add form signed by his or her advisor to Enrollment Services in Lipka Hall.

A student can drop a course online within the first six days of the semester without creating record.

Any student desiring to withdraw from a course after the first six days must submit to Enrollment Services a Drop/Add form signed by his or her advisor and the instructor of the course. Any student who withdraws from a course after the first six days of the semester but prior to the last four weeks of the semester will be given a grade of “W” (withdrawal). A grade of “W” does not affect the student’s cumulative average. *If a student drops a class during the last four weeks of the semester without the signed approval of the associate provost or stops attending a class at any time without officially withdrawing from*

the class through Enrollment Services, 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 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 21).

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 third week, 75 percent at the beginning of week five, 50 percent for weeks five and six, and 25 percent to the beginning of week eight. No adjustment will be granted after the end of this period. 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 begins at the point of reentry. All courses taken at Widener are 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

ACADEMIC INTEGRITY POLICY

The Academic Integrity Policy was approved by the Faculty Council. Additional 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.

STATEMENT ON ACADEMIC INTEGRITY

Widener University strongly supports the concept of 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 unacceptable; they are serious violations of university policy. In some circumstances, students' conduct may require review under the research integrity policy, the freedom to learn policy, the judicial review policy, and other university policies. Widener University expects all students to be familiar with university policies on academic integrity, as outlined in this catalog. The university 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.

VIOLATIONS OF ACADEMIC INTEGRITY

Violations of academic integrity constitute academic fraud. Academic fraud consists of any action that serves to undermine the integrity of the academic process or that gives the student an unfair advantage, including:

- inspecting, duplicating or distributing test materials without authorization.
- cheating, attempting to cheat, or assisting others to cheat.
- altering work after it has been submitted for a grade.
- plagiarizing.
- using or attempting to use anything that constitutes unauthorized assistance.
- fabricating, falsifying, distorting, or inventing any information, documentation, or citation.

Each student's program may have on record additional specific acts particular to a discipline that constitutes academic fraud. These specific acts are specified in relevant handbooks or course syllabi.

STATEMENT ON PLAGIARISM

One of the most common violations of 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 definitions of plagiarism. In classes where a definition is not provided, students will be held to the definition of plagiarism that follows:

Definition of Plagiarism

Plagiarism—submitting 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 citations. When a student paraphrases a work, it is still necessary to cite the original source. Merely rearranging a sentence or changing a few words is not sufficient. The citation style should be appropriate for the discipline and should clearly indicate the beginning and ending of the referenced material. All sources used in the preparation of an academic paper must also be listed with full bibliographic details at the end of the paper, as appropriate in the discipline.

FACULTY AND STUDENT RESPONSIBILITIES

- Every student, faculty member, and administrator is responsible for upholding the highest standards of academic integrity. Every member of the Widener community shall honor the spirit of this policy by refusing to tolerate academic fraud.
- When expectations for a course are not addressed in this policy, it is the responsibility of the instructor to provide students with additional guidelines for what constitutes “authorized” and “unauthorized” assistance.
- It is the responsibility of every student to seek clarification if in doubt about what constitutes “authorized” and “unauthorized” assistance. In cases of collaborative work, all students within the collaborative group may be responsible for “unauthorized” assistance to any individual student within the collaborative group.
- Students are required to obtain permission prior to submitting work, any part of which was previously or will be submitted in another course. The instructor has the option of accepting, rejecting, or requiring modification of the content of previously or simultaneously submitted work.

A student who suspects that a violation of academic integrity has occurred should report that violation to the associate provost for undergraduate academic affairs or their dean. In this report, the student should describe any action taken, such as talking with the person involved or with a faculty or staff member. Every effort will be made to preserve the anonymity of the student reporting the incident; however, confidentiality cannot be guaranteed.

RESOLUTION AT THE FACULTY/STUDENT LEVEL

Process

- A faculty member who becomes aware of possible academic fraud should inform the suspected student(s) in writing and send a copy to the Office of the Associate Provost for Undergraduate Academic Affairs.
- The faculty member will also provide the student with the opportunity to respond to the charges within five business days. If the student fails to respond to this opportunity, the student forfeits any right to appeal the decision to the school or college level where the course is taught and the faculty member will determine the penalty.
- The faculty member and student will discuss the academic fraud and agree to pursue student/faculty resolution, or, if no such agreement is reached, the matter will be referred at the school or college level where the course is taught.
- If the faculty member is not satisfied with the sanctions available, he or she may refer the case at the school or college level by informing the dean responsible for the course in question.

- If the student does not accept responsibility for the academic fraud or disagrees with the sanction imposed by the faculty member, the student may appeal the outcome at the school or college level.

Penalties

The suggested penalty for academic fraud in any course is failure in the course. However, faculty members may take alternative steps. Penalties available to faculty members include:

- Formal warning.
- Reduction in grade for the assignment.
- Reduction in the grade for the course.
- Failing grade for the assignment.
- A failing grade (F) in the course.
- A failing grade (XF) in the course (a grade of XF will appear on the transcript and be defined on the transcript as failure as a result of academic fraud).

Reporting, and Offenses Subject to Expulsion

In all cases where a faculty member informs a student of possible academic fraud, the faculty member will inform the Office of the Associate Provost for Undergraduate Academic Affairs as the office of record.

In cases where a faculty member takes action for a case of academic fraud, the faculty member will send a report describing the academic fraud and the penalty being imposed to the student, the dean of the school or college where the course involved is taught, the dean of the school or college where the student is enrolled, and the Office of the Associate Provost for Undergraduate Academic Affairs as the office of record.

All reports of academic fraud will be reviewed by the associate provost for undergraduate academic affairs to verify whether reports have been received indicating that the student has been found responsible for any other act of academic fraud. In cases where the associate provost finds that the case is a repeat offense where the student has received a failing grade (F or XF) in a course for each offense or a case where a student has stolen or attempted to steal an examination, the associate provost will expel the student from the university. The student may appeal cases resulting in expulsion to the Academic Review Board.

RESOLUTION AT THE SCHOOL/COLLEGE LEVEL

Process

- Cases of academic fraud outside the class will be referred to the school or college where the student is enrolled.
- Upon receiving the case, the dean of the school or college where the course is taught shall notify the student and the associate provost for undergraduate academic affairs in writing of the charge of academic fraud, the penalty to be imposed, and all rights of appeal.
- If a student wishes to contest the charge of academic fraud, the student may do so according to the process stipulated in the bylaws or *Student Handbook* of the school or college where the course is taught. In such a case, the student will also be informed of the process as stipulated by the school or college.
- In cases where the penalty results in dismissal of the student from the school or college, the student may appeal the decision at the university level in writing or by e-mail to the associate provost for undergraduate academic affairs.

Penalties

The maximum penalty imposed in school or college resolution for individuals convicted of academic fraud shall be dismissal from the school or college. Lesser penalties may include:

- Formal warning.
- Reduction in grade for the assignment.
- Reduction in the grade for the course.
- Failing grade for the assignment.
- Failing grade (F) in the course.

- A failing grade (XF) in the course (a grade of XF will appear on the transcript and be defined on the transcript as failure as a result of academic fraud).
- Required attendance at an academic integrity workshop or tutorial.

Reporting, and Offenses Subject to Expulsion

The dean will send a report describing the academic fraud and the penalty being imposed to the student, the affected faculty member(s), the dean of the school or college where the student is enrolled, and the Office of the Associate Provost for Undergraduate Academic Affairs as the office of record.

All reports of academic fraud will be reviewed by the associate provost for undergraduate academic affairs to verify whether reports have been received indicating that the student has been found responsible for any other act of academic fraud. In cases where the associate provost finds that the case is a repeat offense where the student has received a failing grade (F or XF) in a course for each offense or a case where a student has stolen or attempted to steal an examination, the associate provost will expel the student from the university. The student may appeal cases resulting in expulsion to the Academic Review Board.

RESOLUTION AT THE UNIVERSITY LEVEL

Process

The associate provost for undergraduate academic affairs will review all reports of academic fraud.

- If the associate provost for undergraduate academic affairs finds the case is a repeat offense where the student has received a failing grade (F or XF) in a course for each offense, the associate provost will expel the student from the university. The student may appeal the case to the Academic Review Board.
- If the associate provost finds the case is a repeat offense where the student has not received a failing grade for both offenses, the case will be referred to the Academic Review Board.
- If the student has stolen or attempted to steal an examination, the associate provost will expel the student from the university. The student may appeal the case to the Academic Review Board.

Penalties

The maximum penalty imposed by the Academic Review Board for individuals convicted of academic fraud shall be expulsion from the university. Penalties include:

- An XF grade in the course (a grade of XF will appear on the transcript and be defined on the transcript as failure as a result of academic fraud).
- Removal of the privilege of representing the university in extracurricular activities, including athletics, as well as the privilege of running for or holding office in any student organization that is allowed to use university facilities or receives university funds.
- Suspension from the university for up to one academic year. Students suspended for academic fraud cannot transfer into Widener any credits earned during the suspension.
- Dismissal from the university. Students dismissed for academic fraud must apply for readmission according to the Academic Review Board guidelines. Readmission applications by students suspended for academic fraud must be approved by the Academic Review Board.
- Expulsion from the university without the opportunity for readmission.

Reporting

The associate provost for undergraduate academic affairs will send a report describing the academic fraud and the penalty being imposed to the student, the affected faculty members, the

dean of the school or college where the course involved is taught, and the dean of the school or college where the student is enrolled, as well as maintain a copy as the office of record.

APPEALS/DECISIONS

When a student is expelled or dismissed by the associate provost for undergraduate academic affairs, the student may initiate his or her appeal to the Academic Review Board by notifying the associate provost for undergraduate academic affairs in writing of the request for an appeal, together with a concise statement of the grounds for the appeal.

Written notice of the student's request for appeal, together with the concise statement of the student's grounds for the appeal, must be received by the associate provost for undergraduate academic affairs no more than ten business days following the decision of the faculty, school/college, or university.

When a case is referred to the Academic Review Board, the associate provost for undergraduate academic affairs shall notify the student in writing of the time and location for the Academic Review Board hearing.

The membership of the Academic Review Board consists of the provost, the associate provost for undergraduate academic affairs, the dean of each school/college, the chair of the faculty, and the chair of the Faculty Council Academic Affairs Committee; provided, however, that any majority of the foregoing members shall constitute a quorum for purposes of conducting any matters to come before the Academic Review Board pursuant to these standards. Any faculty member on the Academic Review Board involved in the original accusations will not participate in deliberations in that case.

At an appeal before the Academic Review Board, the student shall have the opportunity to be heard and the right to produce witnesses or introduce evidence subject to the reasonable discretion of the Academic Review Board. The student may also be accompanied by a representative of his or her choosing who may not participate in the appeal. The Academic Review Board shall not be subject to any evidentiary rules but shall accept or reject evidence in its sound discretion. All appeals shall be closed to the public and no stenographic record shall be required unless requested at the expense of the requesting party. In the absence of a stenographic record, the Academic Review Board shall provide, in its sole discretion, either a recorded record or notes of the proceedings taken by a member of the Academic Review Board.

The results of all appeals to the Academic Review Board, permitted in the Academic Integrity Policy, shall be final.

Any matter submitted to a faculty member, the school/college, or the university for decision or review under this policy shall be decided in a timely manner and the parties shall use their best efforts to conclude the proceedings within the semester in which the alleged offense has occurred or the appeal is received; provided, however, that any delay in the proceedings shall in no way operate as a waiver of the university's right to assess any or all of the sanctions permitted hereunder.

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.

FINAL EXAMINATION POLICY

For undergraduate Main Campus day classes offered during the fall and spring semester, an exam worth more than 30 percent of the final grade may not be given during the last five calendar days of classes.

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 the examination. 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 extramural organization, must be open to all students without regard to sex, age, race, nationality 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 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, 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 (PII) 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 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 also may include a volunteer or contractor outside of the university who performs an institutional service or function for which the university would otherwise use its own employees and who is under the direct control of the university with respect to the use and maintenance of PII from education records, such as an attorney, auditor, contractor, consultant, or collection agent. 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, 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.

- Satisfactory score on the Mathematics Assessment or completion of MATH 101.
- 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 a Petition to Graduate form. This form is found online in CampusCruiser under Web Advisor, then Academic Profile, then “Petition to Graduate—Main Campus.”

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 the School of Education, Innovation and Continuing Studies 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 IP (in progress) 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 Scholastic Achievement Award is given to a senior chemistry major in recognition of outstanding achievement in chemistry.

The American Institute of Chemists Award for Chemical Engineering is granted to a senior majoring in chemical engineering for scholarship in that field.

The American Institute of Chemists Foundation Award is given to an outstanding senior majoring in chemistry major in recognition of a demonstrated record of ability, leadership, and professional promise. Candidates are chosen and nominated by faculty members.

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 Biology Award is given annually by the biology faculty to a senior biology major with an outstanding academic record and demonstrated excellence in biological research. The Biology Award is funded by donations from alumni, faculty, and friends of the biology department.

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 Eleanore 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 German 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 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 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 given to graduating seniors in recognition of their excellence in tutoring. This award is sponsored by the College Reading and Learning Association.

The Kathryne 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 Hildegard E. Peplau 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 provides 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 SBA 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 to a deserving alumnus of the Crozer Foundation, PMC Colleges, or Widener University. The recipient must have made an outstanding contribution to the nursing profession 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. Wolfgram 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.

PRIDE EXPERIENCE 1 (SUMMER REGISTRATION) AND PRIDE EXPERIENCE 2 (ORIENTATION)

New student registration to Pride Experience 1 is held on the Main Campus during the summer. All freshmen are expected to attend. In addition, a comprehensive three-day Pride Experience 2 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 academically or culturally enriching events during each academic year. Two of these eight events must be during Honors Week in the spring semester, and one event must be service-related. 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.

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 entering 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 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, political science, 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 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 chiropractics 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 MD, the doctor of optometry, the doctor of podiatric medicine, or the doctor of osteopathy exist between Widener University and St. George's University, 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 curricula 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 BS/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, Delaware, New Jersey, and Maryland and who are particularly inclined toward careers in family medicine, general internal medicine, and pediatrics. Students should contact the chair of the Pre-Medical Committee for more information.

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 12 may be taken to fulfill graduation requirements. See "Course Descriptions" for more information.

OPEN MAJOR

The open major enables Widener students to design their own interdisciplinary program. It was created to encourage students 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 Career Services staff 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 typically attendance is 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.

In addition, there are two summer sessions during evening hours, each six weeks in length, Saturday Studies, and online programs offered by the Division of Continuing Studies.

CAMPUS SAFETY

CAMPUS SECURITY AND FIRE SAFETY REPORTS

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

The Fire Safety Report contains information on fire safety systems in on-campus student housing facilities, the number of

fire drills held during the previous year, the university's policies on portable electrical appliances, smoking, and open flames in student housing facilities, the university's procedures for student housing evacuation in the case of a fire, policies regarding fire safety education and training programs provided to students and employees, a listing of persons or organizations to which fires should be reported, and plans for future improvements in fire safety. It also contains statistics for the three most recent calendar years concerning the number of fires and cause of each fire in each on-campus student housing facility, the number of persons who received fire-related injuries that resulted in treatment at a medical facility, the number of deaths related to a fire, and the value of property damage caused by a fire.

The Campus Safety and Fire Safety Reports for the Main and Exton Campuses are available at www.widener.edu/campusafety. The annual security reports for the Delaware and Harrisburg Campuses are available online at www.law.widener.edu by selecting "More Links," 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.

PROJECT PREPARE

In 1969, Widener launched Project Prepare 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, math, and success/study skills. 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 earn a "C" or better in all of their course work, 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.

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 Admissions at 610-499-4129.

ROTC PROGRAMS

ARMY ROTC

The Department of Military Science offers a program of leadership development through study and practical application 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 and is eligible for assignment with the Active or Reserve Forces of the U.S. Army.

There are three basic ways to participate in Army ROTC:

- The first is to be a participating student. These students register for the military science classes only (101 through 202). Since they are not enrolled as cadets, they are not covered for any liability beyond that of the university and therefore DO NOT participate in activities outside the classroom (e.g., physical training, leadership labs, and field training).
- The second and most common way is to be an enrolled cadet. These students fully participate in ROTC by taking the military science classes, physical fitness training, leadership labs, and field training. Enrolled cadets are covered by the government for any injuries occurring during ROTC sanctioned training. They wear the Army uniform to all ROTC functions and must adhere to military customs and standards. Unless under contract, enrolled cadets are NOT obligated to future military service.
- The third category is to be a contracted cadet. Contracted cadets fully participate like other enrolled cadets, but they are also under obligation to future military service. Scholarship winners must contract to receive benefits. Non-scholarship cadets must contract by the MS III/junior year in order to continue in the program.

For more information, contact the Widener University ROTC enrollment officer at 610-499-4098 or visit the ROTC office at the rear of 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 introduces students to self development tools and 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. Students develop their leadership abilities by learning critical thinking, the value of character, competence and courage, self discipline, and team building. Students also challenge themselves through participation in activities such as physical fitness, orienteering, rappelling, small unit tactics, marksmanship, and leadership reaction courses

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 may be awarded for participation in JROTC in high school, completion of the four-week Leader’s Training Course at Fort Knox, Kentucky, 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 full Leadership Development Program, which includes physical

training, leadership labs, and off-site field training exercises. 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 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 receive credit for the Basic Course, as explained in the Advanced Course section above, or attend a four-week Army ROTC Leader’s Training Course (LTC) at Fort Knox, Kentucky, prior to the start of the junior year (or first year of graduate school). Students are paid approximately \$750 plus travel expenses while attending LTC and may qualify for a \$5,000 contracting bonus. Students interested in entering the two-year ROTC program must apply to the professor of military science prior to March 1 of their sophomore year. Students may compete for two-year Army ROTC scholarships, depending on availability of funds.

SIMULTANEOUS MEMBERSHIP PROGRAM

Students who are already members of or intend to join a U.S. Army Reserve (USAR) or Army National Guard (ARNG) unit may qualify for this program as early as their sophomore year. If accepted, students become officer trainees and are paid as sergeants (E-5) during reserve training assemblies until they have completed ROTC and are commissioned. During the years in ROTC, students are paid \$350–500 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 Duty or Dedicated USAR/ARNG Scholarship, in which case they are committed to serving in the Reserve Component upon commissioning. As members of the USAR or ARNG, students may also qualify for other financial programs, such as federal tuition assistance, state education assistance programs, and the Montgomery GI Bill–Selected Reserve.

SERVICE OBLIGATION

Students commissioned as second lieutenants are required to serve for a period of eight years. How this obligation is fulfilled is determined by whether the student was a scholarship or non-scholarship cadet, and whether the student serves on Active Duty or in the Reserve Component. Those selected for Active Duty will typically serve 3 to 4 years full time, with the remaining 5 or 4 years in the inactive reserve (available for recall). Those choosing or selected for the Reserve Component typically serve for 6 to 8 years part time in a drilling status (one weekend a month plus two weeks per year, other than periods of active duty for training or mobilization); their remaining years of obligation, if any, can be served in the inactive reserve.

ARMY ROTC SCHOLARSHIP PROGRAM

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

For more information regarding the ROTC programs, see pages 68 and 192.

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 communicates effectively.
 - 1.1 Students will give a presentation before a group.
 - 1.2 Students will write papers that require locating, analyzing, and formally referencing information sources to support conclusions.
2. A liberally educated person uses quantitative methods effectively.
 - 2.1 Students will use mathematical methods to solve problems.
 - 2.2 Students will interpret, make inferences, and draw conclusions from data presented in tabular or graphical form.
 - 2.3 Students will determine if numerical results are reasonable.
3. A liberally educated person appreciates diversity and possesses the intellectual foundations of a variety of disciplines, including their histories and processes of knowledge construction, and the understanding necessary to apply their backgrounds to the theories and models of those disciplines.
 - 3.1 Students will have the intellectual background to understand how science explains the workings of the natural and physical world using theories and models that can be tested using experiments and observations.
 - 3.2 Students will understand and apply social science theories and qualitative and quantitative methods to questions of human behavior, mental processes, communication, and social and cultural structures and institutions.
 - 3.3 Students will acquire historical and aesthetic knowledge, and use analysis and interpretation to evaluate and critique historical and aesthetic context, evidence, artifacts, and arguments.
4. A liberally educated person thinks, reads, and communicates critically and understands and uses frameworks of ethical judgment.
 - 4.1 Students will examine, evaluate, and refine their habits of thinking, and accept ambiguity while questioning assumptions and ideas.
 - 4.2 Students will make claims and draw conclusions supported by the marshalling and evaluation of evidence.
 - 4.3 As reflective learners and thinkers across and within disciplines, students will synthesize divergent contents, methodologies, and models.
 - 4.4 Students will develop the theoretical tools and imaginative capacity to make ethical judgments and effectively empathize with others.

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:

- MATH 101 or at least Level 3 on the Mathematics Assessment.
- 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 must 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 sciences 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, political science, 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 six 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
international relations
political science
psychology
sociology

Interdisciplinary Majors

gender and women's studies
media informatics

Science Majors

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

Double Majors

criminal justice/political science
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, the sciences, and social studies. Students interested in the teaching profession should consult the "Center for Education" section.

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.

Humanities Minors

arts administration
creative writing
English
French
health care writing
history
Italian
music
professional writing
Spanish
visual art

Social Science Minors

anthropology
communication studies
criminal justice
international relations
political science
psychology
sociology

Science Minors

astronomy
biochemistry
biology
chemistry
computer information systems
computer science
environmental science
experimental science
mathematics
natural science
physics

Interdisciplinary Minors

African & African American studies
environmental studies
gender and women's studies

Pre-Law Minor

legal studies and analysis

Certificate

health care writing

INTERDISCIPLINARY MINORS

Within the College of Arts and Sciences, minors are offered in each of the three divisions: humanities, social science, and science. The college also offers several interdisciplinary minors. 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.

MINOR IN AFRICAN AND AFRICAN AMERICAN STUDIES

The interdisciplinary minor in African and African American Studies offers students an opportunity to explore the experiences of Africans and African-descended peoples in the diaspora from a variety of methodological viewpoints. The curriculum enables students to examine theories of race and how race intersects with gender, sexuality, class, and other factors in a variety of historical and contemporary settings.

For the minor, students are required to complete AFAS 101 Introduction to African and African American Studies and 18 credit hours of electives. In the process of completing the 18 hours of electives, students must take courses that address these four learning outcomes:

1. historical awareness of African and African American peoples
2. critical analysis of the cultures of African and African American peoples
3. analysis of institutions in Africa and the Americas that are shaped by and contribute to views on race
4. evaluation of theoretical viewpoints on race and how race intersects with other categories of analysis

REQUIREMENTS—AFRICAN AND AFRICAN AMERICAN STUDIES MINOR

Required Course (3 credits)

AFAS 101 Intro. to African & African American Studies

Electives (18 credits)*

At least one course from each of the following Outcome categories:

Historical Awareness (Outcome 1)

HIST 376 Slavery & Abolition (diaspora)

HIST 378 The Segregated South (diaspora)

HIST 383 The Civil Rights Movement (diaspora)

Cultural Analysis (Outcome 2)

AH 360 African Art (Africa)

ENGL 363 Literature in English after Empire* (Africa or diaspora)

ENGL 369 African American Literature (diaspora)

FREN 310 Intro. to French & Francophone Short Stories (Africa)

SOC 245 Rap, Hip Hop, & Society (diaspora)

SOC 275 African & African American Women in Society (Africa or diaspora)

Institutional Analysis (Outcome 3)

CJ 235 Race/Ethnicity, Class, Crime, & Justice (diaspora)

Theoretical Viewpoints (Outcome 4)

ANTH 255 Race & Racism (diaspora)

ENGL 363 Literature in English after Empire* (Africa or diaspora)

PSY 215 Multicultural Psychology (diaspora)

SOC 235 Minorities in American Society (diaspora)

TOTAL CREDITS **21**

*Specific A&S Values Seminars and 188, 288, and 388 courses (Special Topics) are approved for a particular outcome on a case-by-case basis. Please see the Advising Alert for up-to-date information. No course may count toward fulfilling more than one outcome.

Students must take:

- at least 9 credits at the 300 level.
- no more than 9 credits in a single discipline.
- at least one course with a primary focus on Africa.
- at least one course with a primary focus on the African diaspora.

MINOR IN ENVIRONMENTAL STUDIES

The environmental studies minor is designed primarily for students in the arts and sciences who have an interest in environmental issues and policies. This minor provides students with the necessary interdisciplinary academic knowledge to understand complex environmental issues and the social, political, and cultural contexts that affect human interaction with the environment. Specifically, the curriculum is designed to provide students with an opportunity to apply knowledge from the scientific disciplines in conjunction with the principles of social science to help address some of our most pressing local, regional, and global environmental problems.

REQUIREMENTS—

ENVIRONMENTAL STUDIES MINOR* CREDITS

Introduction to ENVR

ENVR 100 or ENVR 171 3

ENVR 173 Investigating Environmental Science 1

Environmental Sustainability

ENVR 172 Principles of Sustainability Science 3

ENVR Foundation and Elective Courses (Select Two):

ENVR 201 Environmental Geology 4

ENVR 207 Oceanography 4

ENVR 209 Meteorology 4

ENVR 261 Geographic Information Systems 4

Global Perspective (Select One):

ANTH 251 Progress & Poverty 3

POLS 204 Current Issues In World Affairs 3

SOC 240 Gender and International Development 3

Politics and Policy (Select One):

POLS 205 Public Policy 3

POLS 215 Environmental Politics & Policy 3

Societal, Legal, & Economic Context (Select One):

EC 201 Macroeconomics 3

EC 202 Microeconomics 3

POLS 218 Law & Society 3

SOC 266 Class Society 3

TOTAL CREDITS **24**

* 200-level ANTH, EC, POLS, and SOC courses can all be completed without prerequisites in the respective departments

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.

Continued on next page

MINOR IN LEGAL STUDIES AND ANALYSIS*

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

Two courses from the following:

POLS 319 Introduction to Constitutional Law**
POLS 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 52.

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 141 & 142 Calculus I and II **or**
MATH 131 & 132 Calculus I and II with review **or**
MATH 117 Elementary Functions *and*
MATH 118 Elementary Calculus I
Physics with laboratory—8 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 or higher 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. Humanities faculty are 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

Credits

| | |
|---------------------------------------|------------------|
| Freshman Fall | 15.5/16.5 |
| ENGL 101 | 3 |
| Humanities requirement | 3 |
| Math requirement | 3/4 |
| Social science requirement | 3 |
| CRWR 151 | 3 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 15.5/16.5 |
| ENGL 102 | 3 |
| Humanities requirement | 3 |
| Science requirement | 3/4 |
| Social science requirement | 3 |
| ENGL 131, 132, 133, 134, or 135 | 3 |
| Physical Education Elective | 0.5 |
| Sophomore Fall | 15/16 |
| ENGL 131, 132, 133, 134, or 135 | 3 |
| Science requirement | 3/4 |
| Social science requirement | 3 |
| Electives | 6 |
| Sophomore Spring | 15/16 |
| Humanities requirement | 3 |
| Science requirement | 3/4 |
| Social science requirement | 3 |
| Electives | 6 |
| Junior Fall | 15 |
| CRWR 305, 306, 307, or 308 | 3 |
| Advanced English courses | 6 |
| Advanced humanities course | 3 |
| Advanced writing course | 3 |
| Junior Spring | 15 |
| CRWR 305, 306, 307, or 308 | 3 |
| Advanced English courses | 6 |
| Advanced writing course | 3 |
| Elective | 3 |

| | |
|----------------------------------|----------------|
| Senior Fall | 15 |
| CRWR 305, 306, 307, or 308 | 3 |
| CRWR 361 | 3 |
| Advanced English course | 3 |
| Advanced writing course | 3 |
| ASC 400 Values Seminar | 3 |
| Senior Spring | 15 |
| CRWR 305, 306, 307, or 308 | 3 |
| CRWR 409 | 3 |
| Advanced English course | 3 |
| Electives | 6 |
| TOTAL CREDITS | 121-125 |

A minimum of 9 credits of advanced English should be in courses before 1800, and a minimum of 9 credits in courses after 1800.

CREATIVE WRITING MAJOR PORTFOLIO

Prospective creative writing majors must submit for evaluation a 10-page writing sample featuring work in at least two of the following categories: fiction, poetry, creative nonfiction, and drama. This portfolio, which will be evaluated by creative writing faculty, must be submitted at the end of the semester during which the student has declared his or her intention to major in creative writing. Students who are not initially invited to continue in the program may submit another portfolio at the end of the following semester. If, in the opinion of the faculty, this second portfolio still does not meet the basic standards for the creative writing program, the student will not be able to continue as a creative writing major. Please see the creative writing faculty for information about portfolio design, evaluation standards, and so on.

REQUIREMENTS—CREATIVE WRITING MINOR

| | |
|--|-----------|
| CRWR 151 | 3 |
| CRWR 305, 306, 307, 308 (3 of 4) | 9 |
| CRWR 351, 361, 379 (2 of 3) | 6 |
| 300-level English course | 3 |
| TOTAL CREDITS | 21 |

ENGLISH

| CURRICULUM—ENGLISH | Credits |
|---------------------------------------|------------------|
| Freshman Fall | 15.5/16.5 |
| English 101 | 3 |
| Humanities requirement | 3 |
| Math requirement | 3/4 |
| Social science requirement | 3 |
| ENGL 131, 132, 133, 134, or 135 | 3 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 15.5/16.5 |
| English 102 | 3 |
| Humanities requirement | 3 |
| Science requirement | 3/4 |
| Social science requirement | 3 |
| ENGL 131, 132, 133, 134, or 135 | 3 |
| Physical Education Elective | 0.5 |
| Sophomore Fall | 15/16 |
| Humanities requirement | 3 |
| Science requirement | 3/4 |
| Social Science requirement | 3 |
| Electives | 6 |

| | |
|----------------------------------|--------------|
| Sophomore Spring | 15/16 |
| Humanities requirement | 3 |
| Science requirement | 3/4 |
| Social science requirement | 3 |
| ENGL 301 | 3 |
| Elective | 3 |

| | |
|----------------------------------|-----------|
| Junior Fall | 15 |
| Advanced English courses | 6 |
| Advanced humanities course | 3 |
| Electives | 6 |

| | |
|----------------------------------|-----------|
| Junior Spring | 15 |
| Advanced English courses | 6 |
| Advanced humanities course | 3 |
| Electives | 6 |

| | |
|--------------------------------|-----------|
| Senior Fall | 15 |
| Advanced English courses | 6 |
| Senior Seminar | 3 |
| Electives | 6 |

| | |
|--------------------------------|-----------|
| Senior Spring | 15 |
| Advanced English courses | 6 |
| Electives | 6 |
| ASC 400 Values Seminar | 3 |

TOTAL CREDITS 121-125

A minimum of 9 credits of advanced English should be in courses before 1800, and a minimum of 9 credits 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 | Credits |
|---|----------------|
| 100-level English courses (selected from ENGL 131, 132, 133, 134, 135) | 6 |
| 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) | 15 |

TOTAL CREDITS 21

CURRICULUM—DUAL CREATIVE WRITING AND ENGLISH **Credits**

| | |
|---------------------------------------|------------------|
| Freshman Fall | 15.5/16.5 |
| ENGL 101 | 3 |
| Humanities requirement | 3 |
| Math requirement | 3/4 |
| Social science requirement | 3 |
| CRWR 151 | 3 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 15.5/16.5 |
| ENGL 102 | 3 |
| Humanities requirement | 3 |
| Science requirement | 3/4 |
| Social science requirement | 3 |
| ENGL 131, 132, 133, 134, or 135 | 3 |
| Physical Education Elective | 0.5 |
| Sophomore Fall | 15/16 |
| ENGL 131, 132, 133, 134, or 135 | 3 |
| Science requirement | 3/4 |
| Social science requirement | 3 |
| Electives | 6 |
| Sophomore Spring | 15/16 |
| Humanities requirement | 3 |
| Science requirement | 3/4 |
| Social science requirement | 3 |
| ENGL 301 | 3 |
| Elective | 3 |
| Junior Fall | 15 |
| CRWR 305, 306, 307, or 308 | 3 |
| Advanced English courses | 6 |
| Advanced humanities course | 3 |
| Advanced writing course | 3 |
| Junior Spring | 15 |
| CRWR 305, 306, 307, or 308 | 3 |
| Advanced English courses | 6 |
| Advanced writing course | 3 |
| Elective | 3 |
| Senior Fall | 15 |
| CRWR 305, 306, 307, or 308 | 3 |
| CRWR 361 | 3 |
| ENGL 409 | 3 |
| Advanced writing course | 3 |
| ASC 400 Values Seminar | 3 |
| Senior Spring | 15 |
| CRWR 305, 306, 307, or 308 | 3 |
| CRWR 409 | 3 |
| Advanced English courses | 6 |
| Elective | 3 |

TOTAL CREDITS **121-125**

A minimum of 9 credits of advanced English should be in courses before 1800, and a minimum of 9 credits in courses after 1800.

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 **Credits**

| | |
|---|-------|
| PRWR 100 | 3 |
| PRWR 320 | 3 |
| PRWR 350 | 3 |
| PRWR 370 | 3 |
| PRWR 380 | 3 |
| PRWR 405 | 3 |
| PRWR 410 | 1 |
| HUM 340 or 341 | 3 |
| PHIL 350 or 352 or 379 | 3 |
| One course selected from: PSY 211, PSY 212, PSY 325, PSY 350, or SOC 310 | 3 |
| One course selected from: BIOL 299, MATH 114, PSY 381, PSY 385, or QA 251 | 3/4 |
| One biology sequence selected from: BIOL 121, 122, 230; or BIOL 161, 162, 261, 262 | 11/16 |
| One chemistry sequence selected from: CHEM 101, 102, 103, 104; or CHEM 105, 106; or CHEM 145, 146, 147, 148 | 4/8 |

TOTAL CREDITS **46-56**

Note: Some courses may have prerequisites or corequisites.

REQUIREMENTS—PROFESSIONAL WRITING MINOR **Credits**

| | |
|---|---|
| PRWR 100 or PRWR 110 | 3 |
| PRWR 215 | 3 |
| PRWR 320 | 3 |
| PRWR 350 | 3 |
| Three courses selected from: PRWR 310, 330, 340, 370, 380, 388, 390, 395, 405 | 9 |
| Practicum: | |
| PRWR 021 (3 semesters) | 0 |
| PRWR 121 | 2 |
| PRWR 410 | 1 |

TOTAL CREDITS **24**

FINE ARTS

| CURRICULUM—FINE ARTS | Credits |
|--|------------------|
| Freshman Fall | 15.5/16.5 |
| AH 101 or MUS 101 | 3 |
| English 101 | 3 |
| Humanities requirement | 3 |
| Math requirement | 3/4 |
| Social science requirement | 3 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 15.5/16.5 |
| English 102 | 3 |
| Humanities requirement | 3 |
| Science requirement | 3/4 |
| Social science requirement | 3 |
| Physical Education Elective | 0.5 |
| Practicum or elective | 3 |
| Sophomore Fall | 15/16 |
| AH 101 or MUS 101 | 3 |
| ARTS 401 | 3 |
| Science requirement | 3/4 |
| Social science requirement | 3 |
| Practicum or elective | 3 |
| Sophomore Spring | 15/16 |
| Humanities requirement | 3 |
| Science requirement | 3/4 |
| Social science requirement | 3 |
| Electives | 6 |
| Junior Fall | 15 |
| 300-level art history | 3 |
| 300-level music history | 3 |
| 300-level AH, 300-level ARTS, 300-level MUS, or ENGL 325, 336, 338, 362 | 3 |
| PHIL 380 | 3 |
| Elective | 3 |
| Junior Spring | 15 |
| 300-level art history | 3 |
| 300-level music history | 3 |
| 300-level AH, 300-level ARTS, 300-level MUS, or ENGL 325, 336, 338, 362 | 3 |
| Electives | 6 |
| Senior Fall | 15 |
| 300-level art history | 3 |
| 300-level music history | 3 |
| ARTS 409 (Senior Seminar) | 3 |
| Electives | 6 |
| Senior Spring | 15 |
| ASC 400 Values Seminar | 3 |
| 300-level humanities electives | 6 |
| Electives | 6 |
| TOTAL CREDITS | 121-125 |

CURRICULUM—FINE ARTS WITH ARTS MANAGEMENT CONCENTRATION

| | Credits |
|--|------------------|
| Freshman Fall | 15.5/16.5 |
| AH 101 or MUS 101 | 3 |
| English 101 | 3 |
| Humanities requirement | 3 |
| Math requirement | 3/4 |
| Social science requirement | 3 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 15.5/16.5 |
| English 102 | 3 |
| Humanities requirement | 3 |
| Science requirement | 3/4 |
| Social science requirement | 3 |
| Physical Education Elective | 0.5 |
| Practicum or elective | 3 |
| Sophomore Fall | 15/16 |
| AH 101 or MUS 101 | 3 |
| ARTS 111 | 3 |
| ARTS 401 | 3 |
| ECON 201 | 3 |
| Science requirement | 3/4 |
| Sophomore Spring | 15/16 |
| ACCT 204 | 3 |
| ECON 202 | 3 |
| MGT 210 | 3 |
| Science requirement | 3/4 |
| Practicum or elective | 3 |
| Junior Fall | 15 |
| ARTS 311 | 3 |
| PHIL 380 | 3 |
| 300-level art history | 3 |
| 300-level music history | 3 |
| 300-level AH, 300-level ARTS, 300-level MUS, or ENGL 325, 336, 338, 362 | 3 |
| Junior Spring | 15 |
| 300-level art history | 3 |
| 300-level music history | 3 |
| 300-level AH, 300-level ARTS, 300-level MUS, or ENGL 325, 336, 338, 362 | 3 |
| Humanities requirements | 6 |
| Senior Fall | 15 |
| ARTS 409 (Senior Seminar) | 3 |
| MKT 300 | 3 |
| PRWR 390 | 3 |
| 300-level art history | 3 |
| 300-level music history | 3 |
| Senior Spring | 15 |
| ASC 400 Values Seminar | 3 |
| 300-level humanities electives | 6 |
| Electives | 6 |
| TOTAL CREDITS | 121-125 |

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 112–119.

ARTS MINOR

| CONCENTRATION IN ART | Credits |
|--|-----------|
| AH 101 and 102 | 6 |
| Three additional art history courses | 9 |
| AS 111, 112, 121, 122, 131, or 301 | 3 |
| MUS 101 and 102 | 6 |
| Elective—To be taken as an additional 300-level course in art history, creative writing, music, or aesthetics (PHIL 380) | 3 |
| TOTAL CREDITS | 27 |

| CONCENTRATION IN MUSIC | Credits |
|--|-----------|
| MUS 101 and 102 | 6 |
| MUS 120 | 3 |
| Two additional 300-level music courses | 6 |
| Music Activity | 3 |
| AH 101 and 102 | 6 |
| Elective—To be taken as an additional 300-level course in art history, creative writing, music, or aesthetics (PHIL 380) | 3 |
| TOTAL CREDITS | 27 |

| CONCENTRATION IN ARTS ADMINISTRATION | Credits |
|--|-----------|
| ACCT 204 | 3 |
| AH 102 | 3 |
| ARTS 111 | 3 |
| ARTS 311 | 3 |
| EC 202 | 3 |
| MKT 300 | 3 |
| MUS 102 | 3 |
| Two from AH 301, 302, 303, 304, 305, 306, 310, 312, 314, 321, 322, 370 | 6 |
| Two from MUS 306, 307, 308, 309, 371, 391 | 6 |
| One from 300-level AH, 300-level MUS, ENGL 325, 336, 338, 362 | 3 |
| TOTAL CREDITS | 36 |

HISTORY

| CURRICULUM—HISTORY | Credits |
|--|------------------|
| Freshman Fall | 15.5/16.5 |
| ENGL 101 | 3 |
| Humanities requirement | 3 |
| Math requirement | 3/4 |
| Social science requirement | 3 |
| HIST 100, 101, 102, 104, 111, 112, 121, or 122 | 3 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 15.5/16.5 |
| ENGL 102 | 3 |
| Humanities requirement | 3 |
| Science requirement | 3/4 |
| Social science requirement | 3 |
| HIST 100, 101, 102, 104, 111, 112, 121, or 122 | 3 |
| Physical Education Elective | 0.5 |
| Sophomore Fall | 15/16 |
| HIST 100, 101, 102, 104, 111, 112, 121, or 122 | 3 |
| Humanities requirement | 3 |
| Science requirement | 3/4 |
| Social science requirement | 3 |
| Elective | 3 |

| | |
|--|--------------|
| Sophomore Spring | 15/16 |
| HIST 100, 101, 102, 104, 111, 112, 121, or 122 | 3 |
| HIST 401 | 3 |
| Humanities requirement | 3 |
| Science requirement | 3/4 |
| Social science requirement | 3 |
| Junior Fall | 15 |
| Advanced history courses | 6 |
| Advanced humanities course | 3 |
| Electives | 6 |
| Junior Spring | 15 |
| Advanced history course | 3 |
| Advanced humanities course | 3 |
| Elective | 9 |
| Senior Fall | 15 |
| Advanced history courses | 9 |
| Senior Seminar | 3 |
| Electives | 3 |
| Senior Spring | 15 |
| Advanced history courses | 6 |
| Electives | 6 |
| ASC 400 Values Seminar | 3 |
| HIST 021 | 0 |

TOTAL CREDITS 121-125

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.

CURRICULUM—MODERN LANGUAGES (FRENCH OR SPANISH MAJOR)

| | Credits |
|---|------------------|
| Freshman Fall | 15.5/16.5 |
| ENGL 101 | 3 |
| Humanities requirement | 3 |
| Math requirement | 3/4 |
| Social science requirement | 3 |
| FREN 101 or SPAN 101 | 3 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 15.5/16.5 |
| ENGL 102 | 3 |
| Humanities requirement | 3 |
| Science requirement | 3/4 |
| Social science requirement | 3 |
| FREN 102 or SPAN 102 | 3 |
| Physical Education Elective | 0.5 |
| Sophomore Fall | 15/16 |
| FREN 201 or SPAN 201 | 3 |
| Humanities requirement | 3 |
| Science requirement | 3/4 |
| Social science requirement | 3 |
| Elective | 3 |
| Sophomore Spring | 15/16 |
| FREN 202 or SPAN 202 | 3 |
| Humanities requirement | 3 |
| Science requirement | 3/4 |
| Social science requirement | 3 |
| Elective | 3 |
| Junior Fall | 15 |
| FREN 301 or SPAN 301 | 3 |
| Civilization and culture course | 3 |
| Advanced FREN or SPAN: Literature | 3 |
| Elective or second language | 3 |
| Elective | 3 |
| Junior Spring | 15 |
| FREN 302 or SPAN 302 | 3 |
| Advanced FREN or SPAN: Literature | 3 |
| Civilization and culture course | 3 |
| Elective or second language | 3 |
| Elective | 3 |
| Senior Fall | 15 |
| Advanced FREN or SPAN: Literature | 3 |
| Advanced FREN or SPAN: Literature or civilization & culture | 3 |
| Elective or second language | 3 |
| Electives | 6 |
| Senior Spring | 15 |
| FREN 409 or SPAN 409 | 3 |
| Elective or second language | 3 |
| Electives | 6 |
| ASC Values Seminar | 3 |
| TOTAL CREDITS | 121-125 |

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.

MODERN LANGUAGES MINOR*

Credits

| | |
|---------------------------------------|---|
| Elementary language | 6 |
| Intermediate language | 6 |
| Conversation and composition | 3 |
| Civilization and culture course | 3 |
| Literature course | 3 |
| ML elective (at 300 level) | 3 |

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.

THE SOCIAL SCIENCES

The curricula ladders for anthropology, communication studies, criminal justice, political science, 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), *political science* (includes international relations and political science), 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 ensure 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 ethnology (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. 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, political science, international relations, 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 Credits

Introduction to the Field

for Cultural Track Students (10 credits)

| | |
|--|---|
| ANTH 105 Cultural Anthropology | 3 |
| ANTH 204 Physical Anthropology* | 4 |
| ANTH 216, ANTH 257, or Other Archaeology | 3 |

*Counts as a lab science course for general education distribution.

Introduction to the Field for Biology Track or Anthropology Pre-Physical Therapy Students (13 credits)

| | |
|--|---|
| ANTH 105 Cultural Anthropology | 3 |
| ANTH 204 Physical Anthropology* | 4 |
| ANTH 255 Race & Racism | 3 |
| ANTH 216, ANTH 257, or Other Archaeology | 3 |

*Counts as a lab science course for general education distribution.

Culture Area Courses* (3 credits)

| | |
|---------------------------|---|
| ANTH/POLS 241 China | 3 |
| ANTH/POLS 242 Japan | 3 |
| ANTH 243 The Middle East | 3 |
| ANTH 244 Africa | 3 |
| ANTH 245 Native Americans | 3 |

*The courses that qualify must be certified by the advisor.

Advanced Anthropology Electives (9–12 credits)

Cultural track students must complete four 200- or 300-level courses approved by their advisor. Biology track students must complete three 200- or 300-level courses approved by their advisor. Students should consult with their advisor to pick those that best fit their goals.

Social Science Electives (6 credits)

Two nontechnical courses in the other social sciences (psychology, political science, communications, criminal justice, sociology), or ENGL 326. Students should consult with the advisor to pick those that best fit their goals. Biology track students can substitute biology and chemistry courses for social science and related fields electives.

Related Fields Electives (3 credits)

One course in the sciences or humanities that is appropriate for the student's special goals and approved by the advisor.

Research Sequence (9 credits)

| | |
|--|---|
| ANTH 382 Ethnographic Research Methods | 3 |
| ANTH 409/410 Senior Research | 6 |

TOTAL CREDITS 43

CURRICULUM—ANTHROPOLOGY CULTURAL ANTHROPOLOGY TRACK

Credits

Freshman Fall 15.5

| | |
|-----------------------------|-----|
| ANTH 105 | 3 |
| ENGL 101 | 3 |
| ANTH Elective | 3 |
| Humanities Elective 1 | 3 |
| Science Elective 1 | 3 |
| Physical Education Elective | 0.5 |

Freshman Spring 15

| | |
|-------------------------------|---|
| ANTH 216 or Other Archaeology | 3 |
| Humanities Elective 2 | 3 |
| Free Electives | 9 |

Sophomore Fall 15.5

| | |
|-----------------------------|-----|
| ANTH Courses | 9 |
| Related Field* | 3 |
| Science Elective 2 | 3 |
| Physical Education Elective | 0.5 |

Sophomore Spring 15

| | |
|---------------------------|---|
| ANTH Course | 3 |
| Math Requirement | 3 |
| Related Field* | 3 |
| Social Science Elective 1 | 3 |
| Free Elective | 3 |

Junior Fall 15

| | |
|--------------------|---|
| ANTH Courses | 6 |
| Science Elective 3 | 3 |
| Free Electives | 6 |

Junior Spring 15

| | |
|---------------------------|---|
| ANTH 382 | 3 |
| Values Seminar | 3 |
| Humanities Elective 3 | 3 |
| Social Science Elective 2 | 3 |
| Free Elective | 3 |

Senior Fall 15

| | |
|---------------------------|---|
| ANTH 409 | 3 |
| Social Science Elective 3 | 3 |
| Humanities Elective 4 | 3 |
| Free Electives | 6 |

Senior Spring 15

| | |
|----------------|----|
| ANTH 410 | 3 |
| Free Electives | 12 |

TOTAL CREDITS 121

*Can fulfill Humanities requirement.

ANTHROPOLOGY MINOR

A total of 22 semester hours. Required basic courses: ANTH 105, ANTH 204, and ANTH 216, ANTH 257, or other archaeology. One of the following: ANTH 241, ANTH 242, ANTH 243, ANTH 244, ANTH 245, or other area courses. Any three additional ANTH courses.

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, or speech and human communication) designed to complement his or her career objectives.

REQUIREMENTS—

COMMUNICATION STUDIES MAJOR Credits

Introductory Courses (25 credits)

| | |
|---|---|
| COMS 130 Mass Media & Society* | 3 |
| COMS 180 Public Speaking & Presentation | 3 |
| COMS 213 Visual Literacy | 3 |
| COMS 220 Media, Law, & Ethics | 3 |
| COMS 230 Communication Theory (prerequisite COMS 130)* | 3 |
| ENGL 102 Advanced Composition & Literature (WE) (prerequisite ENG 101) | 3 |
| FRS 101 Freshman Seminar (COMS section) | 1 |
| PSY 105 Intro. to Psychology | 3 |
| SOC 105 Intro. to Sociology | 3 |

Communication Studies Advanced Electives (6 credits)

| | |
|------------------|---|
| COMS Elective I | 3 |
| COMS Elective II | 3 |

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.

Applied Coursework (12 credits)

Two writing and two studio courses required. Courses counted here may not be counted toward concentration.

Writing Core

| | |
|--|---|
| COMS 217 Broadcast News Writing | 3 |
| COMS 277 IMC Writing | 3 |
| COMS 285 Screen Writing (WE) | 3 |
| PRWR 100 Fundamentals of Professional Writing (WE) | 3 |
| PRWR 110 Fundamentals of Journalism (WE) | 3 |
| PRWR 310 Feature Writing for Magazines & Newspapers (WE) | 3 |
| PRWR 320 Advanced Technical Writing (WE) | 3 |
| PRWR 330 Multimedia Writing for Business & Training Programs (WE) | 3 |
| PRWR 340 Copy Writing for Advertising & Marketing (WE) | 3 |

Studio Core

| | |
|--|---|
| COMS 260 Basic Video (prerequisite COMS 213) | 3 |
| COMS 262 Digital Photography | 3 |
| COMS 264 Layout & Design (prerequisite COMS 213) | 3 |
| COMS 265 Radio & Audio Production | 3 |
| COMS 266 Basic Web Design | 3 |

Research Sequence (9 credits)

| | |
|-------------------------------------|---|
| COMS 382 Research Design* (QR) (WE) | 3 |
| COMS 409 Senior Capstone (SL) | 3 |
| COMS 410 Senior Capstone (SL) | 3 |

TOTAL CREDITS 48

*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 410 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 (WE) | 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 Digital Imaging | 3 |
| COMS 368 Interactive Video | 3 |

Speech and Human Communication (12 credits)

| | |
|--|---|
| COMS 290 Interpersonal and Small Group Communication | 3 |
| COMS 330 Popular Culture | 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 and COMS 264 as one of their two studio 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 and COMS 266 as 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 |
| COMS 130 Mass Media & Society | 3 |
| ENGL 101 Composition & Critical Thinking <i>or</i> Free Elective .. | 3 |
| FRS 101 Freshman Seminar | 1 |
| PSY 105 Intro. to Psychology | 3 |
| SOC 105 Intro. to Sociology | 3 |
| Humanities Elective | 3 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 15.5 |
| COMS 213 Visual Literacy | 3 |
| ENGL 102 Advanced Composition & Literature | 3 |
| Humanities Elective | 3 |
| Math/Science Elective | 3 |
| Free Elective or MATH 101 | 3 |
| Physical Education Elective | 0.5 |
| Sophomore Fall | 15 |
| COMS 180 Public Speaking & Presentation | 3 |
| Math Requirement | 3 |
| Studio Core | 3 |
| Writing Core | 3 |
| Humanities Elective | 3 |
| Sophomore Spring | 16 |
| COMS 230 Communication Theory | 3 |
| Studio Core | 3 |
| Writing Core | 3 |
| Humanities Elective | 3 |
| Science w/ Lab | 4 |
| Junior Fall | 15 |
| COMS 220 Media Law & Ethics | 3 |
| Concentration Courses | 6 |
| 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 |
| ASC 400 Values Seminar | 3 |
| COMS 409 Senior Capstone I | 3 |
| Concentration Course | 3 |
| Advanced Communication Studies Elective | 3 |
| Free Elective | 3 |
| Senior Spring | 13 |
| COMS 410 Senior Capstone II | 3 |
| Concentration Course | 3 |
| Free Electives | 7 |
| 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**Introductory Courses (9 credits)**

| | |
|------------------------------------|---|
| POLS 101 American Government | 3 |
| PSY 105 Intro. to Psychology | 3 |
| SOC 105 Intro. to Sociology | 3 |

Criminal Justice Core (30 credits)

| | |
|---|---|
| SOC 201 Criminology* | 3 |
| CJ 105 Intro. to the Criminal Justice System* | 3 |
| CJ 205 Law Enforcement* | 3 |
| CJ 210 Criminal Courts* | 3 |
| CJ 215 The Correctional System* | 3 |
| CJ 315 Juvenile Delinquency* | 3 |
| CJ 325 Criminal Law and Procedure* | 3 |
| CJ 405 Ethics in Criminal Justice* | 3 |
| Two CJ Electives | 6 |

Sociological Foundations (6 credits)

| | |
|---|---|
| One sociology elective from SOC 235, 266, and 315 | 3 |
| One sociology elective from SOC 307, 355, and 405 | 3 |

Law and the Judicial System (3 credits)

| | |
|---|---|
| One political science elective from POLS 218, 319, and 320 | 3 |
|---|---|

Government and Public Policy (3 credits)

| | |
|--|---|
| One political science elective from POLS 205, 206, 315, and 321 | 3 |
|--|---|

Research sequence (14 credits)

| | |
|---|----|
| PSY 385 Statistical Methods*; CJ 382 Research Methods*; CJ 409–410 Senior Research | 14 |
|---|----|

Internship (6 credits)*

| | |
|--|---|
| CJ 423 Criminal Justice Internship | 6 |
|--|---|

| | |
|----------------------------|-----------|
| TOTAL CREDITS | 71 |
|----------------------------|-----------|

*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 |
|--------------------------------------|-------------|
| Freshman Fall | 15.5 |
| CJ 105 | 3 |
| SOC 105 | 3 |
| ENGL 101 | 3 |
| Humanities Elective | 3 |
| Science Elective | 3 |
| PE | 0.5 |
| Freshman Spring | 16.5 |
| CJ Core Requirement | 3 |
| POLS 101 | 3 |
| PSY 105 | 3 |
| Lab Science | 4 |
| Humanities Elective | 3 |
| PE | 0.5 |
| Sophomore Fall | 15 |
| CJ Core Requirement | 3 |
| SOC Elective | 3 |
| Law/Judicial Systems Elective | 3 |
| Humanities Elective | 3 |
| Science Elective | 3 |
| Sophomore Spring | 15 |
| CJ Core Requirement | 3 |
| SOC Elective | 3 |
| Free Elective | 3 |
| Humanities Elective | 3 |
| Math Requirement | 3 |
| Junior Fall | 16 |
| CJ Core Requirement | 3 |
| Gov/Public Policy Elective | 3 |
| PSY 385 Statistical Methods | 4 |
| Free Electives | 6 |
| Junior Spring | 13 |
| CJ Core Requirement | 3 |
| CJ Core Requirement | 3 |
| CJ 382 Methods | 4 |
| Free Elective | 3 |
| Senior Fall | 15 |
| CJ 405 Criminal Justice Ethics | 3 |
| CJ 409 Senior Research I | 3 |
| Values Seminar | 3 |
| CJ Internship | 3 |
| CJ Elective | 3 |
| Senior Spring | 15 |
| CJ 410 Senior Research II | 3 |
| CJ Internship | 3 |
| CJ Elective | 3 |
| Free Electives | 6 |
| TOTAL CREDITS | 121 |

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.

REQUIREMENTS— CERTIFICATE IN ACCOUNTING

Required SBA Courses (15 credits)
ACCT 204 Financial Accounting 3
ACCT 205 Managerial Accounting 3

Choose any TWO of the following ACCT courses:

ACCT 304 Case Studies in Financial Reporting & Analysis 3
ACCT 306 Taxation & Accounting for Small &
Family Owned Businesses 3
ACCT 307 Fraud Examination 3
ACCT 314 Advanced Managerial Accounting 3
ACCT 330 Accounting Information Systems 3
ACCT 417 Internal Auditing 3
BLAW 260 Business Law *or* BLAW 288 Business Law for
Students of Criminal Justice 3

Total Credits **15**

Non-SBA Requirements

MATH 117 (science elective)
CJ 320 White Collar Crime (CJ elective)
Computer proficiency (determined by SBA department head)

Recommended Courses

MATH 118 (science elective)
PHIL 352 (humanities elective)
CSCI 101 *or* MIS 180 *or* IS 101

CRIMINAL JUSTICE/POLITICAL SCIENCE DUAL MAJOR

The double criminal justice and political science major is designed for students interested in law school or careers in court- or government-related professions. Structured to fit within the overall four-year curriculum, the major encompasses the requirements of both programs while allowing students to tailor research courses and internships to fit intellectual interests and professional goals.

Introductory Courses (12 credits)

CJ 105 POLS 101 SOC 105 PSY 105

Criminal Justice Core Courses (21 credits)

CJ 205 CJ 210 CJ 315 CJ 325
CJ 215 CJ 405 SOC 201

Political Science Core Courses (15 credits)

POLS 102 POLS 306 EC 201 POLS 221
One IR course

Sociological Foundations (6 credits)

One sociology elective from SOC 235, 266, and 315
One sociology elective from SOC 307, 355, and 405

Law and Judicial System Courses (6 credits)

Two POLS courses from POLS 218, 319, and 320

Government and Public Policy Course (3 credits)

POLS 205

Electives (9 credits)

Two CJ elective courses; one POLS elective course

Research Sequence (12–13 credits)

PSY 385 *or* POLS 310*
CJ 382**
CJ 409/410 *or* POLS 410/411*
*Option available to double majors only.
**Not taken if POLS option selected.

Internship (6 credits)

CJ 423 *or* POLS 394/395*
*Restricted to appropriate internship placements.

POLITICAL SCIENCE

The political science 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 political science 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 non-profit organizations. The major is good preparation for journalism and for other public service-oriented professions.

PRE-LAW OPTION

Political science is one of the majors traditionally chosen by students interested in going to law school. By special arrangement with Widener’s School of Law, political science 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 political science. 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.

Political science 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 political science majors may petition the MPA Advisory Committee of the public administration 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 political science faculty. Students will receive undergraduate political science credit as well as credit toward completion of the graduate MPA program for each MPA course they successfully complete.

REQUIREMENTS—POLITICAL SCIENCE Credits

| Introductory courses (12 credits) | |
|---|-----------|
| POLS 101 American political science | 3 |
| POLS 102 Foreign Governments & Politics | 3 |
| POLS 221 International Relations | 3 |
| EC 201 Principals of Macroeconomics | 3 |
| Core courses (31 credits) | |
| POLS 205 Public Policy | 3 |
| POLS 306 Western Political Theory | 3 |
| POLS 310 Empirical Political Analysis | 4 |
| Two courses from the “American Politics” series: | |
| POLS 206, 207, 215, 218, 230, 265, 308, 313, 314, 315, 316, 317, 318, 319, 320, 321 | 6 |
| Two courses from the “International Relations” series: | |
| POLS 204, 222, 226, 227, 228, 230, 235, 241, 242, 247, 250, 305, 307, 330, 335, 337, 384, 385 | 6 |
| Three electives in political science | 9 |
| Research (6 credits) | |
| POLS 410/411 Senior Research | 6 |
| TOTAL CREDITS | 49 |

CURRICULUM—POLITICAL SCIENCE Credits

| | |
|--|-------------|
| Freshman Fall | 15.5 |
| POLS 101 American Political Science | 3 |
| ENGL 101 Composition & Critical Thought | 3 |
| Science Elective | 3 |
| Humanities Elective | 3 |
| Free Elective | 3 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 15.5 |
| POLS 102 Foreign Government & Politics | 3 |
| American Politics Elective | 3 |
| Humanities Elective | 3 |
| Science Elective | 3 |
| Free Elective | 3 |
| Physical Education Elective | 0.5 |
| Sophomore Fall | 16 |
| POLS 205 Public Policy | 3 |
| POLS 221 Introduction to International Relations | 3 |
| Humanities Elective | 3 |
| Lab Science Elective | 4 |
| Free Elective | 3 |
| Sophomore Spring | 15 |
| EC 201 Macroeconomics | 3 |
| Humanities Elective | 3 |
| International relations Elective | 3 |
| Math Requirement | 3 |
| Free Elective | 3 |
| Junior Fall | 15 |
| POLS 306 Western Political Theory | 3 |
| Political Science Electives | 6 |
| Free Electives | 6 |
| Junior Spring | 16 |
| POLS 310 Empirical Political Analysis | 4 |
| American Politics Elective | 3 |
| Political Science Elective | 3 |
| Free Electives | 6 |
| Senior Fall | 15 |
| International Relations Elective | 3 |
| Free Electives | 6 |
| POLS 410 Senior Research | 3 |
| ASC 400 | 3 |
| Senior Spring | 13 |
| POLS 411 | 3 |
| Free Electives | 10 |
| TOTAL CREDITS | 121 |

POLITICAL SCIENCE MINOR

A total of 24 semester hours: POLS 101, 102, 205, 221, 306, plus any three courses in political science.

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 political science 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 also study a foreign language. Study abroad is encouraged.

REQUIREMENTS—**INTERNATIONAL RELATIONS MAJOR*** **Credits****Required Courses (31 credits)**

| | |
|---|---|
| ANTH 105 Cultural Anthropology | 3 |
| EC 201 Macroeconomics | 3 |
| POLS 101 American political science | 3 |
| POLS 102 Foreign Governments and Politics | 3 |
| POLS 221 International Relations | 3 |
| POLS 306 Western Political Theory | 3 |
| POLS 307 Theories of International Relations (POLS 221) | 3 |
| POLS 310 Empirical Political Analysis | 4 |
| POLS 410/411 Senior Research | 6 |

Language Requirement (6 credits)

A minimum of two three-credit courses (at or above the 200 level) in a single modern language. 6

Electives (12 credits)

Select four of the following (or any other course approved in writing by the IR major advisors): 12

- ANTH 243 Anthropology of the Middle East
- ANTH 251 Progress & Poverty
- EC 202 Principles of Microeconomics
- EC 310 Comparative Economic Systems (EC 101, 102)
- EC 408 International Economics (EC 101, 102)
- FREN 304 French Civilization & Culture (FREN 301, 302)
- FREN 305 French Civilization (FREN 301, 302)
- POLS 222 American Foreign Policy
- POLS 226 The Third World
- POLS 228 Politics of European Integration
- POLS 241 China
- POLS 242 Japan
- POLS 247 Vodka & Capitalism
- POLS 250 Vietnam
- POLS 235 Latin America
- POLS 330 Current Issues in Democratic Consolidation
- POLS 335 Opening the Iron Curtain
- POLS 337 Politics of the Middle East (POLS 102)
- POLS 384 Arms Control (POLS 221 or 222)
- POLS 385 Strategic Intelligence (POLS 221 or 222)
- GRMN 304 German Civilization & Culture (GRMN 202)
- HIST 332 Germany Since 1871
- HIST 334 Russia in the 18th and 19th Centuries
- HIST 335 Russia in the 20th Century
- HIST 336 Russia's Holocaust
- HIST 343 European Diplomacy, 1871–1945
- HIST 344 European Diplomacy, 1945–Present
- HUM 211 French Civilization and Culture
- HUM 212 Contemporary French Civilization
- ITAL 304 Italian Civilization & Culture (ITAL 301)
- PSY 310 Cross-Cultural Psychology (PSY 105)
- SPAN 304 Spanish Civilization & Culture (SPAN 202)
- SPAN 305 Latin American Culture (SPAN 202)

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, POLS 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 111 for the curriculum ladder for double majors.

REQUIREMENTS—PSYCHOLOGY MAJOR **Credits****Introductory Course (3 credits)**

PSY 105 Introduction to Psychology 3

Core Requirements (22 credits)

Capstone course (one from the following) 3

- PSY 330 Current Issues in Psychology
- PSY 377 History and Systems of Psychology

Advanced electives—six courses from the following; one of the advanced electives must be a 4-credit laboratory course (not including PSY 385, 387) 19

Experimental advanced electives (two from following)

- PSY 220 Learning & Memory
- PSY 230 Cognition*
- PSY 235 Forensic Psychology
- PSY 248 Brain, Behavior, & Culture
- PSY 260 Paranormal Psychology
- PSY 265 Evolutionary Psychology
- PSY 331 Cognition with Lab (4 credits)*
- PSY 333 Forensic Psychology with Lab (4 credits)*
- PSY 355 Biological Psychology
- PSY 360 Sensation & Perception

Professional/applied advanced electives (two from following)

- PSY 200 Industrial/Organizational Psychology
- PSY 202 Educational Psychology: Early Learners
- PSY 203 Consumer Behavior & Advertising
- PSY 215 Multicultural Psychology
- PSY 216 Community Psychology
- PSY 225 Abnormal Psychology
- PSY 240 Health Psychology
- PSY 250 Effective Instructional Practices & Delivery
Methods for All Levels of Special Education
- PSY 278 Problem Behavior in Children: Assessment & Therapy
- PSY 334 Consumer Behavior with Lab (4 credits)*
- PSY 375 Counseling & Psychotherapy
- PSY 376 Educational & Psychological Tests

Social/development advanced electives (two from following)

- PSY 204 Social Psychology
- PSY 205 Personality
- PSY 206 Psychology of Women
- PSY 210 Cross-Cultural Social Psychology
- PSY 211 Human Growth & Development I*
- PSY 212 Human Growth & Development II
- PSY 213 Adolescent Psychology
- PSY 245 Group Dynamics*
- PSY 332 Human Growth & Development I w/ Lab (4 credits)*
- PSY 336 Groups: Theory & Experience with Lab (4 credits)*

Research Sequence (14 credits)

PSY 385, 387 Statistical Methods & Research Design** 8
PSY 409–410 Senior Research 6

Related Fields (6 credits)

Any two courses from ANTH, BIOL, CJ 105, CJ 230, CJ 315, SOC, GWS 101, or specified SW courses 6

TOTAL CREDITS **45**

*Students may not take a laboratory and non-laboratory version of the same class; therefore, students may take either PSY 203 or 334, PSY 230 or 331, PSY 211 or 332, PSY 235 or 333, PSY 243 or 336.

** Students must achieve a grade of C or better in these courses before taking PSY 409.

CURRICULUM—PSYCHOLOGY **Credits**

| | |
|--|------------------|
| Freshman Fall | 15.5/16.5 |
| PSY 105 Introduction to Psychology | 3 |
| ENGL 101 Composition & Critical Thought | 3 |
| MATH 101 (if required) | 3 |
| FRS 101 (optional) | 1 |
| Related Fields Requirement 1 | 3 |
| Humanities Elective 1 | 3 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 13.5 |
| MATH 116 or 117** | 3 |
| Humanities Elective 2 | 3 |
| Psychology Advanced Elective 1 | 3 |
| Science Elective 1 w/Lab | 4 |
| Physical Education Elective | 0.5 |
| Sophomore Fall | 16 |
| PSY 385 Statistical Methods w/ Lab** | 4 |
| Humanities Elective 3 (WE) | 3 |
| Psychology Advanced Elective 2 | 3 |
| Science Elective 2 | 3 |
| Free Elective | 3 |
| Sophomore Spring | 16/17 |
| PSY 387 Research Design & Lab for Psychology** | 4 |
| PSY 392 (optional) | 1 |
| Psychology Advanced Elective 3 | 3 |
| Related Fields Requirement 2 | 3 |
| Science Elective 3 | 3 |
| Free Elective | 3 |
| Junior Fall | 16 |
| Psychology Advanced Elective 4 w/ Lab (WE) | 4 |
| Humanities Elective 4 | 3 |
| Free Electives | 9 |
| Junior Spring | 15 |
| PSY 330 or 377 (WE) | 3 |
| PSY 409 Senior Research I | 3 |
| Psychology Advanced Elective 5 | 3 |
| Free Electives | 6 |
| Senior Fall | 15 |
| ASC 400 Values Seminar (WE) | 3 |
| PSY 409 or 410 Senior Research I or II | 3 |
| Psychology Advanced Elective 6 | 3 |
| Free Electives | 6 |
| Senior Spring | 14 |
| PSY 410 Senior Research II | 3 |
| Free Electives | 11 |
| TOTAL CREDITS | 121 |

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

** 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*.

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 387, 409, 410).

SOCIOLOGY

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.

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—SOCIOLOGY MAJOR WITH SOCIAL RESEARCH TRACK **Credits**

| | |
|--|-----------|
| Introductory Courses (4 credits) | |
| SOC 105 Introduction to Sociology | 3 |
| FRS 101 Freshman Seminar | 1 |
| 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, political science, history, philosophy, psychology, social work, women’s studies | 9 |
| TOTAL CREDITS | 47 |

SOCIAL PRACTICE TRACK

This track begins with Introduction to Sociology and requires Social Theory, Research Design, and the Social Self. As they progress through the curriculum, students must take at least two sociology service learning courses that combine classroom learning with service to the community. Students must also complete a 200-hour internship that provides an experiential learning opportunity. The social practice track culminates in a capstone sociology seminar taken in the senior year that provides students an opportunity to reflect on a selected sociological topic.

REQUIREMENTS—SOCIOLOGY MAJOR WITH SOCIAL PRACTICE TRACK **Credits**

| | |
|--|-----------|
| Introductory Courses (4 credits) | |
| SOC 105 Introduction to Sociology | 3 |
| FRS 101 Freshman Seminar | 1 |
| 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, political science, HIST 100, 101, 102, 121, 122, PHIL 105, 115, 215, psychology, social work, women’s studies | |
| | 9 |
| TOTAL CREDITS | 49 |

* Two of these electives must be service learning courses.

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 in this *Catalog*.

SOCIOLOGY MINOR

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

CURRICULUM—SOCIOLOGY **Credits**

| | |
|---|-------------|
| Freshman Fall | 16.5 |
| SOC 105 Introduction to Sociology | 3 |
| ENGL 101 Composition & Critical Thought | 3 |
| FRS 101 Freshman Seminar | 1 |
| Humanities Elective | 3 |
| Related Fields Elective | 3 |
| Science Elective, or MATH 101 if required | 3 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 16.5 |
| Sociology Elective | 3 |
| Humanities Elective | 3 |
| Lab Science | 4 |
| Related Fields Elective | 3 |
| Free Elective | 3 |
| Physical Education Elective | 0.5 |
| Sophomore Fall | 15 |
| Sociology Elective* | 3 |
| Humanities Elective | 3 |
| Science Elective | 3 |
| Related Fields Elective | 3 |
| Math Requirement | 3 |
| Sophomore Spring | 15 |
| Sociology Elective | 3 |
| SOC 207 Social Self (Social Practice) | 3 |
| Humanities Elective | 3 |
| Science Elective | 3 |
| Free Elective | 3 |
| Junior Fall | 16 |
| SOC 355 Social Theory | 3 |
| Sociology Elective* | 3 |
| PSY 385 Statistical Methods w/ Lab (Social Research only) | 4 |
| CSCI 101 (Social Practice only) | 3 |
| Free Elective | 3 |
| Junior Spring | 15 |
| SOC 382 Research Design | 3 |
| Sociology Elective | 3 |
| Free Electives | 9 |
| Senior Fall | 15 |
| ASC 400 Values Seminar | 3 |
| SOC 409 Senior Research (Social Research) | 3 |
| Free Electives | 9 |
| Senior Spring | 13 |
| SOC 405 Sociology Seminar | 3 |
| SOC 410 Senior Research (Social Research) | 3 |
| SOC 423 Internship (Social Practice) | 6 |
| Free Elective | 1 |
| TOTAL CREDITS | 121 |

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

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 research methods course and senior project are 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*.

THE SCIENCES

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

The major programs in the sciences are designed to prepare students 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 students to investigate the areas of the humanities, social sciences, and economics. 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 38) 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 PROGRAMS IN THE HEALING PROFESSIONS

In collaboration with St. George's University, Philadelphia College of Osteopathic Medicine, Kornberg School of Dentistry, Temple University School of Podiatric Medicine, or Salus University, Widener offers seven-year programs leading to the degrees of bachelor of science and doctor of medicine, doctor of osteopathic medicine, doctor of dental medicine, doctor of podiatric medicine, or doctor of optometry. The three years of undergraduate study at Widener proceed at a normal pace, following the curriculum ladder for the BS in biology, 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 112–119.

ALLIED HEALTH

Widener University's Division of Continuing Studies offers a BS in allied health. For course descriptions, track options, and requirements, see the *Continuing Studies 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.

CURRICULUM—BIOCHEMISTRY **Credits**

| | |
|---|--------------|
| Freshman Fall | 15.5 |
| BCH 101 Biochemistry Seminar I | 1 |
| CHEM 145 General Chemistry I | 3 |
| CHEM 147 General Chemistry I Lab | 1 |
| ENGL 101 Composition & Critical Thought | 3 |
| HUM/SSCI Elective | 3 |
| MATH 141 Calculus I | 4 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 15.5 |
| BCH 102 Biochemistry Seminar II | 1 |
| CHEM 146 General Chemistry II | 3 |
| CHEM 148 General Chemistry II Lab | 1 |
| ENGL 102 Advanced Composition & Literature | 3 |
| HUM/SSCI Elective | 3 |
| MATH 142 Calculus II | 4 |
| Physical Education Elective | 0.5 |
| Sophomore Fall | 16 |
| BIOL 261 Biological Concepts III | 4 |
| CHEM 255 Organic Chemistry I | 4 |
| CHEM 257 Organic Chemistry I Lab | 1 |
| HUM/SSCI Elective | 3 |
| PHYS 161 Physics I | 3 |
| PHYS 163 Physics I Lab | 1 |
| Sophomore Spring | 16 |
| BIOL 262 Principles of Modern Genetic Analysis | 4 |
| BIOL 299 Research Methods | 3 |
| CHEM 256 Organic Chemistry II | 4 |
| CHEM 258 Organic Chemistry II Lab | 1 |
| PHYS 162 Physics II | 3 |
| PHYS 164 Physics II Lab | 1 |
| Junior Fall | 15/16 |
| BCH 301 Biochemistry Seminar III | 1 |
| BCH 451 Biochemistry I | 3 |
| BCH 453 Biochemistry I Lab | 1 |
| Elective* or HUM/SSCI Elective | 4/3 |
| CHEM 385 Physical Chemistry I | 4 |
| HUM/SSCI Elective | 3 |
| Junior Spring | 15/16 |
| BCH 408 Senior Thesis Proposal | 1 |
| BCH 452 Biochemistry II | 3 |
| BCH 454 Biochemistry II Lab | 1 |
| HUM/SSCI Elective or BIOL 310 Molecular Biology | 3/4 |
| CHEM 386 Physical Chemistry II | 4 |
| HUM/SSCI Elective | 3 |
| Senior Fall | 16/17 |
| ASC 400 or HUM/SSCI Elective | 3 |
| BCH 409 Senior Thesis I | 2 |
| HUM/SSCI Elective or Elective* | 3/4 |
| Electives* | 8 |
| Senior Spring | 15-17 |
| ASC 400 or HUM/SSCI Elective | 3 |
| BCH 410 Senior Thesis II | 2 |
| BIOL 310 Molecular Biology or HUM/SSCI Elective | 4/3 |
| Electives* | 7/8 |

TOTAL CREDITS **124-129**

*Three must be upper-division electives from the following with at least one from biology and one from chemistry: CHEM 365/367 Analytical Chemistry, CHEM 366/368 Instrumental Analysis, CHEM 375 Inorganic Chemistry, and CHEM 461/463 Advanced Synthesis & Spectroscopy; BIOL 302 Cell Physiology, BIOL 306 Developmental Biology, BIOL 314 Developmental Neurobiology, BIOL 319 Microbiology, BIOL 320 Immunology, and BIOL 326 Medical Genetics.

REQUIREMENTS—BIOCHEMISTRY MINOR

This minor requires a total of 44–47 semester hours and is most suitable for biology, chemistry, and chemical engineering majors. Required courses: BCH 301 or 302; BCH 451, 453, 452, 454; BIOL 261, 262; CHEM 145, 146, 147, 148, 255, 256, 257, 258; one course from CHEM 365, 367, 366, 368, 385, 386, 389, 461, 463; and MATH 141 and 142 or MATH 131 and 132.

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. Courses satisfying the BA in biology coursework category may also satisfy social science or humanities general education requirements. Students enrolled in the BS in biology program may switch to the BA in biology provided they have 12 credits or more remaining until graduation.

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.

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 | Credits |
|--|----------------|
| Freshman Fall | 14.5 |
| BIOL 161/165 Biological Concepts I w/ Lab | 4 |
| CHEM 145 General Chemistry I | 3 |
| CHEM 147 General Chemistry Lab I | 1 |
| ENGL 101 Composition & Critical Thought | 3 |
| HUM/SSCI Elective | 3 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 14.5 |
| BIOL 162 Biological Concepts II | 4 |
| CHEM 146 General Chemistry II | 3 |
| CHEM 148 General Chemistry Lab II | 1 |
| ENGL 102 Advanced Composition & Literature | 3 |
| HUM/SSCI Elective | 3 |
| Physical Education Elective | 0.5 |
| Sophomore Fall | 16 |
| BIOL 261 Biological Concepts III | 4 |
| CHEM 255 Organic Chemistry I | 4 |
| CHEM 257 Organic Chemistry Lab I | 1 |
| MATH 131 or 141 Calculus I | 4 |
| HUM/SSCI Elective | 3 |
| Sophomore Spring | 16 |
| BIOL 262 Principles of Modern Genetic Analysis | 4 |
| CHEM 256 Organic Chemistry II | 4 |
| CHEM 258 Organic Chemistry Lab II | 1 |
| MATH 132 or 142 Calculus II | 4 |
| BIOL 299 Research Methods | 3 |
| Junior Fall | 15/16 |
| PHYS 141/143 College Physics I w/ Lab | 5 |
| HUM/SSCI Elective | 3 |
| BIOL Elective | 4 |
| BIOL Elective or Free Elective* | 4/3 |
| Junior Spring | 15/16 |
| PHYS 142/144 College Physics II w/ Lab | 5 |
| HUM/SSCI Elective | 3 |
| BIOL Elective | 4 |
| BIOL Elective or Free Elective* | 4/3 |
| Senior Fall | 16/18 |
| BIOL Elective | 4 |
| BIOL Elective or Free Elective* | 4/3 |
| BIOL Elective or Free Elective* | 4/3 |
| HUM/SSCI Elective | 3 |
| HUM/SSCI Elective | 3 |
| Senior Spring | 16/18 |
| BIOL Elective | 4 |
| BIOL Elective or Free Elective* | 4/3 |
| BIOL Elective or Free Elective* | 4/3 |
| ASC 400 | 3 |
| HUM/SSCI Elective | 3 |
| TOTAL CREDITS | 123–129 |

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

- A. Organismal Biology: 303, 307, 308, 309, 311, 315, 317, 325, 327.
- B. Cell & Molecular Biology: 302, 306, 310, 314, 319, 320, 326, 405.
- C. Interorganismal Biology: 301, 312, 313, 340/342, 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 an unspecified biology elective. 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 **Credits**

| | |
|---|--------------|
| Freshman Fall | 14.5 |
| BIOL 161/165 Biological Concepts I w/ Lab | 4 |
| CHEM 145 General Chemistry I | 3 |
| CHEM 147 General Chemistry Lab I | 1 |
| ENGL 101 Composition & Critical Thought | 3 |
| HUM/SSCI Elective | 3 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 14.5 |
| BIOL 162 Biological Concepts II | 4 |
| CHEM 146 General Chemistry II | 3 |
| CHEM 148 General Chemistry Lab II | 1 |
| ENGL 102 Advanced Composition & Literature | 3 |
| HUM/SSCI Elective | 3 |
| Physical Education Elective | 0.5 |
| Sophomore Fall | 15/16 |
| BIOL 261 Biological Concepts III | 4 |
| CHEM 255 Organic Chemistry I | 4 |
| CHEM 257 Organic Chemistry Lab I | 1 |
| MATH 118 Elementary Calculus or MATH 131 Calculus I or MATH 120 Pre-Calculus | 3/4 |
| HUM/SSCI Elective | 3 |
| Sophomore Spring | 16-22 |
| BIOL 262 Principles of Modern Genetic Analysis | 4 |
| BIOL 299 Research Methods | 3 |
| BA Coursework ⁺ | 6-9 |
| HUM/SSCI Elective | 3-6 |
| Junior Fall | 16 |
| PHYS 141/143 College Physics I w/ Lab | 5 |
| BIOL Electives | 8 |
| HUM/SSCI Elective or BA Coursework ⁺ | 3 |
| Junior Spring | 16 |
| PHYS 142/144 College Physics II w/ Lab | 5 |
| BIOL Electives | 8 |
| HUM/SSCI Elective or BA Coursework ⁺ | 3 |
| Senior Fall | 16 |
| BIOL Elective | 4 |
| BA Coursework ⁺ | 6 |
| HUM/SSCI Elective | 3 |
| ASC 400 | 3 |
| Senior Spring | 16 |
| BIOL Elective | 4 |
| BA Coursework ⁺ | 6 |
| HUM/SSCI Elective | 3 |
| Free Elective | 3 |

TOTAL CREDITS **124-131**

⁺ 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:

- A. Organismal Biology: 303, 307, 308, 309, 311, 315, 317, 325, 327.
- B. Cell & Molecular Biology: 302, 306, 310, 314, 319, 320, 326, 405.
- C. Interorganismal Biology: 301, 312, 313, 340/342, 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. BIOL 329 and BCH 451/453 may also be taken as an unspecified biology elective. 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, 386, 399 (3 credits), 475, 498 (3 credits), and BCH 451, 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 the School of Engineering—see page 101. Students must maintain a minimum 3.0 GPA to continue in the double major.

**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: BIOL 302, 303, 306, 307, 309, 310, 319, 320, 325, and 327.

| CURRICULUM—CHEMISTRY | Credits |
|---|----------------|
| Freshman Fall | 13.5 |
| CHEM 145 General Chemistry I | 3 |
| CHEM 147 General Chemistry I Lab | 1 |
| ENGL 101 Composition & Critical Thought | 3 |
| MATH 131 Calculus w/ Review I | 3 |
| HUM/SSCI Elective | 3 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 14.5 |
| CHEM 146 General Chemistry II | 3 |
| CHEM 148 General Chemistry II Lab | 1 |
| MATH 132 Calculus w/ Review II | 3 |
| PHYS 161 Physics I | 3 |
| PHYS 163 Physics I Lab | 1 |
| HUM/SSCI Elective | 3 |
| Physical Education Elective | 0.5 |
| Sophomore Fall | 15 |
| CHEM 255 Organic Chemistry I | 4 |
| CHEM 257 Organic Chemistry I Lab | 1 |
| MATH 133 Calculus w/ Review III | 3 |
| PHYS 162 Physics II | 3 |
| PHYS 164 Physics II Lab | 1 |
| HUM/SSCI Elective | 3 |
| Sophomore Spring | 15 |
| CHEM 256 Organic Chemistry II | 4 |
| CHEM 258 Organic Chemistry II Lab | 1 |
| CHEM 375 Inorganic Chemistry | 3 |
| CHEM 390 Chemical Literature | 1 |
| HUM/SSCI Elective | 3 |
| Elective | 3 |
| Junior Fall | 17 |
| CHEM 365 Analytical Chemistry | 3 |
| CHEM 367 Analytical Chemistry Lab | 1 |
| CHEM 385 Physical Chemistry I | 4 |
| HUM/SSCI Elective | 3 |
| Electives | 6 |
| Junior Spring | 15 |
| CHEM 366 Instrumental Analysis | 3 |
| CHEM 368 Instrumental Analysis Lab | 1 |
| CHEM 386 Physical Chemistry II | 4 |
| CHEM 389 Physical Chemistry II Lab | 1 |
| HUM/SSCI Elective | 3 |
| Elective | 3 |
| Senior Fall | 16/17 |
| CHEM 461 Synthesis & Spectroscopy | 1 |
| CHEM 463 Synthesis & Spectroscopy Lab | 2 |
| CHEM 498 Undergraduate Research Experience* | 1 |
| HUM/SSCI Elective | 3 |
| Advanced CHEM Elective*** | 3 |
| Science Elective** | 3/4 |
| Elective | 3 |
| Senior Spring | 15/16 |
| ASC 400 Values Seminar | 3 |
| CHEM 498 Undergraduate Research Experience* | 2 |
| HUM/SSCI Elective | 3 |
| Electives | 7/8 |
| TOTAL CREDITS | 121-123 |

*A minimum of **three** semester hours of CHEM 498 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 undesignated. 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 | Credits |
|---|----------------|
| Freshman Fall | 14.5 |
| CHEM 145 General Chemistry I | 3 |
| CHEM 147 General Chemistry Lab I | 1 |
| MATH 141 Calculus I | 4 |
| ENGL 101 Composition & Critical Thought | 3 |
| HUM/SSCI Elective | 3 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 15.5 |
| CHEM 146 General Chemistry II | 3 |
| CHEM 148 General Chemistry Lab II | 1 |
| MATH 142 Calculus II | 4 |
| PHYS 161 Physics I | 3 |
| PHYS 163 Physics Lab I | 1 |
| HUM/SSCI Elective | 3 |
| Physical Education Elective | 0.5 |
| Sophomore Fall | 16 |
| CHEM 255 Organic Chemistry I | 4 |
| CHEM 257 Organic Chemistry Lab I | 1 |
| MATH 241 Multivariable Calculus | 4 |
| PHYS 162 Physics II | 3 |
| PHYS 164 Physics Lab II | 1 |
| HUM/SSCI Elective | 3 |
| Sophomore Spring | 15 |
| CHEM 256 Organic Chemistry II | 4 |
| CHEM 258 Organic Chemistry Lab II | 1 |
| CHEM 375 Inorganic Chemistry | 3 |
| CHEM 390 Chemical Literature | 1 |
| HUM/SSCI Elective | 3 |
| Elective | 3 |
| Junior Fall | 15 |
| BCH 451 Biochemistry I | 3 |
| BCH 453 Biochemistry Lab I | 1 |
| CHEM 365 Analytical Chemistry | 3 |
| CHEM 367 Analytical Chemistry Lab | 1 |
| CHEM 385 Physical Chemistry I | 4 |
| HUM/SSCI Elective | 3 |
| Junior Spring | 16 |
| CHEM 366 Instrumental Analysis | 3 |
| CHEM 368 Instrumental Analysis Lab | 1 |
| CHEM 386 Physical Chemistry II | 4 |
| CHEM 389 Physical Chemistry Lab II | 1 |
| CHEM 408 Senior Thesis Proposal | 1 |
| HUM/SSCI Elective | 3 |
| Elective | 3 |
| Senior Fall | 14 |
| CHEM 409 Senior Thesis I | 2 |
| CHEM 461 Synthesis & Spectroscopy | 1 |
| CHEM 463 Synthesis & Spectroscopy Lab | 1 |
| HUM/SSCI Elective | 3 |
| Electives | 7 |
| Senior Spring | 15 |
| CHEM 410 Senior Thesis II | 2 |
| CHEM 477 Advanced Inorganic Lab | 1 |
| ASC 400 Values Seminar | 3 |
| Advanced CHEM Elective* | 3 |
| HUM/SSCI Elective | 3 |
| Elective | 3 |
| TOTAL CREDITS | 121 |

*BCH 452/454, CHEM 425/427, 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 and MySQL.

REQUIREMENTS—COMPUTER SCIENCE MINOR

A total of 39 semester hours: MATH 141, 142, 151, and 152 (or 322); CSCI 151, 152, 257, 258, 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 eight months of experience on the job in addition to the BS degree in computer science.

COURSE SEQUENCE: COOPERATIVE COMPUTER SCIENCE PROGRAM

Freshman Fall

CSCI 151, MATH 151, ENGL 101, HUM/SSCI elective, Physical Education Elective

Freshman Spring

CSCI 152, MATH 152, three HUM/SSCI electives, Physical Education Elective

Sophomore Fall

CSCI 257, MATH 141, PHIL 120, PHYS 111, HUM/SSCI elective

Sophomore Spring

CSCI 258, CSCI 264, MATH 142, HUM/SSCI elective

Sophomore Summer

CSCI 373, CSCI 388, CSCI 434, MATH 241 or MATH 242, two HUM/SSCI electives

Junior Fall

CSCI 347, MATH 273, technical elective, two free electives

Junior Spring and Summer

Industry period (eight months)

Senior Fall

CSCI 408, CSCI 451, PHYS 141, two technical electives

Senior Spring

CSCI 409, CSCI 344, PHYS 142, ASC 400, one technical elective

CURRICULUM—COMPUTER SCIENCE

Credits

| | |
|---|-------------|
| Freshman Fall | 13.5 |
| CSCI 151 Introduction to Computer Science I* | 4 |
| MATH 151 Introduction to Discrete Mathematics I | 3 |
| ENGL 101 Composition & Critical Thought | 3 |
| HUM/SSCI Elective | 3 |
| Physical Education Elective | 0.5 |

| | |
|--|-------------|
| Freshman Spring | 16.5 |
| CSCI 152 Introduction to Computer Science II* | 4 |
| MATH 152 Introduction to Discrete Mathematics II | 3 |
| HUM/SSCI Electives | 9 |
| Physical Education Elective | 0.5 |

| | |
|---|-----------|
| Sophomore Fall | 16 |
| CSCI 257 Object-Oriented Programming | 4 |
| MATH 141 Calculus I** | 4 |
| PHIL 120 Symbolic Logic | 3 |
| PHYS 111 Digital Circuits & Information | 2 |
| HUM/SSCI Elective | 3 |

| | |
|---|-----------|
| Sophomore Spring | 15 |
| CSCI 258 Data Structures & Algorithms | 4 |
| CSCI 264 Assembly Language | 4 |
| MATH 142 Calculus II** | 4 |
| HUM/SSCI Elective | 3 |

| | |
|---|-----------|
| Junior Fall | 17 |
| CSCI 347 Computer Architecture I | 3 |
| CSCI 451 Operating Systems I | 3 |
| PHYS 141/143 College Physics I with Lab | 5 |
| MATH 273 Introduction to Probability Theory | 3 |
| Technical Elective [†] | 3 |

| | |
|--|--------------|
| Junior Spring | 15/16 |
| CSCI 373 Software Engineering | 3 |
| CSCI 398 Research Topics | 1 |
| PHYS 142/144 College Physics II with Lab | 5 |
| MATH Elective ^{††} | 3/4 |
| Technical Elective [†] | 3 |

| | |
|--|-----------|
| Senior Fall | 17 |
| ASC 400 Values Seminar | 3 |
| CSCI 408 Senior Project I | 2 |
| HUM/SSCI Elective | 3 |
| Technical Electives [†] | 6 |
| Elective | 3 |

| | |
|---------------------------------------|-----------|
| Senior Spring | 14 |
| CSCI 344 Programming Languages | 3 |
| CSCI 409 Senior Project II | 2 |
| Technical Elective [†] | 3 |
| Electives | 6 |

TOTAL CREDITS

124–125

*CSCI 143 and one technical elective may substitute for CSCI 151 and 152.

**The MATH 131, 132, 133 sequence can substitute for MATH 141 and 142.

[†]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, 382, 435, 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 57 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, 257, 258; 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 eight months 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

Sophomore Fall

CSCI 257, QA 251, MATH 151, MGT 210, MIS 290

Sophomore Spring

ANTH 105, CSCI 258, QA 252, MATH 152, MIS 358

Sophomore Summer

CSCI 373, CSCI elective, EC 201 or 202, SSCI elective, two free electives

Junior Fall

PRWR 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

Credits

| | |
|--|-------------|
| Freshman Fall | 13.5 |
| CSCI 151 Introduction to Computer Science I | 4 |
| ENGL 101 Composition & Critical Thought | 3 |
| MATH 117* Elementary Functions | 3 |
| SSCI Elective | 3 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 13.5 |
| CSCI 152 Introduction to Computer Science II | 4 |
| ENGL 102 Advanced Composition & Literature | 3 |
| MATH 118* Elementary Calculus I | 3 |
| History/Art History Elective | 3 |
| Physical Education Elective | 0.5 |
| Sophomore Fall | 16 |
| CSCI 257 Object-Oriented Programming | 4 |
| QA 251 Elementary Statistical Analysis | 3 |
| MATH 151 Introduction to Discrete Mathematics I | 3 |
| MGT 210 Foundations of Management | 3 |
| PHIL 120 Symbolic Logic | 3 |
| Sophomore Spring | 16 |
| CSCI 258 Data Structures & Algorithms | 4 |
| EC 201 or 202 Principles of Macro/Microeconomics | 3 |
| QA 252 Intermediate Statistical Analysis | 3 |
| MATH 152 Introduction to Discrete Mathematics II | 3 |
| MIS 290 Management Information Systems | 3 |
| Junior Fall | 15 |
| ANTH 105 Cultural Anthropology | 3 |
| PRWR 215 Effective Communication | 3 |
| MIS 329 Structured Systems Analysis Design*** | 3 |
| MIS 441 Business Expert Systems | 3 |
| CSCI Elective | 3 |
| Junior Spring | 16 |
| CSCI 398 Research Topics | 1 |
| MIS 358 Database Management Systems | 3 |
| MIS 461 Data Communications | 3 |
| CSCI/MIS Elective** | 3 |
| SSCI Elective, 200 level | 3 |
| Free Elective [†] | 3 |
| Senior Fall | 17 |
| CSCI 408 Senior Project I | 2 |
| CSCI 434 Database Systems I | 3 |
| CSCI 451 Operating Systems I | 3 |
| PHIL 352 Business Ethics | 3 |
| CSCI Elective | 3 |
| Free Elective [†] | 3 |
| Senior Spring | 17 |
| CSCI 409 Senior Project II | 2 |
| ASC 400 Values Seminar | 3 |
| CSCI/MIS Electives** | 6 |
| Free Electives [†] | 6 |
| TOTAL CREDITS | 124 |

*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.

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.

CURRICULUM—ENVIRONMENTAL SCIENCE Credits

| | |
|---|----------------|
| Freshman Fall | 15.5 |
| BIOL 161/165 Biological Concepts I w/ Lab | 4 |
| CHEM 145 General Chemistry I | 3 |
| CHEM 147 General Chemistry Lab I | 1 |
| ENGL 101 Composition & Critical Thought | 3 |
| ENVR 171 Principles of Environmental Science | 3 |
| ENVR 173 Investigating Environmental Science | 1 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 14.5 |
| BIOL 162 Biological Concepts II | 4 |
| CHEM 146 General Chemistry II | 3 |
| CHEM 148 General Chemistry Lab II | 1 |
| ENGL 102 Advanced Composition & Literature | 3 |
| ENVR 172 Principles of Sustainability Science | 3 |
| Physical Education Elective | 0.5 |
| Sophomore Fall | 16 |
| BIOL 261 Biological Concepts III | 4 |
| CHEM 255 Organic Chemistry I | 4 |
| CHEM 257 Organic Chemistry I Lab | 1 |
| MATH 131 Calculus I with Review | 4 |
| HUM/SSCI Elective | 3 |
| Sophomore Spring | 18 |
| ENVR 209 Meteorology | 4 |
| ENVR 261 Geographic Information Systems | 4 |
| ENVR 299 Research Methods & Analysis | 3 |
| MATH 132 Calculus II with Review | 4 |
| HUM/SSCI Elective | 3 |
| Junior Fall | 16 |
| CHEM 365/367 Analytical Chemistry w/ Lab | 4 |
| ENVR 301 Introductory Ecology ⁺ | 4 |
| PHYS 141/143 College Physics I w/ Lab | 5 |
| HUM/SSCI Elective | 3 |
| Junior Spring | 15/16 |
| ENVR 201 Environmental Geology | 4 |
| PHYS 142/144 College Physics II w/ Lab | 5 |
| ENVR Elective* | 3/4 |
| HUM/SSCI Elective | 3 |
| Senior Fall | 16/18 |
| ENVR 304 Environmental Pollution | 4 |
| ENVR Electives* | 6/8 |
| HUM/SSCI Electives | 6 |
| Senior Spring | 15/17 |
| ASC 400 Values Seminar | 3 |
| ENVR Electives* | 6/8 |
| HUM/SSCI Elective | 3 |
| Free Elective | 3 |
| TOTAL CREDITS | 126–131 |

*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/ BIOLOGY DOUBLE MAJOR

Credits

| | |
|--|-------------|
| Freshman Fall | 15.5 |
| BIOL 161/165 Biological Concepts I w/ Lab | 4 |
| CHEM 145 General Chemistry I | 3 |
| CHEM 147 General Chemistry I Lab | 1 |
| ENGL 101 Composition & Critical Thought | 3 |
| ENVR 171 Principles of Environmental Science | 3 |
| ENVR 173 Investigating Environmental Science | 1 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 14.5 |
| BIOL 162 Biological Concepts II | 4 |
| CHEM 146 General Chemistry II | 3 |
| CHEM 148 General Chemistry II Lab | 1 |
| ENGL 102 Advanced Composition & Literature | 3 |
| ENVR 172 Principles of Sustainability Science | 3 |
| Physical Education Elective | 0.5 |
| Sophomore Fall | 16 |
| BIOL 261 Biological Concepts III | 4 |
| CHEM 255 Organic Chemistry I | 4 |
| CHEM 257 Organic Chemistry I Lab | 1 |
| MATH 131 Calculus I with Review | 4 |
| HUM/SSCI Elective | 3 |
| Sophomore Spring | 17 |
| BIOL 262 Principles of Modern Genetic Analysis | 4 |
| BIOL 299 Research Methods & Analysis | 3 |
| MATH 132 Calculus II with Review | 4 |
| HUM/SSCI Electives | 6 |
| Junior Fall | 17 |
| BIOL 301 Introductory Ecology ⁺ | 4 |
| CHEM 365/367 Analytical Chemistry w/ Lab | 4 |
| ENVR 261 Geographic Information Systems | 4 |
| PHYS 141/143 College Physics I w/ Lab | 5 |
| Junior Spring | 19 |
| ENVR 201 Environmental Geology | 4 |
| ENVR 209 Meteorology | 4 |
| PHYS 142/144 College Physics II w/ Lab | 5 |
| HUM/SSCI Electives | 6 |
| Senior Fall | 18 |
| BIOL 319 Microbiology | 4 |
| ENVR 304 Environmental Pollution | 4 |
| BIOL/ENVR Elective** | 4 |
| HUM/SSCI Electives | 6 |
| Senior Spring | 19 |
| BIOL Electives* | 8 |
| BIOL/ENVR Electives** | 8 |
| ASC 400 Values Seminar | 3 |
| TOTAL CREDITS | 136 |

*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, 499 (209; ME 499) or BIOL 302, 303, 306, 307, 308, 309, 310, 311, 312, 313, 320, 327, 340, 405.

⁺BIOL 301 is only taught in the fall of even-numbered years.

REQUIREMENTS—ENVIRONMENTAL SCIENCE MINOR

The following courses are required, minimum of 27 semester hours: ENVR 171/173, 201, 209, and either ENVR 172 or one 200-level or above ENVR course (in addition to 201 and 209); 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
- A student who fails to meet this 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.
3. 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.
 4. 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.
 5. For students on the Mathematics: Secondary Education track, an overall GPA of 3.0 is required for entry into the junior year.
 6. All students are required to meet the minimum standards for academic progress (see page 18 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.

CURRICULUM—MATHEMATICS: TRADITIONAL TRACK

Credits

| | |
|---|-------------|
| Freshman Fall | 14.5 |
| MATH 141 Calculus I | 4 |
| ENGL 101 Composition & Critical Thought | 3 |
| HUM/SSCI Elective | 3 |
| CSCI 151 Introduction to Computer Science I | 4 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 14.5 |
| MATH 142 Calculus II | 4 |
| HUM/SSCI Electives | 6 |
| Science Elective** | 4 |
| Physical Education Elective | 0.5 |
| Sophomore Fall | 14 |
| MATH 241 Multivariable Calculus | 4 |
| PHYS 161/163 Physics I w/ Lab | 4 |
| HUM/SSCI Elective | 3 |
| Elective | 3 |
| Sophomore Spring | 16 |
| MATH 242 Elementary Differential Equations | 3 |
| HUM/SSCI Elective | 3 |
| Science Elective** | 4 |
| Electives | 6 |
| Junior Fall | 17 |
| MATH 331 Linear Algebra | 4 |
| MATH 300-Level Elective* | 4 |
| HUM/SSCI Electives | 6 |
| Elective | 3 |
| Junior Spring | 17 |
| MATH 341 Advanced Calculus I | 4 |
| MATH 300-Level Elective* | 4 |
| HUM/SSCI Elective | 3 |
| Electives | 6 |
| Senior Fall | 14 |
| MATH 300-level Electives* | 8 |
| ASC 400 Values Seminar | 3 |
| Elective | 3 |
| Senior Spring | 14 |
| MATH 300-level Electives* | 8 |
| Electives | 6 |
| 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 171 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 Division of Education section.

CURRICULUM—MATHEMATICS: SECONDARY EDUCATION TRACK[†]

| | Credits |
|--|----------------|
| Freshman Fall | 14.5 |
| MATH 141 Calculus I | 4 |
| ENGL 101 Composition & Critical Thought | 3 |
| CSCI 151 Introduction to Computer Science I | 4 |
| PSY 105 Introduction to Psychology | 3 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 15.5 |
| ED 101 Introduction to Teaching | 3 |
| ED 102 Introduction to Educational Technology | 1 |
| ENGL 102 Advanced Composition & Literature | 3 |
| MATH 142 Calculus II | 4 |
| Science Elective*** | 4 |
| Physical Education Elective | 0.5 |
| Sophomore Fall | 16/17 |
| ED/PSY 250 Effective Instructional Practices | 3 |
| MATH 151 Introduction to Discrete Mathematics I* | 3 |
| MATH 241 Multivariable Calculus | 4 |
| HUM Elective | 3 |
| Science Elective*** | 3/4 |
| Sophomore Spring | 16 |
| ED/PSY 213 Adolescent Psychology | 3 |
| MATH 152 Introduction to Discrete Mathematics II* | 3 |
| MATH 242 Elementary Differential Equations | 3 |
| HUM Elective | 3 |
| PHYS 161/163 Physics I w/ Lab | 4 |
| Junior Fall | 14 |
| ED 1422 Teaching English Language Learners | 3 |
| MATH 273 Introduction to Probability | 3 |
| MATH 331 Linear Algebra | 4 |
| MATH 351 Topics in Geometry | 4 |
| Junior Spring | 14 |
| MATH 341 Advanced Calculus I | 4 |
| MATH 373 Mathematical Statistics | 4 |
| English Literature Elective** | 3 |
| Elective | 3 |
| Senior Fall | 17 |
| MATH 325 History & Philosophy of Mathematics | 4 |
| MATH 332 Modern Algebra | 4 |
| ED 308 Methods—Secondary Mathematics | 3 |
| ASC 400 Values Seminar | 3 |
| SSCI Elective | 3 |
| Senior Spring | 15 |
| ED 1412 Student Teaching | 9 |
| ED 1423 Collaboration & Inclusion | 3 |
| ED 1421 Literacy Intervention in the Content Areas for Learners with Disabilities | 3 |
| TOTAL CREDITS | 122/123 |

[†]Students must have current criminal record checks, FBI clearances, and child abuse clearances.

*MATH 322 can be substituted for MATH 151 & 152.

**Pennsylvania Department of Education English literature requirement: Courses must be selected from ENGL courses in British or American literature.

***Chosen from BIOL 161 or above, CHEM 145 or above, CSCI 152 or above, PHYS 162 or above, or ENVR 171 or above.

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

| | Credits |
|---|-------------|
| Freshman Fall | 14.5 |
| MATH 141 Calculus I | 4 |
| CSCI 151 Introduction to Computer Science I | 4 |
| ENGL 101 Composition & Critical Thought | 3 |
| HUM/SSCI Elective | 3 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 14.5 |
| MATH 142 Calculus II | 4 |
| CSCI 152 Introduction to Computer Science II | 4 |
| PHIL 120 Symbolic Logic | 3 |
| HUM/SSCI Elective | 3 |
| Physical Education Elective | 0.5 |
| Sophomore Fall | 15 |
| MATH 151 Introduction to Discrete Mathematics I* | 3 |
| MATH 241 Multivariable Calculus | 4 |
| CSCI 257 Object Oriented Programming | 4 |
| PHYS 161 Physics I | 3 |
| PHYS 163 Physics I Lab | 1 |
| Sophomore Spring | 17 |
| MATH 152 Introduction to Discrete Mathematics II* | 3 |
| MATH 242 Elementary Differential Equations | 3 |
| CSCI 258 Data Structures & Algorithms | 4 |
| CSCI 264 Assembly Language | 4 |
| HUM/SSCI Elective | 3 |
| Junior Fall | 16 |
| MATH 273 Introduction to Probability | 3 |
| MATH 331 Linear Algebra | 4 |
| CSCI 347 Computer Architecture I | 3 |
| CSCI Elective*** | 3 |
| HUM/SSCI Elective | 3 |
| Junior Spring | 16 |
| MATH Elective** | 4 |
| CSCI Elective*** | 3 |
| HUM/SSCI Elective | 3 |
| SSCI Elective | 3 |
| Elective | 3 |
| Senior Fall | 15 |
| HUM/SSCI Elective | 3 |
| CSCI 451 Operating Systems I | 3 |
| MATH Elective** | 4 |
| CSCI Elective*** | 3 |
| CSCI 408 or MATH 408 Senior Project I [†] | 2 |
| Senior Spring | 15 |
| ASC 400 Values Seminar | 3 |
| MATH Elective** | 4 |
| Electives | 6 |
| CSCI 409 or MATH 409 Senior Project II [†] | 2 |
| TOTAL CREDITS | 123 |

*MATH 322 can be substituted for MATH 151 & 152.

**Any 300-level MATH course except MATH 331 & 322.

***Any 300- or 400-level CSCI course not in the core.

[†]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 chairman 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 chairman 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. Students may also choose to major in science education—physics certification as described under “Science Education” later in this *Catalog*.

HONORS IN PHYSICS

The Honors in Physics program is for students who wish to extend their studies beyond the requirements for a BS in physics. Students wishing to graduate with “Honors in Physics” 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 physics. The students will carry out novel laboratory, theoretical, or observational research in physics or astronomy. The program includes a three-semester sequence (PHYS 408, 409, and 410). Students must defend their theses before a committee and earn a minimum grade of “A-” in PHYS 409 and 410 to receive the honors designation.

SENIOR THESIS IN PHYSICS

Outline of Program

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 requirement of the bachelor in science degree in physics. The students carry out novel research in a field of physics. The program includes a three semester sequence.

A student typically takes the first course (PHYS 408 Senior Thesis Proposal) during the second semester of the junior year. The student may also take this course during the summer after the junior year. This 1-credit course involves generating a research proposal with extensive literature review. The student and his or her research advisor selects a committee of three members (including the advisor) approved by the Department of Physics and Astronomy. The committee grades the proposal and determines if the student can continue with the research.

During the senior year, the student enrolls in two credits of research (PHYS 409 Senior Thesis I and PHYS 410 Senior Thesis II) during each semester. PHYS 409 is taken in the fall semester and is an automatic incomplete because the grade is based on successful completion of the thesis. PHYS 410 is a spring semester course. The student cannot take all four credits of research in one semester.

Eligibility

The student must be in good academic standing, with a minimum 3.0 GPA in physics, science, and overall course work. The student must have completed the four-semester physics core curriculum (PHYS 161, PHYS 163, PHYS 162, PHYS 164, PHYS 261, and PHYS 263).

Requirements of Senior Thesis

- *Presentation of Research Proposal*—A proposal, presented orally and in written form, must be approved by a Thesis Committee composed of the research advisor and two additional individuals approved by the Department of Physics and Astronomy. The proposal is developed as part of a 1-credit, graded course, PHYS 408 Senior Thesis Proposal.
- *Written Thesis*—A 10- to 20-page report, due one week before Projects Day. The research is carried out as part of two 2-credit courses, PHYS 409 and 410 Senior Thesis I and II.
- *Oral Presentation on Projects Day*
- *Defense*—Within one week of Projects Day, the student responds to questions from the thesis committee. The student submits a revised thesis, which the committee must approve before the final grade can be submitted.

CURRICULUM—PHYSICS

Credits

| | |
|---|-------------|
| Freshman Fall | 15.5 |
| PHYS 161/163 Physics I w/ Lab | 4 |
| MATH 141 Calculus I | 4 |
| CHEM 145/147 General Chemistry I w/ Lab | 4 |
| ENGL 101 Composition & Critical Thought | 3 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 15.5 |
| PHYS 162/164 Physics II w/ Lab | 4 |
| MATH 142 Calculus II | 4 |
| CHEM 146/148 General Chemistry II w/ Lab | 4 |
| CSCI 143 Programming in C | 3 |
| Physical Education Elective | 0.5 |
| Sophomore Fall | 14 |
| PHYS 208 Astronomy & Astrophysics | 3 |
| MATH 241 Multivariable Calculus | 4 |
| ENGR 219/223 Electric Circuits w/ Lab | 4 |
| HUM/SSCI Elective | 3 |
| Sophomore Spring | 16 |
| PHYS 261/263 Physics III w/ Lab | 4 |
| MATH 242 Differential Equations | 3 |
| ENGL 102 Advanced Composition & Literature | 3 |
| HUM/SSCI Electives (2) | 6 |
| Junior Fall | 16 |
| PHYS 271 Computational Methods in Physics | 1 |
| PHYS 309 Mathematical Methods of Physics | 3 |
| PHYS 315 Electromagnetic Theory ^{††} | 3 |
| PHYS Elective* | 3 |
| HUM/SSCI Elective | 3 |
| Free Elective | 3 |
| Junior Spring | 15 |
| PHYS 272 Experimental Methods of Physics | 1 |
| PHYS 316 Optics & Wave Motion [†] | 3 |
| PHYS 326 Optics Lab [†] | 1 |
| PHYS 413 Quantum Mechanics [†] | 4 |
| HUM/SSCI Electives (2) | 6 |
| Senior Fall | 16 |
| PHYS 313/323 Classical Mechanics w/ Lab ^{††} | 4 |
| PHYS Elective* | 3 |
| HUM/SSCI Elective | 3 |
| Free Electives (2) | 6 |
| Senior Spring | 15 |
| PHYS 314 Thermodynamics [†] | 3 |
| PHYS 492 Senior Seminar [†] | 3 |
| ASC 400 Values Seminar | 3 |
| Technical Elective** | 3 |
| Free Elective | 3 |
| 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, PHYS 410.

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 School of Education, Innovation, and Continuing Studies section on pages 88 to 95. 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.

Continued on next page.

**CURRICULUM—SCIENCE EDUCATION:
BIOLOGY CERTIFICATION†** **Credits**

| | |
|--|----------------|
| Freshman Fall | 14.5 |
| BIOL 161/165 Biological Concepts I w/ Lab | 4 |
| CHEM 145 General Chemistry I | 3 |
| CHEM 147 General Chemistry Lab I | 1 |
| ENGL 101 Composition & Critical Thought | 3 |
| PSY 105 Introduction to Psychology | 3 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 15.5 |
| BIOL 162 Biological Concepts II | 4 |
| CHEM 146 General Chemistry II | 3 |
| CHEM 148 General Chemistry Lab II | 1 |
| ED 101 Introduction to Teaching | 3 |
| ED 102 Introduction to Educational Technology | 1 |
| ENGL 102 Advanced Composition & Literature | 3 |
| Physical Education Elective | 0.5 |
| Sophomore Fall | 16 |
| BIOL 261 Biological Concepts III | 4 |
| CHEM 255 Organic Chemistry I | 4 |
| CHEM 257 Organic Chemistry I Lab | 1 |
| ED/PSY 250 Effective Instructional Practices | 3 |
| MATH 141 Calculus I* | 4 |
| Sophomore Spring | 17 |
| BIOL 262 Principles of Modern Genetic Analysis | 4 |
| ED/PSY 213 Adolescent Psychology | 3 |
| MATH 142 Calculus II* | 4 |
| HUM Elective | 3 |
| SSCI Elective | 3 |
| Junior Fall | 16 |
| BIOL 301 Introductory Ecology | 4 |
| ED 1422 Teaching English Language Learners | 3 |
| ENVR 171 Principles of Environmental Science†† | 3 |
| ENVR 173 Investigating Environmental Science†† | 1 |
| PHYS 141/143 College Physics I w/ Lab | 5 |
| Junior Spring | 17/18 |
| Advanced Science Elective** | 3/4 |
| PHYS 142/144 College Physics II w/ Lab | 5 |
| English Literature Elective*** | 3 |
| Free Electives | 6 |
| Senior Fall | 15/17 |
| ED 309 Methods: Secondary Science | 3 |
| ACS 400 Values Seminar | 3 |
| HUM Elective | 3 |
| Advanced Science Elective** | 3/4 |
| Advanced Science Elective** | 3/4 |
| Senior Spring | 15 |
| ED 1412 Student Teaching | 9 |
| ED 1421 Literacy Intervention in the Content Areas for Learners with Disabilities | 3 |
| ED 1423 Collaboration & Inclusion | 3 |
| TOTAL CREDITS | 126–129 |

†Students must have current criminal record checks, FBI clearances, and child abuse clearances.

††ENVR 209 may be substituted for ENVR 171 and 173.

*Students may substitute MATH 131–132 for MATH 141–142.

**One advanced science elective must be from the following organismal courses: BIOL 303, 307, 308, 309, 311, 325, 327; one must be from the following cell and molecular courses: BIOL 302, 306, 310, 314, 319, 320, 326; and one must be from the following interorganismal courses: BIOL 312, 315, 340/342, 401, or BCH 451.

***Pennsylvania Department of Education English literature requirement: Courses must be selected from ENGL courses in British or American literature.

**CURRICULUM—SCIENCE EDUCATION:
CHEMISTRY CERTIFICATION†** **Credits**

| | |
|--|----------------|
| Freshman Fall | 14.5 |
| CHEM 145 General Chemistry I | 3 |
| CHEM 147 General Chemistry Lab I | 1 |
| ENGL 101 Composition & Critical Thought | 3 |
| MATH 141 Calculus I | 4 |
| PSY 105 Introduction to Psychology | 3 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 15.5 |
| CHEM 146 General Chemistry II | 3 |
| CHEM 148 General Chemistry Lab II | 1 |
| ED 101 Introduction to Teaching† | 3 |
| ED 102 Introduction to Educational Technology | 1 |
| ENGL 102 Advanced Composition & Literature | 3 |
| MATH 142 Calculus II | 4 |
| Physical Education Elective | 0.5 |
| Sophomore Fall | 17 |
| CHEM 255 Organic Chemistry I | 4 |
| CHEM 257 Organic Chemistry Lab I | 1 |
| ED/PSY 250 Effective Instructional Practices | 3 |
| ENVR 171 Principles of Environmental Science | 3 |
| HUM/SSCI Electives | 6 |
| Sophomore Spring | 17 |
| CHEM 256 Organic Chemistry II | 4 |
| CHEM 258 Organic Chemistry Lab II | 1 |
| CHEM 375 Inorganic Chemistry | 3 |
| ED/PSY 213 Adolescent Psychology | 3 |
| HUM/SSCI Electives | 6 |
| Junior Fall | 15 |
| CHEM 365 Analytical Chemistry | 3 |
| CHEM 367 Analytical Chemistry Lab | 1 |
| PHYS 161 Physics I | 3 |
| PHYS 163 Physics I Lab | 1 |
| BIOL 101 Principles of Biological Systems | 4 |
| ED 1422 Teaching English Language Learners | 3 |
| Junior Spring | 16 |
| CHEM 366 Instrumental Analysis | 3 |
| CHEM 368 Instrumental Analysis Lab | 1 |
| CHEM 398 Research Experience | 2 |
| PHYS 162 Physics II | 3 |
| PHYS 164 Physics Lab II | 1 |
| English Literature Elective** | 3 |
| Free Elective | 3 |
| Senior Fall | 16/18 |
| CHEM 385 Physical Chemistry I | 4 |
| ED 309 Methods: Secondary Science | 3 |
| Science Electives* | 6/8 |
| ASC 400 Values Seminar | 3 |
| Senior Spring | 15 |
| ED 1412 Student Teaching | 9 |
| ED 1421 Literacy Intervention in the Content Areas for Learners with Disabilities | 3 |
| ED 1423 Collaboration & Inclusion | 3 |
| TOTAL CREDITS | 126–128 |

†Students must have current criminal record checks, FBI clearances, and child abuse clearances.

*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 451/453, 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.

**Pennsylvania Department of Education English literature requirement: Courses must be selected from ENGL courses in British or American literature.

**CURRICULUM—SCIENCE EDUCATION:
EARTH AND SPACE CERTIFICATION† Credits**

| | |
|--|-------------|
| Freshman Fall | 15.5 |
| BIOL 161/165 Biological Concepts I w/ Lab | 4 |
| CHEM 145 General Chemistry I | 3 |
| CHEM 147 General Chemistry Lab I | 1 |
| ENGL 101 Composition & Critical Thought | 3 |
| MATH 141 Calculus I* | 4 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 16.5 |
| BIOL 162 Biological Concepts II | 4 |
| CHEM 146 General Chemistry II | 3 |
| CHEM 148 General Chemistry Lab II | 1 |
| ED 101 Introduction to Teaching† | 3 |
| ED 102 Introduction to Educational Technology | 1 |
| MATH 142 Calculus II* | 4 |
| Physical Education Elective | 0.5 |
| Sophomore Fall | 15 |
| ENGL 102 Advanced Composition & Literature | 3 |
| ENVR 171 Principles of Environmental Science | 3 |
| ENVR 173 Investigating Environmental Science | 1 |
| PHYS 141/143 College Physics I w/ Lab | 5 |
| PSY 105 Introduction to Psychology | 3 |
| Sophomore Spring | 15 |
| ED/PSY 213 Adolescent Psychology | 3 |
| ENVR 261 Geographic Information Systems | 3 |
| ESSC/ENVR Elective* | 4 |
| PHYS 142/144 College Physics II w/ Lab | 5 |
| Junior Fall | 17 |
| BIOL 301 Introductory Ecology | 4 |
| ED/PSY 250 Effective Instructional Practices | 3 |
| ENVR 208 Astronomy & Astrophysics | 4 |
| HUM Elective | 3 |
| Free Elective | 3 |
| Junior Spring | 15 |
| ENVR 209 Meteorology | 4 |
| ENVR 201 Environmental Geology | 4 |
| ESSC/ENVR Elective** | 4 |
| SSCI Elective | 3 |
| Senior Fall | 15 |
| ASC 400 Values Seminar | 3 |
| ED 309 Methods: Secondary Science | 3 |
| ED 1422 Teaching English Language Learners | 3 |
| English Literature Elective*** | 3 |
| HUM Elective | 3 |
| Senior Spring | 15 |
| ED 1412 Student Teaching | 9 |
| ED 1421 Literacy Intervention in the Content Areas for Learners with Disabilities | 3 |
| ED 1423 Collaboration & Inclusion | 3 |

TOTAL CREDITS

124

†Students must have current criminal record checks, FBI clearances, and child abuse clearances.

*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.

***Pennsylvania Department of Education English literature requirement: Courses must be selected from ENGL courses in British or American literature.

**CURRICULUM—SCIENCE EDUCATION:
GENERAL SCIENCE CERTIFICATION† Credits**

| | |
|--|-------------|
| Freshman Fall | 15.5 |
| BIOL 161/165 Biological Concepts I w/ Lab | 4 |
| CHEM 145 General Chemistry I | 3 |
| CHEM 147 General Chemistry Lab I | 1 |
| ENGL 101 Composition & Critical Thought | 3 |
| MATH 141 Calculus I* | 4 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 16.5 |
| BIOL 162 Biological Concepts II | 4 |
| CHEM 146 General Chemistry II | 3 |
| CHEM 148 General Chemistry Lab II | 1 |
| ED 101 Introduction to Teaching† | 3 |
| ED 102 Introduction to Educational Technology | 1 |
| MATH 142 Calculus II* | 4 |
| Physical Education Elective | 0.5 |
| Sophomore Fall | 16 |
| BIOL 261 Biological Concepts III | 4 |
| ENVR 171 Principles of Environmental Science | 3 |
| ENVR 173 Investigating Environmental Science | 1 |
| PHYS 141/143 College Physics I w/ Lab | 5 |
| PSY 105 Introduction to Psychology | 3 |
| Sophomore Spring | 17 |
| ENGL 102 Advanced Composition & Literature | 3 |
| ENVR 261 Geographic Information Systems | 3 |
| PHYS 142/144 College Physics II w/ Lab | 5 |
| HUM Elective | 3 |
| Junior Fall | 17 |
| BIOL 301 Introductory Ecology | 4 |
| ED/PSY 250 Effective Instructional Practices | 3 |
| ENVR 208 Astronomy & Astrophysics | 4 |
| SSCI Elective | 3 |
| Free Elective | 3 |
| Junior Spring | 14 |
| ENVR 201 Environmental Geology | 4 |
| ENVR 209 Meteorology | 4 |
| Free Electives | 6 |
| Senior Fall | 15 |
| ASC 400 Values Seminar | 3 |
| ED 309 Methods: Secondary Science | 3 |
| ED 1422 Teaching English Language Learners | 3 |
| English Literature Elective** | 3 |
| HUM Elective | 3 |
| Senior Spring | 15 |
| ED 1412 Student Teaching | 9 |
| ED 1421 Literacy Intervention in the Content Areas for Learners with Disabilities | 3 |
| ED 1423 Collaboration & Inclusion | 3 |

TOTAL CREDITS

126

†Students must have current criminal record checks, FBI clearances, and child abuse clearances.

*Students may substitute MATH 131–132 for MATH 141–142.

**Pennsylvania Department of Education English literature requirement: Courses must be selected from ENGL courses in British or American literature.

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†** **Credits**

| | |
|--|-------------|
| Freshman Fall | 14.5 |
| ENGL 101 Composition & Critical Thought | 3 |
| MATH 141 Calculus I | 4 |
| PHYS 161 Physics I | 3 |
| PHYS 163 Physics I Lab | 1 |
| PSY 105 Introduction to Psychology | 3 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 15.5 |
| ED 101 Introduction to Teaching | 3 |
| ED 102 Introduction to Educational Technology | 1 |
| ENGL 102 Advanced Composition & Literature | 3 |
| MATH 142 Calculus II | 4 |
| PHYS 162 Physics II | 3 |
| PHYS 164 Physics II Lab | 1 |
| Physical Education Elective | 0.5 |
| Sophomore Fall | 17 |
| CHEM 145 General Chemistry I | 3 |
| CHEM 147 General Chemistry I Lab | 1 |
| ED/PSY 250 Effective Instructional Practices | 3 |
| MATH 241 Multivariable Calculus | 4 |
| PHYS 208 Astronomy & Astrophysics | 3 |
| HUM Elective | 3 |
| Sophomore Spring | 17 |
| CHEM 146 General Chemistry II | 3 |
| CHEM 148 General Chemistry II Lab | 1 |
| ED/PSY 213 Adolescent Psychology | 3 |
| MATH 242 Differential Equations | 3 |
| PHYS 261 Physics III | 3 |
| PHYS 263 Physics III Lab | 1 |
| Free Elective | 3 |
| Junior Fall | 17 |
| BIOL 101 Principles of Biological Systems | 4 |
| ED 1422 Teaching English Language Learners | 3 |
| PHYS 271 Computational Methods of Physics | 1 |
| PHYS 309 Mathematical Methods of Physics* | 3 |
| PHYS 315 Electromagnetic Theory* | 3 |
| English Literature Elective** | 3 |
| Junior Spring | 15 |
| PHYS 272 Experimental Methods of Physics | 1 |
| PHYS 278 Astronomy & Astrophysics Lab | 1 |
| PHYS 314 Thermodynamics or PHYS 316 Optics*** | 3 |
| PHYS 413 Quantum Mechanics*** | 4 |
| HUM Elective | 3 |
| Free Elective | 3 |
| Senior Fall | 15 |
| ASC 400 Values Seminar | 3 |
| ED 309 Methods: Secondary Science | 3 |
| PHYS 313 Classical Mechanics I* | 3 |
| PHYS 492 Senior Seminar | 3 |
| SSCI Elective | 3 |
| Senior Spring | 15 |
| ED 1412 Student Teaching | 9 |
| ED 1421 Literacy Intervention in the Content Areas for Learners with Disabilities | 3 |
| ED 1423 Collaboration & Inclusion | 3 |
| TOTAL CREDITS | 126 |

†Students must have current criminal record checks, FBI clearances, and child abuse clearances.

*PHYS 309, 315 and PHYS 313, 323 are taught in the fall semester alternate years.

**Pennsylvania Department of Education English literature requirement: Courses must be selected from ENGL courses in British or American literature.

***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 171/173 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 141–142). Note: The experimental science minor may not be awarded to biology majors.

INTERDISCIPLINARY MAJORS

GENDER AND WOMEN'S STUDIES

Gender and women's studies creates a critical framework for a systematic re-examination of the concept of gender from historical, economic, political, social, and cultural perspectives. The components of the major include interdisciplinary core courses that survey research methods and scholarship, and a selection of elective courses drawn from a variety of disciplines. Classes offered in or cross-listed with gender and women's studies examine the rich and complicated intersections of gender, sexuality, race, and class from a variety of cross-disciplinary perspectives.

The gender and women's studies program and courses address one or more of the following issues: (1) the importance of becoming familiar with contemporary feminist theoretical frameworks, methodologies, issues, and topics, and their relation to traditional disciplines; (2) recognizing the importance of focusing on issues of gender, race, class, and sexuality and the connections among them; (3) broadening and enriching analytic skills while drawing on the interdisciplinary perspectives of gender and women's studies; (4) understanding the diversity of women's experiences in the United States and abroad.

Students may pursue only a Gender and Women's Studies major, or a double major with another discipline. Students may also take advantage of the dual major in Gender and Women's Studies and Social Work (see page 112 for the dual major curriculum ladder).

**REQUIREMENTS—
GENDER & WOMEN'S STUDIES MAJOR** **CREDITS**

| | |
|--|---|
| Required Courses (12 credits)* | |
| GWS 101 Introduction to Women's Studies** | 3 |
| GWS 355 Feminist Theories and Methodology | 3 |
| GWS 394 Gender & Women's Studies Practicum | 3 |
| GWS 409 Senior Capstone | 3 |

Electives (21 credits)***

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.

| | |
|---|--|
| GWS 104/HIST 104 Women in the Western Tradition | |
| GWS 126/CSCI 126 Women in Computing | |
| GWS 130/ENG 130/HUM 130 Literature of the Non-Western World | |
| GWS 146/ENG 146 Women Writers: 1800 to the Present | |
| GWS 147/ENG 147 Literature of the American Minority | |
| GWS 188 Special Topics in Women's Studies | |

GWS 203/SOC 203 Sociology of Youth
 GWS 206/PSY 206 Psychology of Women
 GWS 215/SOC 215 The Family
 GWS 225/SW 225 Women's Issues Across the Life Span
 GWS 230/CJ 230 Domestic Violence & the Justice System
 GWS 240/SOC 240 Gender & International Development
 GWS 245/CJ 245 Women & Criminal Justice
 GWS 270/SW 270 Human Sexuality
 GWS 275/SOC 275 African & African American Women in Society
 GWS 288 Special Topics in Women's Studies
 GWS 305/PSY 305 Psychology of Women, Men, & Work
 GWS 312/SOC 312 Sexualities
 GWS 313/HUM 313 Selected Topics in Literature & Film
 GWS 315/EC 315 Women, Men, & Work
 GWS 317/SOC 317 Sociology of Sex & Gender
 GWS 321/HIST 321 Women in the World Wars
 GWS 350/AH 350 Women & Art
 GWS 351/HIST 351 History of Women in America to 1870
 GWS 352/HIST 352 History of Women in America Since 1870
 GWS 367/SOC 367 Social Movements & Social Change
 GWS 371/HIST 371 Women & Work in 20th-Century United States
 GWS 388 Special Topics in Women's Studies
 GWS 499 Independent Study
 GWS M950/HUM M950 The Legacy of Eve

Related Fields (9 credits)

Three courses from related disciplines to be determined in consultation with the director of gender and women's studies.

TOTAL CREDITS **42**

**Core gender and women's studies courses will periodically be offered in the evening for both day and evening students.*

***Counts for general education distribution credit.*

****All gender and 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.*

GENDER AND WOMEN'S STUDIES MINOR

A total of 18 semester hours. Required courses are GWS 101 Introduction to Gender and Women's Studies and five elective gender and 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.

MEDIA INFORMATICS

Media informatics looks at the interdependent relationships between humans, computers, and media systems. This relationship is deemed interdependent because each helps shape the other. Human agency creates both computers and media systems and humans are, in turn, shaped by those systems as well. Significantly, it is within this interdependent set of relationships that media texts are both consumed and created.

The purpose of the media informatics major is to ensure graduates attain key competencies, an appreciation of the depth of the field, and an understanding of how they interact with both computers and information systems. The program is also designed to give students maximum flexibility in choosing a specialized focus that can be adapted to the changing job market and social environment. Therefore, in addition to a media informatics core, students pursue a specialized concentration or cognate of courses to meet their interests and needs. Finally, media informatics students take part in a two-semester media informatics capstone experience during the senior year.

REQUIREMENTS—MEDIA INFORMATICS CREDITS

Core Courses (37 credits)

| | |
|---|---|
| MIN 188 Introduction to Informatics | 3 |
| COMS 130 Media & Society | 3 |
| COMS 213 Visual Literacy | 3 |
| COMS/MIN 201 Social Media Informatics | 3 |
| COMS 220 Media Law & Ethics | 3 |
| COMS 230 Communication Theory | 3 |
| CSCI 131 Introduction to Programming (PYTHON) | 3 |
| CSCI 288A Data Mining (with Lab) | 4 |
| CSCI 288B Applications of Systems Analysis | 3 |
| ENGL 102 Advanced Composition & Literature | 3 |
| MATH 117 Elementary Functions | 3 |
| PHIL 350 Ethics | 3 |

Applied Concentrations (24–25 credits)

Pick **two** concentrations from the list below and complete four courses from each concentration.

Capstone Sequence (7 credits)

| | |
|---|---|
| MIN 388 Media Informatics Capstone Proposal | 1 |
| MIN 488a Capstone Course I | 3 |
| MIN 488b Capstone Course II | 3 |

TOTAL CREDITS **68–69**

APPLIED CONCENTRATIONS (Choose Two)

Audio-Visual (select four courses)

- COMS 260 Basic Video (required)
- COMS 360 Advanced Video
- COMS 265 Radio Production
- COMS 395 Editing Film and Video
- MSTU 309 Musical Aspects of Recording

Graphics & Web Development (select four courses)

- COMS 266 Basic Web Design (required)
- COMS 264 Layout & Design
- COMS 364 Digital Imaging
- COMS 368 Interactive Media
- CSCI 371 Computer Graphics**

Gaming & Artificial Intelligence (select four courses)

- CSCI 355 Artificial Intelligence I* (required)
- CSCI 356 Artificial Intelligence II
- CSCI 371 Computer Graphics I** (required)
- CSCI 372 Computer Graphics II
- CSCI 381 Computer Network I**
- CSCI 388 Game Design

Information Gathering & Dissemination (select four courses)

- COMS 217 Broadcast Newswriting
- PRWR 110 Fundamentals of Journalism (required)
- PRWR 320 Technical Writing
- PRWR 330 Multimedia Writing for Business & Training Program
- PRWR 370 Writing in the Sciences
- ENVR 261 Global Information Systems with Lab***

**Required prerequisites: PHIL 120, CSCI 247, and CSCI 248.*

***Required prerequisite: CSCI 143, CSCI 144, or CSCI 247.*

****ENVR 261 satisfies lab science requirement.*

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 fully qualified to become commissioned 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 if positions are available.

The military science curriculum focuses on leadership development with the goal of preparing cadets for commissioning as second lieutenants following graduation. ROTC produces 60 percent of the Army's Officer Corps and over 90 percent of all Army Nurses. The curriculum is intense with a direct practical application under the Leadership Development Program. 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 marksmanship, rappelling, small unit tactics, drill and ceremony, physical training, and other basic military skills, all with a focus on leadership tasks.

Army ROTC offers competitive 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 from Widener University. For more information, see the "ROTC Scholarship" section of this *Catalog* and contact the Widener University Department of Military Science at 610-499-4098.

BASIC COURSE Credits

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.

Freshman Year

| | |
|--|-----|
| MS 101 Leadership & Personal Development | 1 |
| MS 102 Introduction to Tactical Leadership | 1 |
| Enroll in PE 107B | 0.5 |
| MS 100 Leadership Lab* | 0 |

Sophomore Year

| | |
|---|---|
| MS 201 Innovative Team Leadership | 2 |
| MS 202 Foundations of Tactical Leadership | 2 |
| MS 100 Leadership Lab* | 0 |

TOTAL CREDITS 6.5

**Restricted to enrolled/contracted cadets.*

ADVANCED COURSE Credits

Junior Year

| | |
|--|---|
| 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 U.S. military history course from the following: HIST 321, 377, 388, or MS 400.

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 curricula 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 18 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 graduate student enrollment while maintaining desirable levels of diversity and quality in the student body.

Goal 4: Engage all SBA 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 innovation 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.

SBA 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. To enroll in an internship for credit, students must have junior standing and a cumulative GPA of 2.5 or higher. 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.

SUSTAINABILITY AND GLOBAL AWARENESS

Sustainable development meets the needs of the present without compromising the ability of future generations to meet their own needs. Students interested in examining the network of dependent relationships that exist between the environment, the economy, and the culture, and understanding that these interrelationships exist on the local, regional, national, and global levels may choose their general education electives to focus on these areas. General education electives include humanities, social science, and math/science courses.

SAP RECOGNITION AWARD

The SAP Recognition Award is presented 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 SAP courses include:

- ACCT 330 Accounting Information Systems
- MIS 290 Management Information Systems (only selected sections of this course)

- MIS 430 ERP Systems & Workflow Management
- MIS 441 Decision Support Systems
- MKT 409 Customer Relationship Management
- OPM 460 Supply Chain Management

The courses currently listed as having SAP content are updated and modified on a regular basis. The list above is subject to change. Please consult the department head of accounting and information management to confirm that a listed course does have the appropriate SAP content in a given semester.

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.

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 SBA 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.
- To comply with the AICPA's and Pennsylvania's 150-credit-hour requirement to become a certified public accountant, 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 two courses toward the MBA or MS in business process innovation degree.

THE CURRICULA

Basic Curricula in Accounting, Business Informatics, Economics, Finance, 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, MGT 100, 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).

BUSINESS ADMINISTRATION REQUIREMENTS

Core Business Curriculum—(52 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)
 MGT 210 Foundations of Management
 MIS 290 Management Information Systems
 QA 251-252 Elementary / Intermediate Statistics
 EC Elective (300 level or above)
 FIN 303 Financial Management
 MGT 310 Leadership
 MGT 365 International Business
 MKT 300 Marketing Principles
 OPM 352 Operations Management
 MGT 452 Management Policy & Strategy

Field of Specialization

Accounting, 29 credits
 Business Informatics, 27 credits
 Economics, 21–28 credits based upon concentration
 Finance, 24–31 credits
 International Business, 18 credits
 Management, 21–27 credits

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 127 credits for the bachelor of science in business administration. Economics majors following the financial services track require 123 credits for the bachelor of science in business administration.

** Major/concentration may specify courses.

MINIMUM CLASS STANDING REQUIREMENTS

| Class year | Completed credits |
|------------|-------------------|
| Freshman | 0-27.99 |
| Sophomore | 28-56.99 |
| Junior | 57-88.99 |
| Senior | 89 or more |

To graduate in four years (eight semesters), students should complete 15–16 credits per semester.

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. Upon graduation, students will earn a bachelor of science in business administration.

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-credit-hour requirement.

In addition to the School of Business Administration's requirements, accounting majors **must take** the following courses (29 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 (4 credits)
- ACCT 405 Federal Income Taxation (4 credits)
- ACCT 415 Auditing & Professional Responsibility (4 credits)
- ACCT 451 Accounting Seminar
- ACCT Elective (300 level or higher)

Note: In an effort to comply with state CPA boards' 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 two courses toward the MS in business process innovation or MBA degree.

Experiential Learning Requirement

All accounting students are required to complete one experiential learning opportunity. This requirement can be satisfied by one of the following:

- One full-time co-op assignment
- ACCT 498—an approved 3-credit internship
- MGT 451—Senior Project

See also "Cooperative (Co-Op) Programs in Accounting, Economics, International Business, and Management" on page 80.

CURRICULUM—ACCOUNTING Credits

For freshman entering in fall 2011 and after, please note the following course sequencing: BUS 110 and ACCT 204 are taken in the freshman fall semester, and BLAW 150 and ACCT 205 are taken in the freshman spring semester. A copy of the recommended course sequencing for subsequent semesters may be obtained from an advisor or the dean's office.

| | |
|---|-------------|
| Freshman Fall | 16.5 |
| ANTH 105 and 1 Elective; or 2 Electives [†] | 6 |
| BLAW150 Legal & Ethical Environment of Business ^{††} | 3 |
| ENGL 101 Composition & Critical Thought | 3 |
| MATH 117 Elementary Functions* | 3 |
| MIS 180 Computing & Spreadsheets | 1 |
| Physical Education Elective | 0.5 |

| | |
|---|-------------|
| Freshman Spring | 15.5 |
| ACCT 204 Financial Accounting** | 3 |
| BUS 110 Introduction to Business Concepts ^{††} | 3 |
| ENGL 102 Advanced Composition & Literature | 3 |
| MATH 118 Elementary Calculus I* | 3 |
| Elective [†] | 3 |
| Physical Education Elective | 0.5 |
| Sophomore Fall | 15 |
| ACCT 205 Managerial Accounting** | 3 |
| EC 201 Principles of Macroeconomics ^{††} | 3 |
| MGT 210 Foundations of Management ^{††} | 3 |
| MIS 290 Management Information Systems | 3 |
| QA 251 Elementary Statistical Analysis | 3 |
| Sophomore Spring | 16 |
| ACCT 308 Intermediate Accounting** | 4 |
| ACCT 330 Accounting Information Systems ^{††} | 3 |
| EC 202 Principles of Microeconomics ^{††} | 3 |
| PRWR 215 Effective Communications | 3 |
| QA 252 Intermediate Statistical Analysis | 3 |
| Junior Fall | 16 |
| ACCT 309 Intermediate Accounting II** | 4 |
| FIN 303 Financial Management ^{††} | 3 |
| MKT 300 Marketing Principles ^{††} | 3 |
| MGT 310 Leadership ^{††} | 3 |
| OPM 352 Operations Management ^{††} | 3 |
| Junior Spring | 16 |
| ACCT 402 Advanced Accounting ^{††} | 4 |
| ACCT Elective | 3 |
| MGT 365 International Business ^{††} | 3 |
| PHIL 352 Business Ethics ^{††} | 3 |
| Elective [†] | 3 |
| Senior Fall | 16 |
| ACCT 405 Federal Income Taxation ^{††} | 4 |
| ACCT 498 or MGT 451*** | 3 |
| EC 300- or 400-level Elective | 3 |
| MGT 452 Management Policy & Strategy | 3 |
| Elective [†] | 3 |
| Senior Spring | 16 |
| ACCT 415 Auditing & Professional Responsibility ^{††} | 4 |
| ACCT 451 Accounting Seminar ^{††} | 3 |
| 3 Electives ^{†,††} | 9 |

TOTAL CREDITS **127**

*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.
 *** Students who complete a three month full-time co-op experience are not required to complete ACCT 498 or MGT 451. These students may substitute a free elective in place of ACCT 498 or MGT 451.
[†]Accounting majors must complete two humanities electives, two social science electives (one at the 200+ level), two science/math electives, 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. For 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.

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 social science, computer science, and criminal justice.

REQUIREMENTS: FORENSIC ACCOUNTING MINOR

Prerequisites are in parentheses.

| Required Courses | Credits |
|---|----------------|
| ACCT 307 Fraud Examination (ACCT 204, 205, junior standing) | 3 |
| MIS 358 Database Systems (MIS 290) | 3 |
| Social Science Elective*: choose from PSY 105, PSY 200, PSY 235, SOC 105, SOC 201, CJ 105, CJ 225, CJ 305, CJ 320, CJ 325 | 3 |

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) | |
| ACCT 435 Advanced Accounting Information Systems (MIS 290, ACCT 330, junior standing) | |
| MIS 300- or 400-level elective (MIS 290) | |
| Any one 200-level or higher SSCI course not already taken from the list above* | |
| CSCI 130 Introduction to Computer Forensics** | |
| A course approved by the department head of accounting and information management | |

* Courses in these areas are eligible to be applied to meet the social science requirements. Refer to the Distribution Requirement (p. 19).
 ** This course counts as a science elective.

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* (4 credits)
- ACCT 309 Intermediate Accounting II* (4 credits)
- 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 (4 credits)
- ACCT 404 International Accounting & Reporting
- ACCT 405 Federal Income Taxation (4 credits)
- 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 (4 credits)
- 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.

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 Credits

Required SBA Courses

| | |
|--|-----|
| ACCT 204 Financial Accounting | 3 |
| ACCT 205 Managerial Accounting | 3 |
| BLAW 260 Business Law or | |
| BLAW 288 Business Law for Criminal Justice Students or | |
| BLAW 280 Sports & the Law or | |
| BLAW 150 Legal Environment of Business | 3 |
| Choose any two of the following courses: | 6-8 |
| 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 (4 credits) | |
| ACCT 309 Intermediate Accounting II (4 credits) | |
| ACCT 314 Advanced Managerial Accounting | |
| ACCT 330 Accounting Information Systems | |
| ACCT 417 Internal Auditing | |

Total **15-17**

Non-SBA Requirements

MATH 117 (science elective)
CJ 320 White Collar Crime (CJ elective)
Computer proficiency (determined by the department head of Accounting and Information Management)

Other Recommended Courses

MATH 118 (science elective)
PHIL 352 (humanities elective)
CSCI 101 or MIS 180 or IS 101

150-CREDIT HOUR REQUIREMENT IN PA

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). Qualified students with a cumulative GPA of 3.0 or higher are encouraged to complete one extra 3-credit course each semester starting in the second semester of their freshman year. Public accounting firms require accounting students to indicate their 150-credit plan on their résumés. For questions concerning the 150-credit hour requirement and the options available, contact the department head of Accounting and Information Management.

BUSINESS INFORMATICS

Business informatics appeals to students who have an interest in the business world and enjoy working with technology, social networking, or the Internet. This rapidly growing area combines business strategy and information technology and applies to a wide range of industries. Graduates have the skills to become leaders in a variety of businesses, such as applications development, data and database administration, Internet and e-commerce, networking, telecommunications, and software development.

Widener's business informatics major expands the breadth and depth of business and technology integration by sharing School of Business Administration faculty expertise with that of the computer science faculty from the College of Arts and Sciences. Business informatics students develop a business mindset and technology proficiency, a powerful combination in the job market of the future.

Course work emphasizes the importance of leadership and ethics in the changing business environment. Students undertake a traditional core of business requirements combined with courses specific to the business informatics major, such as Introduction to Informatics, Project Management, and Structured Systems Analysis and Design. Graduates earn how to:

- Capture and analyze data.
- Understand how technology supports broader business objectives and adds value.
- Integrate and leverage programs, resources, and expertise of various disciplines, including computer science, management information systems, and communication studies.
- Utilize the principles of business process management.

CURRICULUM—BUSINESS INFORMATICS Credits

| | |
|--|-------------|
| Freshman Fall | 16.5 |
| CSCI 131 Introduction to Programming | 3 |
| ENGL 101 Composition & Critical Thought | 3 |
| MATH 117 Elementary Functions* | 3 |
| MGT 100 Understanding & Working in Organizations | 3 |
| MIN 188 Introduction to Informatics | 3 |
| MIS 180 Computing & Spreadsheets** | 1 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 15.5 |
| ANTH 105 Cultural Anthropology** | 3 |
| BLAW 150 Legal & Ethical Environment of Business | 3 |
| ENGL 102 Advanced Composition & Literature | 3 |
| MATH 118 Elementary Calculus I* | 3 |
| Humanities Elective** | 3 |
| Physical Education Elective | 0.5 |
| Sophomore Fall | 15 |
| ACCT 204 Financial Accounting | 3 |
| CSCI 200 Introduction to Data Mining | 3 |
| EC 201 Principles of Macroeconomics** | 3 |
| MIS 290 Management Information Systems** | 3 |
| QA 251 Elementary Statistical Analysis | 3 |
| Sophomore Spring | 15 |
| ACCT 205 Managerial Accounting | 3 |
| EC 202 Principles of Microeconomics** | 3 |
| QA 252 Intermediate Statistical Analysis | 3 |
| MGT 210 Foundations of Management** | 3 |
| MIS 363 Object-Oriented Design Development | 3 |
| Junior Fall | 15 |
| FIN 303 Financial Management** | 3 |
| MGT 310 Leadership | 3 |
| MGT 365 International Business** | 3 |
| MIS 358 Database Management Systems | 3 |
| PRWR 215 Effective Communication** | 3 |
| Junior Spring | 15 |
| COMS 201 Social Media Informatics | 3 |
| MIS 329 Systems Analysis & Design | 3 |
| MKT 300 Marketing Principles** | 3 |
| OPM 352 Operations Management** | 3 |
| OPM 360 Project Management | 3 |
| Senior Fall | 15 |
| MIS 430 ERP Systems | 3 |
| PHIL 352 Business Ethics** | 3 |
| MIS Elective or SAP Course | 3 |
| Social Science Elective** | 3 |
| Upper-Level Economics Elective** | 3 |

| | |
|--|-----------|
| Senior Spring | 15 |
| MGT 452 Management Policy & Strategy** | 3 |
| MIS 453 MIS Curriculum Integration | 3 |
| Humanities Elective** | 3 |
| MIS/CSCI Elective** | 3 |
| Elective** | 3 |

TOTAL CREDITS **122**

*Qualified students are urged to substitute MATH 141, 142.

**Course may be taken in either the fall or spring semester.

Note: Students can create a track/concentration through their electives. Any student completing a concentration with SAP courses will earn the SAP Undergraduate Recognition Award upon graduation. See your advisor for more information.

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 408 International Economics
- EC 451 Economics Seminar
- One economics elective*
- One international SBA elective

*In addition to the required SBA core economics elective.

See also “Cooperative Programs in Accounting, Economics, International Business, and Management” on page 80.

CURRICULUM—ECONOMICS **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 |
| MGT 210 Foundations of Management** | 3 |
| QA 251 Elementary Statistical Analysis | 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 |
| Elective† | 3 |
| Junior Fall | 15 |
| EC 311 Microeconomic Theory | 3 |
| FIN 303 Financial Management** | 3 |
| MGT 310 Leadership | 3 |
| EC 408 International Economics | 3 |
| Elective† | 3 |

| | |
|---|-----------|
| Junior Spring | 15 |
| EC 312 Macroeconomic Theory | 3 |
| EC 401 Money & Financial Institutions | 3 |
| MGT 365 International Business** | 3 |
| MKT 300 Marketing Principles** | 3 |
| OPM 352 Operations Management** | 3 |

Senior Fall

| | |
|--|---|
| MGT 452 Management Policy & Strategy | 3 |
| PHIL 352 Business Ethics | 3 |
| International SBA Elective | 3 |
| EC Elective | 3 |
| 1 Elective† | 3 |

Senior Spring

| | |
|-----------------------------|---|
| EC 451 Senior Project | 3 |
| EC Elective | 3 |
| 3 Electives† | 9 |

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.

ECONOMICS/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:

- ACCT 405* Federal Income Tax (4 credits)
- ACCT 408* Principles of Estate Planning
- ACCT 409* Pensions and Retirement
- EC 311 Microeconomic Theory
- EC 312 Macroeconomic Theory
- EC 401* Money and Financial Institutions
- EC 408 International Economics
- EC 453* Financial Services Seminar
- FIN 305*,** Investments
- FIN 320* Risk Management and Finance

*Courses meet the CFP® course content requirements.

**FIN 305 Investments may count as an economics elective for economics majors only.

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 |
| 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 |
| 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 312 Macroeconomic Theory | 3 |
| EC 408 International Economics | 3 |
| FIN 303 Financial Management | 3 |
| MGT 310 Leadership | 3 |
| PHIL 352 Business Ethics* | 3 |
| Junior Spring | 15 |
| EC 311 Microeconomic Theory | 3 |
| EC 401 Money & Financial Institutions | 3 |
| FIN 320 Risk Management & Insurance Planning | 3 |
| MGT 365 International Business* | 3 |
| OPM 352 Operations Management | 3 |
| Senior Fall | 16 |
| ACCT 405 Federal Income Tax | 4 |
| ACCT 408 Principles of Estate Planning | 3 |
| FIN 305 Investments | 3 |
| MKT 300 Marketing Principles | 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 **123**

*Course may be taken in the fall or spring semester.

** EC 201 or EC 202 may be offered in 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.

FINANCE

The finance major permits students to specialize in the traditional finance discipline or in the emerging financial planning discipline. The traditional finance track is intended to prepare students for professional positions with financial institutions, finance departments of business enterprises, and investment companies. The financial planning track is appropriate for students who wish to start their own financial planning business or work in the broad area of financial services. In addition to the core curriculum, finance majors are required to complete the following courses (24 credits) and 3 credits of internship:

- EC 312 Macroeconomic Theory
- FIN 305 Investments
- FIN 423 International Finance
- FIN 450 Financial Practices and Regulations
- Four finance electives*

*ACCT 420 qualifies as a finance elective.

CURRICULUM—FINANCE

Credits

| | |
|--|-------------|
| Freshman Fall | 16.5 |
| ANTH 105 Cultural Anthropology | 3 |
| ENGL 101 Composition & Critical Thought | 3 |
| MATH 117 Elementary Functions* | 3 |
| MIS 180 Computing & Spreadsheets** | 1 |
| MGT 100 Understanding & Working in Organizations | 3 |
| 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 202 Principles of Microeconomics** | 3 |
| MGT 210 Foundation of Management | 3 |
| PRWR 215 Effective Communication** | 3 |
| QA 251 Elementary Statistical Analysis | 3 |
| Sophomore Spring | 15 |
| ACCT 205 Managerial Accounting | 3 |
| EC 201 Principles of Macroeconomics** | 3 |
| MIS 290 Management Information Systems** | 3 |
| QA 252 Intermediate Statistical Analysis | 3 |
| 1 Elective† | 3 |
| Junior Fall | 15 |
| EC 312 Macroeconomic Theory | 3 |
| FIN 303 Financial Management** | 3 |
| MGT 310 Leadership | 3 |
| OPM 352 Operations Management** | 3 |
| 1 Elective† | 3 |

| | |
|---|------------|
| Junior Spring | 15 |
| FIN 305 Investments | 3 |
| MKT 300 Marketing Principles** | 3 |
| MGT 365 International Business** | 3 |
| FIN Elective | 3 |
| 1 Elective [†] | 3 |
| Senior Fall | 15 |
| FIN 423 International Finance | 3 |
| MGT 452 Management Policy & Strategy | 3 |
| PHIL 352 Business Ethics | 3 |
| FIN Elective | 3 |
| FIN Internship | 3 |
| Senior Spring | 15 |
| FIN 450 Financial Practices & Regulations | 3 |
| 2 FIN Electives | 6 |
| 2 Electives [†] | 6 |
| TOTAL CREDITS | 122 |

*Qualified students are urged to substitute MATH 141, 142.

**Course may be taken in either the fall or spring semester.

[†]Finance majors must complete two humanities electives, two social science electives (one at the 200+ level), two science/math electives, and two free electives.

See also “Cooperative Programs in Accounting, Economics, International Business, and Management” on page 80.

**CURRICULUM—FINANCE/
FINANCIAL PLANNING TRACK** **Credits**

| | |
|--|-------------|
| Freshman Fall | 16.5 |
| ANTH 105 Cultural Anthropology* | 3 |
| ENGL 101 Composition & Critical Thought | 3 |
| MATH 117 Elementary Functions | 3 |
| MIS 180 Computing & Spreadsheets* | 1 |
| MGT 100 Understanding & Working in Organizations | 3 |
| 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 202 Principles of Microeconomics** | 3 |
| MGT 210 Foundation of Management | 3 |
| PRWR 215 Effective Communication | 3 |
| QA 251 Elementary Statistical Analysis | 3 |
| Sophomore Spring | 15 |
| ACCT 205 Managerial Accounting | 3 |
| EC 201 Principles of Macroeconomics** | 3 |
| MIS 290 Management Information Systems | 3 |
| QA 252 Intermediate Statistical Analysis | 3 |
| 1 Elective [†] | 3 |
| Junior Fall | 15 |
| EC 312 Macroeconomic Theory | 3 |
| FIN 303 Financial Management** | 3 |
| MGT 310 Leadership | 3 |
| PHIL 352 Business Ethics* | 3 |
| 1 Elective [†] | 3 |
| Junior Spring | 15 |
| FIN 305 Investments | 3 |
| FIN 320 Risk Management & Insurance Planning | 3 |
| MGT 365 International Business* | 3 |
| OPM 352 Operations Management | 3 |
| 1 Elective [†] | 3 |

| | |
|---|------------|
| Senior Fall | 16 |
| ACCT 405 Federal Income Tax | 4 |
| ACCT 408 Principles of Estate Planning | 3 |
| MKT 300 Marketing Principles | 3 |
| FIN Elective | 3 |
| FIN Internship | 3 |
| Senior Spring | 15 |
| ACCT 409 Pension & Retirement Planning | 3 |
| FIN 450 Financial Practices & Regulations | 3 |
| FIN 453 Financial Planning Seminar | 3 |
| MGT 452 Management Policy & Strategy | 3 |
| FIN Elective | 3 |
| TOTAL CREDITS | 123 |

*Course may be taken in either the fall or spring semester.

**EC 201 and 202 may be offered in summer or spring.

[†]Finance majors must complete two humanities electives, two social science electives (one at the 200+ level), and science/math electives.

See also “Cooperative Programs in Accounting, Economics, International Business, and Management” on page 80.

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 Senior Project
- OPM 445 Management of Tech., Productivity, & Change
- POLS 102 Foreign Governments
- POLS 221 Introduction to International Relations
- POLS 222 American Foreign Policy
- Management Elective (3 credits)
- Modern Language (6 credits)

See also “Cooperative Programs in Accounting, Economics, Economics/Financial Services, International Business, and Management” on page 80.

MINOR IN INTERNATIONAL BUSINESS

The international business minor is designed for students who are majoring in accounting, economics, or management, and who would like to learn more about the global nature of various business functions. Businesses of all sizes and types are now competing in a global marketplace, and they expect their managers and employees to be familiar with the global economy and competent in the areas of international finance, world-wide operations, and cultural diversity. The international business minor enables students to develop skills in international finance, international economics, global operations, and international human resource management.

Students may earn a minor by completing any three of the following courses:

- ACCT 404 International Accounting and Reporting
- EC 408 International Economics
- FIN 423 International Finance
- MHR 465 International Human Resource Mgt
- MKT 410 International Marketing
- OPM 375 Global Operations Management

CURRICULUM—INTERNATIONAL BUSINESS Credits

| | |
|---|-------------|
| Freshman Fall | 16.5 |
| ANTH 105 Cultural Anthropology | 3 |
| BLAW 150 Legal & Ethical Environment of Business ^{††} | 3 |
| ENGL 101 Composition and Critical Thought | 3 |
| MATH 117 Elementary Functions* | 3 |
| MIS 180 Computing & Spreadsheets ^{††} | 1 |
| Modern Language Elective | 3 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 15.5 |
| ENGL 102 Advanced Composition & Literature | 3 |
| MATH 118 Elementary Calculus I* | 3 |
| MGT 100 Understanding & Working in Organizations | 3 |
| Modern Language Elective | 3 |
| Elective [†] | 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 |
| EC 202 Principles of Microeconomics ^{††} | 3 |
| POLS 102 Foreign Government & Politics | 3 |
| QA 252 Intermediate Statistical Analysis | 3 |
| Elective [†] | 3 |
| Junior Fall | 15 |
| FIN 303 Financial Management | 3 |
| MGT 310 Leadership | 3 |
| MGT 365 International Business | 3 |
| MIS 290 Management Information Systems ^{††} | 3 |
| POLS 221 Introduction to International Relations | 3 |
| Junior Spring | 15 |
| MHR 465 International Human Resource Management | 3 |
| MKT 300 Marketing Principles ^{††} | 3 |
| OPM 352 Operations Management ^{††} | 3 |
| PHIL 352 Business Ethics | 3 |
| POLS 222 American Foreign Policy | 3 |
| Senior Fall | 15 |
| EC 408 International Economics | 3 |
| FIN 423 International Finance | 3 |
| MGT 451 Senior Project ^{††} | 3 |
| MGT Elective ^{††} | 3 |
| Elective [†] | 3 |
| Senior Spring | 15 |
| MGT 452 Management Policy & Strategy ^{††} | 3 |
| MKT 410 International Marketing | 3 |
| OPM 445 Management of Tech., Productivity, & Change ^{††} | 3 |
| Two Electives [†] | 6 |
| 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 major prepares students for careers in the functional areas of management within private or public sector organizations. It also provides a sound preparation for students who want to pursue graduate studies in management and related areas of business. Students in the management major may specialize in functional fields such as general management, marketing and advertising, human resources management, operations management, or sports management by concentrating their electives in these specific areas. Descriptions and course requirements for the different management concentrations are provided below.

See also “Cooperative (Co-Op) Programs in Accounting, Economics, International Business, and Management” on page 80.

CONCENTRATION IN GENERAL MANAGEMENT

Students in the general management concentration develop skills and learn innovative approaches in the management of people, processes, and projects. The ability to understand, deal with, and manage people, processes, and projects is critical in most jobs in today’s competitive business environment. These are also competencies needed by supervisors and managers at every level of the organization. It is widely acknowledged that such skills are in great demand by employers and in short supply among the pool of job applicants. Students who graduate with these general management skills will be well positioned to perform effectively in their jobs and advance their careers.

In addition the core business curriculum, students in the general management concentration are required to take the following courses:

Required Courses:

MGT 451 Senior Project
MHR 316 Human Resources Management
OPM 360 Project Management
OPM 445 Management of Technology, Productivity, & Change

Elective Courses—Select any 3 of the following courses:

MGT 3XX Sustainability, Innovation, & Entrepreneurship
MHR 325 Managing Diversity in the Workplace
MHR 465 International Human Resource Management
MIS 430 ERP Systems & Workflow Management
MKT 320 Event Planning & Sport Management
MKT 405 Sales Management
OPM 460 Supply Chain Management

CONCENTRATION IN HUMAN RESOURCE MANAGEMENT

This concentration prepares students for careers in various areas of human resource management, including workforce planning and recruitment, compensation and benefits management, employee training and development, and labor relations. The effective management of people has become critical to business success, and companies of all types are looking for managers who can recruit, manage, and retain top talent. The courses in this concentration will give students state of the art knowledge in talent management, human capital development, job design, and managing a diverse workforce. Courses include:

In addition to the core business curriculum, students in the human resource management concentration are required to take the following courses:

EC 315 Women, Men, and Work
MGT 451 Senior Project
MHR 316 Introduction to Human Resource Management
MHR 325 Managing Diversity in the Workplace
MHR 465 International Human Resource Management
OPM 445 Management of Technology, Productivity, & Change
International SBA elective

CONCENTRATION IN MARKETING MANAGEMENT

This concentration prepares students for careers in sales, advertising, promotions, public relations, distribution, and other marketing fields. Businesses are becoming more competitive and consumers are demanding better value for their money. In this type of environment, marketing becomes the key to business growth and success. Marketing jobs are highly coveted and greatly valued in all types of companies, and marketing managers are prime candidates for advancement to the highest ranks. Courses in this concentration will expose students to state of the art concepts in marketing and help them develop the skills needed for a job in this exciting field.

In addition the core business curriculum, students in the marketing concentration are required to take the following courses:

Required Courses:

MGT 451 Senior Project
OPM 445 Management of Technology, Productivity, & Change
International SBA elective

Elective Courses—Select any 4 of the following courses:

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

CONCENTRATION IN OPERATIONS MANAGEMENT

Business competitiveness is highly driven by effective management of operations. This concentration is designed for students interested in management careers in service and manufacturing operations.

In addition the core business curriculum, students in the operations management (OPM) concentration are required to take the following courses:

Required Courses:

MGT 451 Senior Project
OPM 445 Management of Technology, Productivity, & Change
OPM 460 Supply Chain Management
International SBA elective

Elective Courses—Select any 3 of the following courses:

MGT 409 Senior Project
MIS 430 ERP Systems & Workflow Management
MKT 409 Customer Relationship Management
OPM 360 Project Management
OPM 375 Global Operations Management
OPM 380 Introduction to Management Science

CONCENTRATION IN SPORT MANAGEMENT

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 business curriculum, students in the sport management concentration are required to take the following courses:

- BLAW 280 Sports & the Law
- COMS 130 Mass Media & Society
- MHR 316 Intro. to Human Res. Mgmt.
- MKT 320 Event Planning & Sport Marketing
- OPM 445 Mgmt. of Tech., Productivity, & Change
- PE 206 Org. & Adm. of Athletic Coaching **or**
- PE 215 Med. Aspects of Athletic Coaching
- PSY 105 Introduction to Psychology
- SMGT 300 Sport Mgmt. & Admin.
- SMGT 340 Sport Sales & Marketing
- SMGT 451 Senior Project
- SMGT Elective

MINORS IN MANAGEMENT

Students pursuing a major in the School of Business Administration may earn a minor in human resource management or marketing by completing three 300-level or above elective courses in the appropriate field. To earn a minor in MIS, students must take MIS 358 and two 300-level or above MIS courses. To earn a minor in operations management, students must complete OPM 460 and two of the following courses: OPM 360, OPM 375, OPM 380, MIS 430, MKT 409, or MGT 409. Students may earn a minor in sport management by completing BLAW 280 and three of the following courses: SMGT 300, SMGT 340, SMGT 410, SMGT 415, MKT 320, and ACCT 401.

CURRICULUM—MANAGEMENT:

MHR, MKT, OPM, GEN. MGT^{††}

Credits

| | |
|--|-------------|
| Freshman Fall | 16.5 |
| ANTH 105 Cultural Anthropology | 3 |
| ENGL 101 Composition & Critical Thought | 3 |
| MATH 117 Elementary Functions* | 3 |
| MGT 100 Understanding & Working in Organizations | 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 |
| MGT 310 Leadership | 3 |
| OPM 352 Operations Management** | 3 |
| PHIL 352 Business Ethics | 3 |
| EC Elective** | 3 |
| MGT 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 |

*Qualified students are urged to substitute MATH 141, 142.

**Course may be taken in either the fall or spring semester. Students should select the course in his or her concentration in the first semester of the junior year.

[†]Management majors must complete two humanities electives, two social science electives (one at the 200+ level), two science/math electives, and three free electives.

^{††}Excluding sport management.

**CURRICULUM—MANAGEMENT:
SPORT MANAGEMENT**

Credits

| | |
|--|-------------|
| Freshman Fall | 16.5 |
| ENGL 101 Composition & Critical Thought | 3 |
| MATH 117 Elementary Functions* | 3 |
| MGT 100 Understanding & Working in Organizations | 3 |
| MIS 180 Computing & Spreadsheets** | 1 |
| PSY 105 Introduction to Psychology | 3 |
| Physical Education Elective | 0.5 |
| 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 |
| EC 202 Principles of Microeconomics** | 3 |
| MIS 290 Management Information Systems** | 3 |
| QA 252 Intermediate Statistical Analysis | 3 |
| SMGT 300 Sport Management & Administration | 3 |
| Junior Fall | 15 |
| BLAW 280 Sports & the Law | 3 |
| FIN 303 Financial Management** | 3 |
| MKT 300 Marketing Principles** | 3 |
| EC Elective** | 3 |
| Elective† | 3 |
| Junior Spring | 15 |
| MGT 310 Leadership | 3 |
| MGT 365 International Business** | 3 |
| OPM 352 Operations Management** | 3 |
| PHIL 352 Business Ethics | 3 |
| SSCI Elective (upper level) | 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 |
| SMGT 451 Seminar in Sport Management | 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 |

*Qualified students are urged to take MATH 141, 142.

**Course may be taken in either the fall or spring semester.

†Students in the sport management option must complete two humanities electives, two social science electives (one at the 200+ level), two science/math electives, and one free elective.

COOPERATIVE (CO-OP) PROGRAMS

The school's cooperative education (co-op) programs in business offer qualified students an optimum combination of theory and practice within a four-year time span. The opportunity for practical experience 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 professional characteristics meeting their potential employers' recruiting standards, and must perform satisfactorily in their working positions. Although Career Services 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 Credits

| | |
|--|-------------|
| Freshman Fall | 16.5 |
| ANTH 105 and 1 Elective; or 2 Electives [†] | 6 |
| BLAW150 Legal & Ethical Environment Business** | 3 |
| ENGL 101 Composition & Critical Thought | 3 |
| MATH 117 Elementary Functions* | 3 |
| MIS 180 Computing & Spreadsheets** | 1 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 15.5 |
| ACCT 204 Financial Accounting** | 3 |
| BUS 110 Introduction to Business Concepts ^{††} | 3 |
| ENGL 102 Advanced Composition & Literature | 3 |
| MATH 118 Elementary Calculus I* | 3 |
| Physical Education Elective | 0.5 |
| Elective [†] | 3 |
| Freshman Summer | 15 |
| ACCT 205 Managerial Accounting** | 3 |
| MGT 210 Foundations of Management or EC 202 | 3 |
| MIS 290 Management Information Systems | 3 |
| PRWR 215 Effective Communications | 3 |
| QA 251 Elementary Statistical Analysis | 3 |
| Sophomore Fall First work period (four months) | |
| Sophomore Spring | 16 |
| ACCT 308 Intermediate Accounting I** | 4 |
| ACCT 330 Accounting Information Systems ^{††} | 3 |
| EC 202 Principles of Microeconomics or MGT 210 | 3 |
| QA 252 Intermediate Statistical Analysis | 3 |
| Elective [†] | 3 |
| Sophomore Summer | 17 |
| ACCT 309 Intermediate Accounting II** | 4 |
| ACCT 405 Federal Income Tax | 4 |
| FIN 303 Financial Management | 3 |
| MKT 300 Marketing Principles | 3 |
| OPM 352 Operations Management or MGT 365 Int'l Business | 3 |
| Junior Fall | 16 |
| ACCT 402 Advanced Accounting | 4 |
| ACCT Elective | 3 |
| EC 201 Principles of Macroeconomics | 3 |
| MGT 310 Leadership | 3 |
| MGT 365 International Business or OPM 352 Operations Mgmt | 3 |
| Junior Spring and Summer Second Work Period (eight months) | |
| Senior Fall | 16 |
| ACCT 415 Auditing & Professional Responsibility ^{††} | 4 |
| EC 300 or 400 level Elective | 3 |
| MGT 452 Management Policy & Strategy ^{††} | 3 |
| PHIL 352 Business Ethics | 3 |
| Elective*** | 3 |
| Senior Spring | 15 |
| ACCT 451 Accounting Seminar ^{††} | 3 |
| 4 Electives ^{†,††} | 12 |
| TOTAL CREDITS | 127 |

*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.
 ***Students who do not complete a three month full-time co-op experience are required to complete ACCT 498 (3 credits) or MGT 451.
[†]Accounting majors must complete two humanities electives, two social science electives (one at the 200+ level), two science/math electives, 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 & 260) 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.

CURRICULUM—ECONOMICS: CO-OP 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 |
| Elective [†] | 3 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 15.5 |
| ACCT 204 Financial Accounting | 3 |
| BUS 110 Introduction to Business Concepts | 3 |
| ENGL 102 Advanced Composition & Literature | 3 |
| MATH 118 Elementary Calculus I* | 3 |
| Elective [†] | 3 |
| Physical Education Elective | 0.5 |
| Freshman Summer | 15 |
| ACCT 205 Managerial Accounting | 3 |
| EC 202 Principles of Microeconomics | 3 |
| QA 251 Elementary Statistical Analysis | 3 |
| MGT 210 Foundations of Management | 3 |
| PRWR 215 Effective Communication | 3 |
| Sophomore Fall First work period (four months) | |
| Sophomore Spring | 15 |
| EC 201 Principles of Macroeconomics** | 3 |
| MIS 290 Management Information Systems | 3 |
| QA 252 Intermediate Statistical Analysis | 3 |
| 2 Electives [†] | 6 |
| Sophomore Summer | 15 |
| FIN 303 Financial Management | 3 |
| OPM 352 Operations Management | 3 |
| MKT 300 Marketing Principles | 3 |
| 2 Electives [†] | 6 |
| Junior Fall | 15 |
| EC 312 Macroeconomic Theory | 3 |
| EC 408 International Economics or PHIL 352 Business Ethics | 3 |
| MGT 310 Leadership | 3 |
| MGT 365 International Business | 3 |
| EC Elective | 3 |
| Junior Spring and Summer Second work period (eight months) | |
| Senior Fall | 15 |
| EC 408 International Economics or PHIL 352 Business Ethics | 3 |
| MGT 452 Management Policy & Strategy | 3 |
| 2 EC Electives | 6 |
| Elective [†] | 3 |
| Senior Spring | 15 |
| EC 311 Microeconomic Theory | 3 |
| EC 401 Money & Financial Institutions | 3 |
| EC 451 Senior Project | 3 |
| 2 Electives [†] | 6 |
| TOTAL CREDITS | 122 |

*Qualified students are urged to substitute MATH 141, 142.
 **EC 201 or EC 202 may be offered in the summer or spring.
[†]Economics majors must complete two humanities electives, two social science electives (one at the 200+ level), two science/math electives, and three free electives.

**CURRICULUM—ECONOMICS/
FINANCIAL SERVICES: CO-OP** **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 |
| Elective† | 3 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 15.5 |
| ACCT 204 Financial Accounting | 3 |
| BUS 110 Introduction to Business Concepts* | 3 |
| ENGL 102 Advanced Composition & Literature | 3 |
| MATH 118 Elementary Calculus I | 3 |
| Elective† | 3 |
| Physical Education Elective | 0.5 |
| Freshman Summer | 15 |
| ACCT 205 Managerial Accounting | 3 |
| EC 202 Principles of Microeconomics | 3 |
| MGT 210 Foundations of Management | 3 |
| PRWR 215 Effective Communication | 3 |
| QA 251 Elementary Statistical Analysis | 3 |
| Sophomore Fall First work period (4 months) | |
| Sophomore Spring | 15 |
| EC 201 Principles of Macroeconomics** | 3 |
| MIS 290 Management Information Systems | 3 |
| QA 252 Intermediate Statistical Analysis | 3 |
| 2 Electives† | 6 |
| Sophomore Summer | 15 |
| FIN 303 Financial Management | 3 |
| MGT 365 International Business or Elective† | 3 |
| MKT 300 Marketing Principles* | 3 |
| OPM 352 Operations Management | 3 |
| Elective† | 3 |
| Junior Fall | 16 |
| ACCT 405 Federal Income Tax | 4 |
| EC 312 Macroeconomic Theory | 3 |
| EC 408 International Economics | 3 |
| FIN 305 Investments | 3 |
| MGT 310 Leadership | 3 |
| Junior Spring and Summer Second work period (8 months) | |
| Senior Fall | 15 |
| ACCT 408 Principles of Estate Planning | 3 |
| MGT 452 Management Policy & Strategy | 3 |
| PHIL 352 Business Ethics | 3 |
| 2 Electives† | 6 |
| Senior Spring | 15 |
| ACCT 409 Pension & Retirement Planning | 3 |
| EC 311 Microeconomic Theory | 3 |
| EC 401 Money & Financial Institutions | 3 |
| EC 453 Economic Seminar in Financial Services | 3 |
| FIN 320 Risk Management & Insurance Planning | 3 |
| TOTAL CREDITS | 123 |

*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—FINANCE CO-OP | Credits |
| Freshman Fall | 16.5 |
| ANTH 105 Cultural Anthropology | 3 |
| ENGL 101 Composition & Critical Thought | 3 |
| MATH 117 Elementary Functions* | 3 |
| MGT 100 Understanding & Working in Organizations | 3 |
| MIS 180 Computing & Spreadsheets | 1 |
| Elective† | 3 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 15.5 |
| ACCT 204 Financial Accounting | 3 |
| BLAW 150 Legal & Ethical Environment of Business | 3 |
| ENGL 102 Advanced Composition & Literature | 3 |
| MATH 118 Elementary Calculus I* | 3 |
| Elective† | 3 |
| Physical Education Elective | 0.5 |
| Freshman Summer | 15 |
| ACCT 205 Managerial Accounting | 3 |
| EC 202 Principles of Microeconomics** | 3 |
| MGT 210 Foundations of Management | 3 |
| PRWR 215 Effective Communication | 3 |
| QA 251 Elementary Statistical Analysis | 3 |
| Sophomore Fall First work period (4 months) | |
| Sophomore Spring | 15 |
| EC 201 Principles of Macroeconomics** | 3 |
| MIS 290 Management Information Systems | 3 |
| QA 252 Intermediate Statistical Analysis | 3 |
| 2 Electives† | 6 |
| Sophomore Summer | 15 |
| FIN 303 Financial Management | 3 |
| MKT 300 Marketing Principles* | 3 |
| OPM 352 Operations Management | 3 |
| 2 Electives† | 6 |
| Junior Fall | 15 |
| EC 312 Macroeconomic Theory | 3 |
| FIN 305 Investments | 3 |
| MGT 310 Leadership | 3 |
| MGT 365 International Business | 3 |
| PHIL 352 Business Ethics | 3 |
| Junior Spring and Summer Second work period (8 months) | |
| Senior Fall | 15 |
| FIN 423 International Finance | 3 |
| MGT 452 Management Policy & Strategy | 3 |
| 2 FIN Electives | 6 |
| FIN Internship | 3 |
| Senior Spring | 15 |
| ACCT 450 Financial Practices & Regulations | 3 |
| 2 FIN Electives | 6 |
| 2 Electives† | 6 |
| TOTAL CREDITS | 123 |

*Qualified students are urged to substitute MATH 141, 142.
 ** EC 201 or EC 202 may be offered in the summer or spring.
 †Finance majors must complete two humanities electives, two social science electives (one at the 200+ level), two science/math electives, and two free electives.

**CURRICULUM—FINANCE/FINANCIAL
PLANNING CO-OP Credits**

| | |
|---|-------------|
| Freshman Fall | 16.5 |
| ANTH 105 Cultural Anthropology | 3 |
| ENGL 101 Composition & Critical Thought | 3 |
| MATH 117 Elementary Functions | 3 |
| MGT 100 Understanding & Working in Organizations | 3 |
| MIS 180 Computing & Spreadsheets* | 1 |
| Elective† | 3 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 15.5 |
| ACCT 204 Financial Accounting | 3 |
| BLAW 150 Legal & Ethical Environment of Business* | 3 |
| ENGL 102 Advanced Composition & Literature | 3 |
| MATH 118 Elementary Calculus I | 3 |
| Elective† | 3 |
| Physical Education Elective | 0.5 |
| Freshman Summer | 15 |
| ACCT 205 Managerial Accounting | 3 |
| EC 202 Principles of Microeconomics** | 3 |
| MGT 210 Foundations of Management | 3 |
| PRWR 215 Effective Communication | 3 |
| QA 251 Elementary Statistical Analysis | 3 |
| Sophomore Fall First work period (4 months) | |
| Sophomore Spring | 15 |
| EC 201 Principles of Macroeconomics** | 3 |
| MIS 290 Management Information Systems | 3 |
| QA 252 Intermediate Statistical Analysis | 3 |
| 2 Electives† | 6 |
| Sophomore Summer | 15 |
| FIN 303 Financial Management | 3 |
| MGT 365 International Business or Elective† | 3 |
| MKT 300 Marketing Principles* | 3 |
| OPM 352 Operations Management | 3 |
| Elective† | 3 |
| Junior Fall | 15 |
| ACCT 405 Federal Income Tax | 4 |
| EC 312 Macroeconomic Theory | 3 |
| FIN 305 Investments | 3 |
| MGT 310 Leadership | 3 |
| Elective† | 3 |
| Junior Spring and Summer Second work period (8 months) | |
| Senior Fall | 15 |
| ACCT 408 Principles of Estate Planning | 3 |
| MGT 452 Management Policy & Strategy | 3 |
| PHIL 352 Business Ethics | 3 |
| FIN Elective | 3 |
| Internship | 3 |
| Senior Spring | 15 |
| ACCT 409 Pension & Retirement Planning | 3 |
| FIN 320 Risk Management & Insurance Planning | 3 |
| FIN 450 Financial Practices & Regulations | 3 |
| FIN 453 Capstone in Financial Planning | 3 |
| FIN Elective | 3 |
| TOTAL CREDITS | 123 |

*Course may be taken in the fall or spring semester.
 ** EC 201 or EC 202 may be offered in the summer or spring.
 †Finance/financial planning majors must complete two humanities electives, two social science electives (one at the 200+ level), and two science/math electives.

CURRICULUM—INTERNAT'L BUSINESS: CO-OP Credits

| | |
|---|-------------|
| Freshman Fall | 16.5 |
| ANTH 105 Cultural Anthropology | 3 |
| ENGL 101 Composition & Critical Thought | 3 |
| MATH 117 Elementary Functions* | 3 |
| MGT 100 Understanding & Working in Organizations | 3 |
| MIS 180 Computing & Spreadsheets** | 1 |
| Modern Language Elective | 3 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 15.5 |
| ACCT 204 Financial Accounting | 3 |
| BLAW 150 Legal & Ethical Environment of Business | 3 |
| ENGL 102 Advanced Composition & Literature | 3 |
| MATH 118 Elementary Calculus I* | 3 |
| Modern Language Elective | 3 |
| Physical Education Elective | 0.5 |
| Freshman Summer | 15 |
| ACCT 205 Managerial Accounting | 3 |
| EC 202 Principles of Microeconomics | 3 |
| MGT 210 Foundations of Management | 3 |
| PRWR 215 Effective Communication | 3 |
| QA 251 Elementary Statistical Analysis | 3 |
| Sophomore Fall First work period (4 months) | |
| Sophomore Spring | 15 |
| POLS 102 Foreign Government & Politics | 3 |
| POLS 222 American Foreign Policy | 3 |
| MIS 290 MGT Information Systems | 3 |
| QA 252 Intermediate Statistical Analysis | 3 |
| Elective† | 3 |
| Sophomore Summer | 15 |
| FIN 303 Financial Management | 3 |
| MGT 365 International Business | 3 |
| MKT 300 Marketing Principles** | 3 |
| OPM 352 Operations Management | 3 |
| Elective† | 3 |
| Junior Fall | 15 |
| EC 201 Principles of Macroeconomics | 3 |
| MGT 310 Leadership | 3 |
| POLS 221 Introduction to International Relations | 3 |
| PHIL 352 Business Ethics | 3 |
| Elective† | 3 |
| Junior Spring and Summer Second work period (8 months) | |
| Senior Fall | 15 |
| EC 408 International Economics | 3 |
| FIN 423 International Finance | 3 |
| MGT 451 Management Seminar** | 3 |
| MGT Elective | 3 |
| MHR 465 International Human Resource Mgt | 3 |
| Senior Spring | 15 |
| MGT 452 Management Strategy & Policy** | 3 |
| MKT 410 International Marketing | 3 |
| OPM 445 Management of Tech., Prod., & Change** | 3 |
| 2 Electives† | 6 |
| TOTAL CREDITS | 122 |

*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 three free electives.

CURRICULUM—MANAGEMENT: CO-OP Credits

| | |
|---|-------------|
| Freshman Fall | 16.5 |
| ANTH 105 Cultural Anthropology | 3 |
| ENGL 101 Composition & Critical Thought | 3 |
| MATH 117 Elementary Functions* | 3 |
| MGT 100 Understanding & Working in Organizations | 3 |
| MIS 180 Computing and Spreadsheets** | 1 |
| Elective† | 3 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 15.5 |
| ACCT 204 Financial Accounting | 3 |
| BLAW 150 Legal and Ethical Env. of Business | 3 |
| ENGL 102 Advanced Composition & Literature | 3 |
| MATH 118 Elementary Calculus I* | 3 |
| Elective† | 3 |
| Physical Education Elective | 0.5 |
| Freshman Summer | 15 |
| EC 202 Principles of Microeconomics | 3 |
| MGT 210 Foundations of Management | 3 |
| MIS 290 Mgt Information Systems | 3 |
| PRWR 215 Effective Communication | 3 |
| QA 251 Elementary Statistical Analysis | 3 |
| Sophomore Fall First work period (4 months) | |
| Sophomore Spring | 15 |
| ACCT 205 Managerial Accounting | 3 |
| EC 201 Principles of Macroeconomics | 3 |
| QA 252 Intermediate Statistical Analysis | 3 |
| 2 Electives† | 6 |
| Sophomore Summer | 15 |
| FIN 303 Financial Management | 3 |
| MGT 365 International Business | 3 |
| MKT 300 Marketing Principles** | 3 |
| OPM 352 Operations Management | 3 |
| Elective† | 3 |
| Junior Fall | 15 |
| MGT 310 Leadership | 3 |
| PHIL 352 Business Ethics | 3 |
| 2 MGT Electives | 6 |
| Elective† | 3 |
| Junior Spring and Summer Second work period (8 months) | |
| Senior Fall | 15 |
| MGT 451 Management Seminar | 3 |
| OPM 445 Management of Tech., Prod., & Change** | 3 |
| MGT Elective | 3 |
| EC Elective | 3 |
| Elective† | 3 |
| Senior Spring | 15 |
| MGT 452 Management Policy & Strategy | 3 |
| MGT Elective | 3 |
| International SBA Elective | 3 |
| 2 Electives† | 6 |
| TOTAL CREDITS | 122 |

*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, and three free electives.

BUSINESS ADMINISTRATION 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 business process innovation, 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 Division of Continuing Studies 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.

Students outside the School of Business Administration 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 School of Business Administration (residency requirement).

MINOR IN GENERAL BUSINESS

REQUIREMENTS: BUSINESS MINOR Credits

| | |
|--|---|
| <i>Prerequisites are in parentheses.</i> | |
| EC 201/202 Principles of Micro/Macroeconomics | 6 |
| MATH 117 Elementary Functions, or appropriate equivalent ... | 3 |
| Eight Required SBA Courses | |
| ACCT 204–205 Financial/Managerial Accounting | 6 |
| QA 251 Elementary Statistical Analysis* | 3 |
| FIN 303 Financial Management (ACCT 205, junior standing) .. | 3 |
| MGT 210 Foundations of Management | 3 |
| MIS 180 Computing & Spreadsheets | 1 |
| MKT 300 Marketing Principles (EC 202, junior standing) | 3 |
| One course offered by School of Business Administration | |
| 200-level or above with appropriate prerequisites | 3 |

TOTAL CREDITS 31

*Completion of PSY 381 will waive QA 251.
 Note: 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 minoring 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 Credits

Prerequisites are in parentheses.

Required SBA Courses

| | |
|---|---|
| ACCT 204 Financial Accounting | 3 |
| ACCT 205 Managerial Accounting (sophomore standing) | 3 |
| EC 201 Macroeconomics or EC 202 Microeconomics | 3 |
| FIN 303 Corporate Finance (ACCT 205, junior standing) | 3 |

Elective Courses

Three upper (300 or 400) level accounting electives (see course requirements) 9

Recommended Courses:

| | |
|--|--|
| ACCT 304 Case Studies in Financial Reporting & Analysis | |
| ACCT 306 Taxation & Accounting for Small & Family Owned Businesses | |
| ACCT 307 Fraud Examination | |
| ACCT 314 Advanced Managerial Accounting | |
| ACCT 330 Accounting Information Systems or | |
| ACCT 417 Internal Auditing | |
| ACCT 400 Taxation for the Business Manager or | |
| ACCT 405 Federal Income Taxation (4 credits) | |

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 Credits

| | |
|--|----|
| EC 201/202 Principles of Micro/Macroeconomics | 6 |
| MATH 117 Elementary Functions, or appropriate equivalent | 3 |
| Four 300-level and above economics electives | 12 |

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.

REQUIREMENTS: FINANCE MINOR Credits

Prerequisites are in parentheses.

Required SBA Courses

| | |
|--|---|
| ACCT 204 Financial Accounting | 3 |
| ACCT 205 Managerial Accounting | 3 |
| FIN 303 Financial Management (ACCT 205, junior standing) | 3 |

Elective Courses

Choose one course: 3

- EC 201 Principles of Macroeconomics*
- MGT 210 Foundations of Management

Choose three courses: 9

- FIN 305 Investments (FIN 303)
- FIN 307 Capital Budgeting (FIN 303)
- FIN 313 Entrepreneurial Finance (FIN 303)
- FIN 320 Risk Management & Insurance (FIN 303)
- FIN 406 Portfolio Theory & Management (FIN 303)
- FIN 408 Investing in Mutual Funds (FIN 303)
- FIN 423 International Financial Management (FIN 303)

TOTAL CREDITS **21**

**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 gives students the ability to examine contemporary challenges in human resources. It provides a comprehensive exposure 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 one's professional career and increase knowledge and skills.

Why consider a minor in MHR? 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 help students apply their degree in a variety of fields.

REQUIREMENTS: HUMAN RESOURCE MANAGEMENT MINOR Credits

Prerequisites are in parentheses.

Required SBA Courses

| | |
|--|---|
| MGT 210 Foundations of Management | 3 |
| MHR 316 Intro. to Human Resource Mgt. (MGT 210) | 3 |
| MIS 290 Management Information Systems (MIS 180) | 3 |

Elective Courses

Choose one course: 3

- BLAW 150 Legal & Ethical Environment of Business
- EC 202 Principles of Microeconomics*

Choose three courses: 9

- EC 315 Women, Men, & Work (EC 202)
- MHR 325 Diversity in the Workplace (MGT 210)
- MHR 420 Organizational Behavior (MGT 210)
- MHR 465 International Hum. Res. Mgt. (MGT 210)

TOTAL CREDITS **21**

**If not taken as part of a minor, it may be taken as a social science elective.*

MINOR IN INTERNATIONAL BUSINESS

A minor in international business helps students understand and appreciate global business, as well as the motivations for international business, and international risks and opportunities. It will add a very competitive set of skills to students' résumés.

REQUIREMENTS:

INTERNATIONAL BUSINESS MINOR Credits

Prerequisites are in parentheses.

Required SBA Courses

| | |
|--|---|
| MGT 210 Foundations of Management | 3 |
| MGT 365 International Business (ANTH 105, MGT 210) | 3 |

Elective Courses

| | |
|---|---|
| Choose three courses: | 9 |
| ACCT 204 Financial Accounting | |
| ACCT 205 Managerial Accounting* | |
| EC 201 Principles of Macroeconomics** | |
| EC 202 Principles of Microeconomics** | |
| FIN 303 Financial Management (ACCT 205, junior standing) | |
| MKT 300 Marketing Principles (EC 202, junior standing) | |
| Choose two courses: | 6 |
| ACCT 404 International Accounting & Reporting (ACCT 204, 205) | |
| EC 408 International Economics (EC 201, 202) | |
| FIN 423 International Financial Management (FIN 303) | |
| MHR 465 International Human Resource Mgt. (MGT 210) | |
| MKT 410 International Marketing (MKT 300) | |
| OPM 375 Global Operations Mgmt. (MGT 365, OPM 352) | |

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 MANAGEMENT

A minor in management gives students a broad-based knowledge in the functional areas of business. It provides students with the skills to advance into management ranks in their chosen fields. The choice of electives helps students attain an adequate level of exposure in the areas of finance, human resource management, general management, management information systems, marketing, and sport management.

REQUIREMENTS: MANAGEMENT MINOR Credits

Prerequisites are in parentheses.

Required SBA Courses

| | |
|-----------------------------------|---|
| MGT 210 Foundations of Management | 3 |
|-----------------------------------|---|

Elective Courses

| | |
|--|----|
| Choose four courses: | 12 |
| ACCT 204 Financial Accounting | |
| ACCT 205 Managerial Accounting* | |
| EC 201 Principles of Macroeconomics** or | |
| EC 202 Principles of Microeconomics** | |
| FIN 303 Financial Management (ACCT 205, junior standing) | |
| OPM 352 Operations Management (QA 252, junior standing) | |
| MHR 316 Intro. to Human Resource Mgt. (MGT 210) | |
| MIS 290 Mgt. Information Systems (MIS 180) | |
| MKT 300 Marketing Principles (EC 202, junior standing) | |
| Choose two courses (300 level or higher) from: | 6 |
| Finance, human resource management, | |
| management, management information systems, | |
| marketing, and sport management areas. | |

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 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 |
| MIS 358 Database Management Systems (MIS 290) or | |
| CSCI 434 Database Systems (CSCI 248 or 258) | 3 |

Elective Courses

| | |
|--|---|
| Choose one course: | 3 |
| FIN 303 Financial Management (ACCT 205, junior standing) | |
| MGT 210 Foundations of Management | |
| Choose two courses:** | 6 |
| MIS 329 Systems Analysis & Design (MIS 290) | |
| 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 Decision Support 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.

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 (QA 251, junior standing) | 3 |
| OPM 460 Supply Chain Mgmt. (OPM 352)** | 3 |
| QA 251 Elementary Statistical Analysis (MATH 117) | 3 |
| QA 252 Intermediate Statistical Analysis (QA 251) | 3 |

Elective Courses

| | |
|---|---|
| Choose two courses: | 6 |
| MGT 365 International Business (ANTH 105, MGT 210, junior standing) | |
| MIS 430 ERP** (MIS 290) | |
| MKT 409 Customer Relationship** (MKT 300, EC 201 & 202) | |
| OPM 375 Global Operations Management (OPM 352, MGT 365) | |
| OPM 380 Intro. to Management Science (OPM 352) | |
| OPM 445 Mgmt. of Tech., Prod., & Change (OPM 352) | |

TOTAL CREDITS 21

*Assumes a basic knowledge of spreadsheets. Otherwise, students will be required to take MIS 180.

**Upon graduation, students who have completed three SAP courses are eligible for a SAP Undergraduate Recognition Award.

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 |

Elective Courses

| | |
|---|---|
| Choose one course: | 3 |
| PRWR 215 Effective Communication | |
| QA 252 Intermediate Statistical Analysis (QA 251) | |
| 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 (EC 201, 202; MKT 300) | |
| MKT 405 Sales Management (QA 252, MKT 300) | |
| MKT 406 Marketing Research (EC 201, 202; QA 252, MKT 300) | |
| MKT 409 Customer Relationship Management (EC 201, 202; MKT 300) | |
| MKT 410 International Marketing (EC 201, 202; 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 business of sports has become a major part of both our local economy and the national economy. A minor in sport management prepares students for a career in professional, intercollegiate, and interscholastic sports, and in the various industries that serve them. Courses in this program enable students to develop skills in the sales and marketing of sports programs and products, as well as the planning and management of sports events and recreation facilities. Students will also develop an understanding of the economics and legal aspects of sports.

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 |
| MGT 210 Foundations of Management | 3 |
| MKT 300 Marketing Principles (EC 202, junior standing) | 3 |

Elective Courses

| | |
|--|---|
| Choose three courses: | 9 |
| ACCT 401 (ACCT 204, 205) | |
| MKT 320 Event Planning & Sport Marketing (MKT 300) | |
| SMGT 300 Sport Mgmt. & Admin. (MGT 210) | |
| SMGT 340 Sport Sales and Marketing (MKT 300) | |
| SMGT 410 Economics of Sports (EC 202) | |
| SMGT 415 The Athlete & the Fan (MGT 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 Education, Innovation, and Continuing Studies

The School of Education, Innovation, and Continuing Studies houses the Division of Education and the Division of Continuing Studies. The school serves students pursuing associate's, bachelor's, master's, and doctoral degrees. It also serves as the home for the Osher Lifelong Learning Institute and for various certificate and continuing education programs.

MISSION STATEMENT

The School of Education, Innovation, and Continuing Studies (SEICS) 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.

DIVISION OF EDUCATION

The State Board of Education adopted changes specific to elementary education programs. 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 Division of Education in the School of Education, Innovation, and Continuing Studies prepares teacher candidates to become "knowledgeable and reflective practitioners." To reach this goal, the Division of Education has adopted the Interstate New Teacher Assessment and Support Consortium (INTASC) Principles. Teacher candidates are required to develop an electronic portfolio that contains artifacts that demonstrate the following achievements:

Standard 1: Learner Development. The teacher understands how learners grow and develop, recognizing that patterns of learning and development vary individually within and across the cognitive, linguistic, social, emotional, and physical areas, and designs and implements developmentally appropriate and challenging learning experiences.

Standard 2: Learning Differences. The teacher uses understanding of individual differences and diverse cultures and communities to ensure inclusive learning environments that enable each learner to meet high standards.

Standard 3: Learning Environments. The teacher works with others to create environments that support individual and collaborative learning and that encourage positive social interaction, active engagement in learning, and self motivation.

Standard 4: Content Knowledge. The teacher understands the central concepts, tools of inquiry, and structures of the discipline(s) he or she teaches and creates learning experiences that make the discipline accessible and meaningful for learners to assure mastery of the content.

Standard 5: Application of Content. The teacher understands how to connect concepts and use differing perspectives to engage learners in critical thinking, creativity, and collaborative problem solving related to authentic local and global issues.

Standard 6: Assessment. The teacher understands and uses multiple methods of assessment to engage learners in their own growth, to monitor learner progress, and to guide the teacher's and learner's decision making.

Standard 7: Planning for Instruction. The teacher plans instruction that supports every student in meeting rigorous learning goals

by drawing upon knowledge of content areas, curriculum, cross-disciplinary skills, and pedagogy, as well as knowledge of learners and the community context.

Standard 8: Instructional Strategies. The teacher understands and uses a variety of instructional strategies to encourage learners to develop a deep understanding of content areas and their connections and to build skills to apply knowledge in meaningful ways.

Standard 9: Professional Learning and Ethical Practice. The teacher engages in ongoing professional learning and uses evidence to continually evaluate his or her practice, particularly the effects of the teacher's choices and actions on others (learners, families, other professionals, and the community), and adapts practice to meet the needs of each learner.

Standard 10: Leadership and Collaboration. The teacher seeks appropriate leadership roles and opportunities to take responsibility for student learning, to collaborate with learners, families, colleagues, other school professionals, and community members to ensure learner growth and to advance the profession.

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" and "Innovative Practice," students will prepare to meet the demands of today's diverse, inclusive, and technology-driven schools.

ELEMENTARY EDUCATION: THE MIDDLE YEARS

A student 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 Division of Education and through the division's website at www.widener.edu 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 student teachers 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 required to be recommended for certification upon completing the program in PA).
- Passing scores on the Praxis I, Pre-Professional Skills Test for Reading, Writing, and Mathematics.
- Two favorable faculty recommendations.
- A “C” 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 teach 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 they are so integral to the certification program, 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.

Prior to engaging in any field experience, students must obtain three criminal background clearances as mandated by the Pennsylvania Department of Education. Namely, these clearances are: the Pennsylvania State Police Request for Criminal Records Check (Act 34), the Child Abuse History Clearance (Act 151), and the Federal Criminal History Record (FBI Fingerprinting—Act 114). Clearances must be less than one year old. In some cases, districts may require more recent clearances. Students who remain continuously enrolled in the teacher education program will not need to renew clearances until they graduate or change

colleges. Transfer students will need new clearances at the time of their admission to Widener. Once obtained, students must present the originals to the Office of Certification for inspection. At which time, a copy will be made and maintained on file in that office. Each clearance has its own cost and processing turnaround time, so students should carefully plan ahead to obtain them. Otherwise, students will not be able to fully participate in the course, which will likely impact the grade earned for the course. Each year, students in teacher certification must complete an arrest and conviction form pursuant to 24 PS 1-111. These forms will be kept in the Office of Certification. Questions about criminal background clearances may be directed to the Office of Certification at 610-499-4373.

Special Note: The Division of 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 blouse 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 Division of Education website at www.widener.edu 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 certification concerning this matter. The field experiences required of Widener students are coordinated by the director of 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.

LAB PRESCHOOL

The Division of 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 NAEYC (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 certification about possible alternatives.

A student cannot participate in student teaching without the approval of both the director of student teaching/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.

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 Division of 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, 1306, and 1307.

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 PECT or Praxis Series of tests as required by the Pennsylvania Department of Education.
- Be approved by the director of student teachers and appropriate faculty members.

In the elementary education programs (both PK–4 and 4–8), there is the possibility for high achieving students to earn up to 15 credits toward their graduate degree during their undergraduate enrollment. To qualify for the accelerated program, students must apply at the end of the fall semester of their junior year, have a 3.5 GPA, maintain the GPA, and have two letters of recommendation. For more information, contact Dr. Nadine McHenry at ncmchenry@mail.widener.edu.

GRADUATE PROGRAMS

Programs of study are offered that lead to the master of education and doctor of education degrees. 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.
- 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* Credits

| | |
|---|-------------|
| 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.

| | |
|--|-------------|
| Freshman Spring | 15.5 |
| ED/PSY 202 Child 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.

Portfolio Requirement: Transition Point I

| | |
|---|-------------|
| 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 |

[†]For PDE literature requirement: ENGL 133, 134, 135, 146, 165, 167, 176, 335–338, 345–347, 356, 357, 359–363, 365–369, 374, 375.

Note: 20 hours of field experience are required in this semester. Students should apply for teacher candidacy. Portfolio requirement—transition point II.

| | |
|---|-------------|
| 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 Special Education Processes & Procedures, Screening, Assessment, IEP Development, & Evaluation ... | 3 |
| History Elective | 3 |
| Elective | 3 |

Note: 30 hours of field experience are required in this semester.

| | |
|--|-------------|
| 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 Intensive Reading, Writing, & Mathematics Intervention Approaches | 3 |
| EC 201 Microeconomics, EC 202 Macroeconomics, or Government & Politics Elective | 3 |
| <i>Note: 40 hours of field experience are required in this semester. Apply for student teaching.</i> | |

| | |
|--|-------------|
| 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 |
| <i>Note: 50 hours of field experience are required in this semester.</i> | |

| | |
|--|-------------|
| 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 |
| <i>Note: 30 hours of field experience are required in this semester. Portfolio requirement—transition point III.</i> | |

| | |
|---|-----------|
| Senior Spring | 15 |
| ED 1405 Collaboration & Communication | 3 |
| ED 1410 Student Teaching | 12 |
| <i>Note: Portfolio requirement—transition point IV.</i> | |

TOTAL CREDITS **134**

*Students must have current criminal record checks, FBI clearances, and child abuse clearances.

**CURRICULUM—ELEMENTARY EDUCATION:
THE MIDDLE YEARS, LANGUAGE ARTS*** **Credits**

| | |
|--|-------------|
| 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 |
| <i>Note: 20 hours of field experience are required in this semester.</i> | |

| | |
|--|-------------|
| 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 |
| <i>Note: 35 hours of field experience are required in this semester.</i> | |

| | |
|---|-------------|
| Sophomore Fall | 15.0 |
| Math 116 The Nature of Mathematics | 3 |
| ED 1221 Implementing the Middle School Curriculum | 3 |
| ENGL 131 or 133 | 3 |
| CHEM 100 Chemistry & Everyday Life | 3 |
| English Elective** | 3 |
| <i>Note: 20 hours of field experience are required in this semester. Students should apply for teacher candidacy. Portfolio requirement— transition point II.</i> | |

| | |
|--|-------------|
| Sophomore Spring | 16.0 |
| ED/PSY 250 Effective Instructional Practices | 3 |
| EC 201 Microeconomics or EC 202 Macroeconomics | 3 |
| ED 1222 Adolescent Literature | 3 |
| CHEM 111 Implications of Chemistry Lab | 1 |
| ENGL 132 or 134 | 3 |
| Government & Politics Elective | 3 |
| <i>Note: 30 hours of field experience are required in this semester.</i> | |

| | |
|--|-------------|
| Junior Fall | 16.0 |
| ED 1321 Instruction & Assessment—Language Arts | 3 |
| ED 1326 Classroom Management | 3 |
| CRWR 151 The Writing Life | 3 |
| ENVR 171 Principles of Environmental Science | 3 |
| ENVR 173 Investigating Environmental Science | 1 |
| English Elective** | 3 |
| <i>Note: 40 hours of field experience are required in this semester. Apply for student teaching.</i> | |

| | |
|--|-------------|
| Junior Spring | 15.0 |
| ED 1322 Instruction & Assessment—Math | 3 |
| ED 1323 Instruction & Assessment—Social Studies | 3 |
| ED 1325 Advanced Assessment in Middle School | 3 |
| ENGL 301 Methods of Literary Study | 3 |
| English Elective** | 3 |
| <i>Note: 50 hours of field experience are required in this semester.</i> | |

| | |
|--|-------------|
| Senior Fall | 13.5 |
| MATH 114 Basic Concepts of Probability & Statistics | 3 |
| ED 1424 Instruction & Assessment—Science | 3 |
| ED 1422 English Language Learners in the Middle School . . . | 3 |
| SSCI M 906 Geography | 1.5 |
| English Elective** | 3 |
| <i>Note: 30 hours of field experience are required in this semester. Portfolio requirement—transition point III.</i> | |

| | |
|---|-----------|
| Senior Spring | 18 |
| ED 1411 Student Teaching | 12 |
| ED 1421 Literacy/Disabilities | 3 |
| ED 1423 Collaboration & Inclusion in MS | 3 |
| <i>Note: Portfolio requirement—transition point IV.</i> | |

TOTAL CREDITS **125.5**

*Students must have current criminal record checks, FBI clearances, and child abuse clearances.

**When selecting English electives, students must choose one course from each category:

- Category A (British/American Lit. Pre-1800): ENGL 335–338, 345–347, 366
- Category B (British/American Lit. Post-1800): ENGL 356, 359, 360, 361, 367, 368, 374, 375
- Category C (Linguistics): ENGL 326–329
- Category D (Genre/Theme-Based/Creative Writing): ENGL 357, 362, 363, 365, 369; CRWR 305–308, 341

**CURRICULUM—ELEMENTARY EDUCATION:
THE MIDDLE YEARS, MATH*** **Credits**

| | |
|---|-------------|
| 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 | 15.0/16.0 |
| ED 1221 Implementing the Middle School Curriculum | 3 |
| CHEM 100 Chemistry & Everyday Life | 3 |
| MATH 116 The Nature of Mathematics | 3 |
| MATH 117 Elementary Functions or MATH 120 Precalculus .. | 3/4 |
| Elective | 3 |

Note: 20 hours of field experience are required in this semester.
Students should apply for teacher candidacy. Portfolio requirement—
transition point II.*

| | |
|--|-------------|
| Sophomore Spring | 16.0 |
| ED/PSY 250 Effective Instructional Practices | 3 |
| EC 201 Microeconomics or EC 202 Macroeconomics | 3 |
| MATH 118 Elementary Calculus I | 3 |
| CHEM 111 Implications of Chemistry Lab | 1 |
| ENGL 134 British Literature II | 3 |
| 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 171 Principles of Environmental Science | 3 |
| ENVR 173 Investigating Environmental Science | 1 |

Note: 40 hours of field experience are required in this semester.
Apply for student teaching.*

| | |
|---|-------------|
| Junior Spring | 15.0 |
| ED 1322 Instruction & Assessment—Math | 3 |
| ED 1323 Instruction & Assessment—Social Studies | 3 |
| ED 1325 Advanced Assessment in Middle School | 3 |
| MATH 152 Elementary Discrete Mathematics II. | 3 |
| MATH 218 Elementary Calculus | 3 |

*Note: 45 hours of field experience are required in this semester.**

| | |
|--|-------------|
| Senior Fall | 13.5 |
| MATH 114 Basic Concepts of Probability & Statistics | 3 |
| 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—transition point III.*

| | |
|---|-----------|
| Senior Spring | 18 |
| ED 1411 Student Teaching | 12 |
| ED 1421 Literacy/Disabilities | 3 |
| ED 1423 Collaboration & Inclusion in MS | 3 |

Note: Portfolio requirement—transition point IV.

TOTAL CREDITS **125.5**

**Students must have current criminal record checks, FBI clearances, and child abuse clearances.*

**CURRICULUM—ELEMENTARY EDUCATION:
THE MIDDLE YEARS, SCIENCE*** **Credits**

| | |
|---|-------------|
| 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 | 16.0 |
| MATH 118 Elementary Calculus | 3 |
| ED/PSY 213 Adolescent Psychology | 3 |
| ANTH 105 Cultural Anthropology | 3 |
| ENGL 102 Advanced Composition & Literature | 3 |
| CHEM 100/111 Chemistry & Everyday Life & Lab | 4 |

*Note: 15–20 hours of field experience are required in this semester.**

| | |
|--|-------------|
| Sophomore Fall | 17.0 |
| ED 1221 Implementing the Middle School Curriculum | 3 |
| BIOL 161 Biological Concepts | 4 |
| ENVR/ESSC 207 Oceanography | 4 |
| MATH 151 Elementary Discrete Math | 3 |
| HIST 121 or 122 Growth of American Civilization I or II** .. | 3 |

Note: 20 hours of field experience are required in this semester.
Students should apply for teacher candidacy. Portfolio requirement—
transition point II.*

| | |
|--|-------------|
| Sophomore Spring | 13.5 |
| ED/PSY 250 Effective Instructional Practices | 3 |
| EC 201 Microeconomics or EC 202 Macroeconomics | 3 |
| ENVR 201 Environmental Geology | 4 |
| Government & Politics Elective | 3 |
| 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 |
| ESSC 109/119 Introduction to Weather & Climate w/ Lab | 4 |

Note: 40 hours of field experience are required in this semester.
Apply for student teaching.*

| | |
|---|-------------|
| Junior Spring | 17.0 |
| 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 | 5 |

*Note: 45 hours of field experience are required in this semester.**

| | |
|--|-------------|
| Senior Fall | 13.5 |
| MATH 114 Basic Concepts of Probability & Statistics | 3 |
| 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—transition point III.*

| | |
|---|-----------|
| Senior Spring | 18 |
| ED 1411 Student Teaching | 12 |
| ED 1421 Literacy/Disabilities | 3 |
| ED 1423 Collaboration & Inclusion in MS | 3 |

Note: Portfolio requirement—transition point IV.

TOTAL CREDITS **127.5**

**Students must have current criminal record checks, FBI clearances, and child abuse clearances.*

***Choice of HIST 121 or 122 or any other history, including music or art history.*

**CURRICULUM—ELEMENTARY EDUCATION:
THE MIDDLE YEARS, SOCIAL STUDIES*** Credits

| | |
|--|-------------|
| 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.**

| | |
|--|-------------|
| Freshman Spring | 15.5 |
| MATH 112 Mathematical Ideas II | 3 |
| ED/PSY 213 Adolescent Psychology | 3 |
| HIST 100 Western Civilization I (Ancient World–1300) | 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 | 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 100 Chemistry & Everyday Life | 3 |
| SSCI M 906 Geography | 1.5 |

Note: 20 hours of field experience are required in this semester.
Students should apply for teacher candidacy. Portfolio requirement—transition point II.*

| | |
|--|-------------|
| Sophomore Spring | 16.0 |
| ED/PSY 250 Effective Instructional Practices | 3 |
| EC 201 Microeconomics or EC 202 Macroeconomics | 3 |
| HIST 121 Growth of American Civilization I** | 3 |
| CHEM 111 Implications of Chemistry Lab | 1 |
| POLS 101 American Government & Politics | 3 |
| SOC 105 Introduction to Sociology | 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 |
| HIST 343 European Diplomacy, 1871–1945 | 3 |
| HIST 356 America from Civil War to World Stage, 1861–1914 | 3 |
| ENVR 171 Principles of Environmental Science | 3 |
| ENVR 173 Investigating Environmental Science | 1 |

Note: 40 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 |
| 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 | 15.0 |
| MATH 114 Basic Concepts of Probability & Statistics | 3 |
| ED 1420 Geography in the MS | 3 |
| ED 1422 Teaching English Language Learners | 3 |
| ED 1424 Instruction & Assessment—Science | 3 |
| ENGL 326 Languages & Cultures | 3 |

Note: 30 hours of field experience are required in this semester.
Portfolio requirement—transition point III.*

| | |
|---|-------------|
| Senior Spring | 18.0 |
| ED 1411 Student Teaching | 12 |
| ED 1421 Literacy/Disabilities | 3 |
| ED 1423 Collaboration & Inclusion in MS | 3 |

Note: Portfolio requirement—transition point IV.

TOTAL CREDITS **131.5**

**Students must have current criminal record checks, FBI clearances, and child abuse clearances.*

***Choice of HIST 121 or 122 or any other history, including music or art history.*

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 61.

For secondary education certification in biology, chemistry, earth and space science, general science, and physics, see pages 63–66.

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 |
| Art History Elective | 3 |
| Science Elective | 4 |
| Physical Education Elective | 0.5 |

| | |
|---|-------------|
| Freshman Spring | 16.5 |
| ED 101 Introduction to Teaching | 3 |
| ED 102 Introduction to Educational Technology | 1 |
| ENGL 102 Advanced Composition & Literature | 3 |
| ENGL 132 World Literature II | 3 |
| Social Science Elective | 3 |
| Humanities Elective | 3 |
| Physical Education Elective | 0.5 |

| | |
|--|-----------|
| Sophomore Fall | 18 |
| ED/PSY 250 Effective Instructional Practices | 3 |
| PRWR 215 | 3 |
| English Major Courses | 6 |
| Humanities Elective | 3 |
| Math Elective | 3 |

| | |
|--|-----------|
| Sophomore Spring | 15 |
| ED/PSY 213 Adolescent Psychology | 3 |
| Math Elective | 3 |
| Psychology Elective | 3 |
| Science Elective | 3 |
| English Literature Elective** | 3 |

| | |
|--|------------|
| Junior Fall | 15 |
| ED 1422 Teaching English Language Learners | 3 |
| English Major Courses | 6 |
| English Elective in Creative Writing | 3 |
| Advanced Humanities Elective | 3 |
| Junior Spring | 18 |
| ENGL 327 English Linguistics | 3 |
| English Major Courses | 6 |
| Advanced Humanities Elective | 3 |
| Humanities Elective | 3 |
| Elective | 3 |
| Senior Fall | 15 |
| ASC 400 Values Seminar | 3 |
| ED 307 Methods—Secondary English | 3 |
| English Major Courses | 6 |
| Senior Seminar | 3 |
| Senior Spring | 18 |
| ED 1412 Student Teaching | 12 |
| ED 1421 Learners with Disabilities | 3 |
| ED 1423 Collaboration & Inclusion | 3 |
| Humanities Elective | 3 |
| TOTAL CREDITS | 129 |

*Students must have current criminal record checks, FBI clearances, and child abuse clearances.

**English literature elective must be selected from ENGL 355–362 (British literature) or ENGL 365–375 (American literature).

SOCIAL STUDIES EDUCATION

Anthropology, psychology, sociology, history, political science, 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**)

| | Credits |
|---|----------------|
| Freshman Fall | 15.5 |
| ENGL 101 Composition & Critical Thought | 3 |
| PSY 105 Introduction to Psychology | 3 |
| HIST Elective (100-level) | 3 |
| Humanities Elective | 3 |
| Science Elective | 3 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 16.5 |
| ED 101 Introduction to Teaching** | 3 |
| ED 102 Introduction to Educational Technology | 1 |
| ENGL 102 Advanced Composition & Literature | 3 |
| POLS 101 American Government & Politics | 3 |
| HIST 112 World Civilization Since 1500 | 3 |
| MATH Elective | 3 |
| Physical Education Elective | 0.5 |
| Sophomore Fall | 16 |
| ED/PSY 250 Effective Instructional Practices | 3 |
| HIST 100, 101, 102, 104, or 121 | 3 |
| SOC 105 Introduction to Sociology | 3 |
| Advanced HIST Course*** | 3 |
| Science Elective | 4 |
| Sophomore Spring | 15 |
| ED/PSY 213 Adolescent Psychology | 3 |
| HIST 401 Research Methods | 3 |
| HIST Elective (100-level) | 3 |
| Advanced HIST Course*** | 3 |
| Math Elective | 3 |
| Junior Fall | 15 |
| ANTH 105 Cultural Anthropology | 3 |
| ED 1422 Teaching English Language Learners | 3 |
| Advanced HIST Courses*** | 9 |
| Advanced Humanities Course | 3 |
| Junior Spring | 16.5 |
| SSCI M 906 World Geography | 1.5 |
| Advanced HIST Courses*** | 9 |
| Advanced Humanities Course | 3 |
| Humanities Elective | 3 |
| Senior Fall | 15 |
| ASC 400 Values Seminar | 3 |
| EC 201 Principles of Macroeconomics | 3 |
| ED 306 Methods—Secondary Social Studies/Citizenship | 3 |
| HIST 409 Senior Seminar | 3 |
| Advanced HIST Courses*** | 6 |
| Senior Spring | 18 |
| ED 1412 Student Teaching | 12 |
| ED 1421 Learners with Disabilities | 3 |
| ED 1423 Collaboration & Inclusion | 3 |
| TOTAL CREDITS | 127.5 |

*Students must have current criminal record checks, FBI clearances, and child abuse clearances.

**For other majors, students will meet with a faculty advisor to integrate social studies certification requirements with their majors.

***A minimum of 6 semester hours of advanced history will be in U.S. history, a minimum of 6 semester hours will be in non-U.S. history, and a minimum of 6 semester hours will be in European history.

MODERN LANGUAGE EDUCATION

The completion of all the requirements for a major in French or Spanish and the completion of all teacher education requirements 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 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 science, or math/science are possible. If students are considering a double major, it is important that they begin working early with their advisor to complete the requirements for both major programs 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.

CURRICULUM—

CERTIFICATION IN MODERN LANGUAGE* Credits

| | |
|---|-------------|
| Freshman Fall | 15.5 |
| ENGL 101 Composition & Critical Thought | 3 |
| FREN 101 or SPAN 101 Elementary French/Spanish I | 3 |
| PSY 105 Introduction to Psychology | 3 |
| Humanities Elective | 3 |
| Social Science Elective | 3 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 16.5 |
| ED 101 Introduction to Teaching | 3 |
| ED 102 Introduction to Educational Technology | 1 |
| ENGL 102 Advanced Composition & Literature | 3 |
| FREN 102 or SPAN 102 Elementary French/Spanish II | 3 |
| Humanities Elective | 3 |
| Science Elective | 3 |
| Physical Education Elective | 0.5 |
| Sophomore Fall | 16 |
| ED/PSY 250 Effective Instructional Practices | 3 |
| FREN 201 or SPAN 201 Intermediate French/Spanish I | 3 |
| Humanities Elective | 3 |
| Science Elective | 4 |
| Elective | 3 |
| Sophomore Spring | 15 |
| ED/PSY 213 Adolescent Psychology | 3 |
| FREN 202 or SPAN 202 Intermediate French/Spanish II | 3 |
| English Literature Elective [†] | 3 |
| Math Elective | 3 |
| Social Science Elective | 3 |
| Junior Fall | 15 |
| ED 1422 Teaching English Language Learners | 3 |
| FREN 301 or SPAN 301 Conversation & Composition I | 3 |
| FREN 304 or SPAN 304 Civilization & Culture | 3 |
| ML 330 Contrastive & Applied Linguistics | 3 |
| Advanced FREN or SPAN: Literature | 3 |
| Junior Spring | 18 |
| FREN 302 or SPAN 302 | 3 |
| Advanced FREN or SPAN: Literature | 3 |
| Advanced FREN or SPAN: Literature | 3 |
| Math Elective | 3 |
| Electives | 6 |
| Senior Fall | 15 |
| ED 310 Methods—Modern Language | 3 |
| FREN 305 or SPAN 305 Civilization & Culture | 3 |
| FREN 409 or SPAN 409 Senior Seminar | 3 |
| Advanced FREN or SPAN: Literature | 3 |
| ASC 400 Values Seminar | 3 |
| Senior Spring | 18 |
| ED 1412 Student Teaching | 12 |
| ED 1421 Learners with Disabilities | 3 |
| ED 1423 Collaboration & Inclusion | 3 |
| TOTAL CREDITS | 129 |

*Students must have current criminal record checks, FBI clearances, and child abuse clearances.

[†]English literature elective must be selected from ENGL 356–362 (British literature) or ENGL 365–375 (American literature).

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 biomedical, chemical, civil, electrical, and mechanical engineering are offered. Students may generally defer their decisions on a major until the beginning of their sophomore year. The chemical, civil, electrical, and mechanical engineering programs are accredited by the Accreditation Board for Engineering and Technology (ABET), 111 Market Place, Suite 1050, Baltimore, MD 21202-4012; telephone: 410-347-7700. The biomedical engineering program is expected to receive accreditation retroactively at the earliest opportunity allowed by the accreditation board upon graduation of the first cohort of students.

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 Services for summer internship opportunities.

150TH ANNIVERSARY

In 2012, the School of Engineering will celebrate the sesquicentennial anniversary of engineering education at Widener University. The first class of three engineers graduated from the Pennsylvania Military Academy with the degree of bachelor of civil engineering in 1867. To date, thousands of engineering students have completed their bachelor's and master's degrees in a variety of disciplines. They are today's leaders in their profession and communities around the nation and the world.

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. Early application is suggested to assure compatibility between programs. Further information can be obtained from the dean's office in the School of Engineering. Incoming freshmen should refer to "Advanced Placement Credit" for details on credit granted through the College Entrance Examination Board's (CEEB) Advanced Placement Program.

DIRECT TRANSFER PROGRAM

The School of Engineering has dual enrollment 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 biomedical engineering, chemical engineering, civil engineering, electrical engineering, and mechanical engineering are shown in the various curricula on subsequent pages.

Minors can be arranged in many areas, including bioengineering, chemical engineering, electrical engineering, environmental engineering, mechanical engineering, biology, business, chemistry, computer science, management, marketing, mathematics, and physics. Students interested in pursuing a double major in engineering should contact the dean's office. Double majors are also available in chemical engineering/chemistry, electrical engineering/physics, and mechanical engineering/physics.

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 credits of humanities and 12 credits 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.

SATISFACTORY ACADEMIC PROGRESS

Academic records of undergraduate students are reviewed by the Academic Review Committee of the School of Engineering at the end of each academic semester and summer co-op session in accordance with the Criteria for Satisfactory Academic Progress. The criteria are designed to guide students whose academic performance is unsatisfactory toward successful completion of their degree requirements. Students failing to meet the criteria may be issued a warning or may be subject to academic probation or dismissal from the School of Engineering. It is the responsibility of the student to satisfy the academic requirements for graduation as outlined in this catalog.

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 students to complete the requirements for the undergraduate engineering degree. These options include the bachelor's degree following the engineering curriculum during the traditional academic cycle (fall and spring semesters) or the cooperative education cycle, as well

as an accelerated bachelor's/master's program, double majors, and minors.

TRADITIONAL PROGRAM

This option follows one of the engineering curricula described on the following pages during the traditional academic cycle (fall and spring semesters). 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 program. Students have the opportunity to pursue summer internships. For information, contact the dean's office or one of the engineering departments.

COOPERATIVE EDUCATION PROGRAM

In addition to the traditional engineering program, students have the option to gain valuable practical experience with two work periods totaling 12 months of employment in industry and/or government. The bachelor's degree can still be completed within the normal four-year period. It is open to all interested students with advanced standing who have a cumulative GPA of 2.5 or better.

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 the usual five-year co-op program. This enables Widener graduates to start their professional careers one year earlier and earn an additional one year of salary.
- 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 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 co-op program is optional.

A student following the cooperative engineering program spends the first year in full-time study on campus. During the second year, four months are spent working in industry or government and the remaining eight months are spent on campus. The third year contains an eight-month industry or government work experience. During the final nine months, the senior year is completed on campus. The student's work experience is related as closely as possible to the course of study and personal interests.

COOPERATIVE ENGINEERING PROGRAM

| | Fall | Spring | Summer |
|-----------------------|--------|--------|--------|
| Freshman Year | School | School | School |
| Sophomore Year | Co-op | School | School |
| Junior Year | School | Co-op | Co-op |
| Senior Year | School | School | — |

Students seeking a degree in engineering follow the same academic requirements whether or not they participate in the cooperative education 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.

ACCELERATED BACHELOR'S/MASTER'S PROGRAM

The bachelor of science/master of engineering program is an accelerated program that enables engineering students to complete both their bachelor of science and master of engineering degrees in just four to five years. The School of Engineering offers the master of engineering degree with specializations in biomedical, chemical, civil, electrical, and mechanical engineering, and engineering management. The school also offers the master of engineering/master

of business administration dual degree with the School of Business Administration. Certificate programs and environmental engineering option are also available.

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 the six credits will apply to both the undergraduate and graduate degree requirements. For more information, contact the graduate program office or refer to the Graduate Engineering Catalog.

MINORS IN ENGINEERING

Interested students must apply in writing and be formally accepted by the department offering the minor.

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 earn the bioengineering minor, engineering students must complete two technical electives related to bioengineering, a senior project with a bioengineering focus, and BIOL 231 Biology for Engineers. For students outside the School of Engineering, 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 the biomedical engineering chairman by the start of their junior year.

CHEMICAL ENGINEERING MINOR

Students pursuing majors in science or engineering who are interested in careers in the pharmaceutical, chemical processes, or petrochemical industries should consider a minor in chemical engineering. A minor in chemical engineering includes important aspects of chemistry to provide significant exposure to the discipline. The minor is flexible and many of the required courses can be fulfilled as technical electives in the student's major. Interested students should consult with the chemical engineering department chairman for details.

Required courses (10 or 12 credits):

CHE 222 Chemical Engineering Principles
 CHE 329 Transport Phenomena, *or*
 ENGR 320 Fluid Mechanics & ME 455 Heat Transfer
 CHE 330 Chemical Engineering Thermodynamics

Required laboratory (1 credit):

CHE 327 Chemical Engineering Laboratory I *or*
 ChE 427 Chemical/Biochemical Engineering Laboratory II

ELECTRICAL ENGINEERING MINOR

Interested students should consult with the electrical engineering department chairman for more details. An electrical engineering faculty advisor will be assigned to the student upon acceptance.

Students must have at least a 2.5 cumulative grade point average to enroll. For courses to be counted toward the minor, students must earn grades of at least a C or higher. All prerequisites and corequisites must be satisfied before courses can be taken. At least 50 percent of the courses taken in the electrical engineering minor

must have been successfully completed at Widener. Students wishing to enroll in the electrical engineering minor should do so by the first semester of the junior year.

Required courses:

- ENGR 219 Electric Circuits (Corequisites: MATH 133 or MATH 142 and PHYS 162)
- ENGR 223 Electric Circuit Lab (Corequisite: ENGR 219)
- EE 220 Linear Electrical Systems (Prerequisites: ENGR 219, MATH 133 or MATH 142, PHYS 162)

Choose a minimum of 9 credits from the following list of elective courses:

- EE 101 Introduction to Microcontrollers (1 credit)
- EE 230 Logic Design (3 credits)
- EE 232 Logic Design Lab (1 credit)
- EE 313 Electromagnetics (3 credits)
- EE 333 Instrumentation Laboratory (1 credit)
- EE 346 Introduction to Signal Analysis (3 credits)
- EE 347 Introduction to Electronics (3 credits)
- EE 471 Controls I (3 credits)
- Power Engineering Elective (3 credits)

ENVIRONMENTAL ENGINEERING MINOR

A minor in environmental engineering is a good option for students who are interested in ways to protect and restore the quality of our air, water, and land resources, and in the environmental issues and problems that are vitally important to the sustainability of our society's infrastructure. Civil engineering majors can fit the requirements for the environmental engineering minor into their program of study without taking any additional courses. Other engineering majors—as well as students majoring in environmental science, chemistry, and biology—can earn the minor by taking at most four extra courses. Chemical engineering, environmental science, chemistry, and biology majors should be able to apply at least some of the courses for the minor toward requirements for their major.

A minor in environmental engineering can be earned by completing the following requirements, assuming that all prerequisites and corequisites have been met for each course. Other restrictions apply. Interested students should consult with the civil engineering department chairman for details.

Required courses (20 credits):

- MATH 131/132 *or* MATH 141/142
- CHEM 145/146
- CE 347 Environmental Engineering
- CE 330 Water and Wastewater Treatment

Required laboratory (2 credits):

- CE 304, ME 304, CHE 327 & CHE 427, *or* CHEM 367 & CHEM 368

Electives (6–7 credits); select two courses from:

- CE 435 (non-CE majors ONLY), CE 448, CE 457, ENVR 261, and ENVR 304*

**Non-engineering majors may not select ENVR courses as electives; engineering majors may not select more than one ENVR course as an elective. Qualified undergraduates may take electives from among suitable 600-level ENGR courses with approval from the civil engineering department chairman.*

MECHANICAL ENGINEERING MINOR

The minor in mechanical engineering is available to students in other engineering disciplines. The minor is designed to give students a broad understanding of the mechanical engineering fundamentals, as well as depth in one of the following areas: mechanical design, thermal sciences, or dynamics and vibrations.

The minor in mechanical engineering requires completion of 15 credit hours. Students must have a GPA of 2.75 to enroll in the minor and must earn a grade of C or better in all courses required for the minor. Interested students should contact the mechanical engineering department chairman for details.

Required Courses (9 credits)

- ENGR 213 Statics
- ENGR 214 Dynamics
- ENGR 325 Thermodynamics I

Choose one of the following three options (6 credits):

- ENGR 320 Fluid Mechanics & ME 455 Heat Transfer
- ENGR 323 Mechanics of Deformable Bodies & ME 352 Mechanics of Materials
- ME 351 Kinematics & ME 453 Vibrations

ENGINEERING CURRICULA

The following core curriculum outlines the courses to be completed by all engineering students. Refer to full descriptions of the curricular requirements for the biomedical, chemical, civil, electrical, and mechanical engineering programs described in subsequent sections.

| CORE CURRICULUM FOR ALL PROGRAMS | Credits |
|--|-------------|
| 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 | 16.5 |
| ENGR 112 or ENGR 113 or ENGR 114* | 2 |
| MATH 142 Calculus II | 4 |
| CHEM 146 General Chemistry II | 3 |
| PHYS 161 Physics I | 3 |
| PHYS 163 Physics Lab I | 1 |
| Social Science Elective | 3 |
| Physical Education Elective | 0.5 |
| Sophomore Fall | 13 |
| MATH 241 Multivariable Calculus** | 4 |
| PHYS 162 Physics II | 3 |
| ENGR 213 Statics | 3 |
| Humanities Elective | 3 |
| Sophomore Spring | 6 |
| MATH 242 Elementary Differential Equations | 3 |
| Social Science Elective | 3 |
| Junior Fall | 3 |
| Humanities Elective | 3 |
| Junior Spring | 3 |
| Social Science Elective | 3 |
| Senior Fall | 5 |
| ENGR 401 Senior Project I | 2 |
| ASC 400 Values Seminar (WE)*** | 3 |
| Senior Spring | 5 |
| ENGR 402 Senior Project II | 2 |
| Humanities/Social Science Elective | 3 |
| TOTAL CREDITS | 68 |

**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.*

****Students may substitute PHIL 352 Business Ethics (WE).*

Note: Four humanities and four social science courses are required to satisfy the university distribution requirement.

BIOMEDICAL ENGINEERING

Biomedical engineering is the discipline in which experimental and analytical engineering principles and techniques are used to understand complex living systems and to develop devices, methods, and algorithms that improve the quality of human health and life.

The biomedical engineering degree offers graduates productive careers in a wide variety of health care-related industries and government agencies. Graduates are trained not only to have a core understanding of traditional engineering disciplines, but also to have an in-depth knowledge of the body and the interactions between products developed and living beings. Biomedical engineers play a critical role in the design of artificial organs, prostheses, instrumentation, medical information systems, health management and care delivery systems, medical devices used in various medical procedures, and imaging systems.

Technical electives in chemical, electrical, and mechanical engineering can significantly broaden the career choices for biomedical engineering graduates and are highly recommended.

PRE-MEDICAL AND PRE-HEALTH PROFESSION STUDIES

Biomedical engineering is one of the best majors to prepare students for admission into medical, osteopathic, dental, veterinary, and other health profession schools. The biomedical engineering curriculum includes most of the coursework normally expected by medical and health professions schools. In addition to the courses required for the biomedical engineering degree, students are advised to complete one additional biology course (with laboratory), two organic chemistry courses (with laboratories), and one English course. The biomedical engineering program coordinates the pre-med and pre-health professions studies with Widener Pre-Medical Committee. Students should consult with their academic advisor early in their freshman year.

In addition to the pre-med and pre-health professions studies, Widener offers an integrated eight-year undergraduate/medical school and affiliated hospital BS/MD program to entering freshmen with exceptional credentials. Admission to the Widener Medical Scholars Program includes an early assurance, contingency admission to Temple University School of Medicine. The program is described under “Pre-Professional Preparation” in the *Catalog*. Contact the dean’s office for additional information.

PROGRAM OBJECTIVES

The Widener University biomedical engineering program’s graduates are expected to:

- Pursue a career in biomedical engineering or other related area in medicine, health professions, or law.
- Further their education or professional development in advanced degrees, certifications, etc.
- Communicate and work effectively with colleagues and develop personal and professional skills to obtain a leadership position within their chosen area.
- Engage in continuous service to their profession and community.

PROGRAM OUTCOMES

Over the course of their studies, graduates from the biomedical engineering program will have demonstrated:

- 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 understanding of biology and physiology and the capability to apply advanced mathematics (including differential equations and statistics), science, and engineering to solve the problems at the interface of engineering and biology.
- An ability to make measurements on and interpret data from living systems, addressing the problems associated with the interaction between living and nonliving materials and systems.

CURRICULUM—BIOMEDICAL ENGINEERING Credits

| | |
|--|-------------|
| 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 Thinking | 3 |
| Humanities Elective | 3 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 17.5 |
| ENGR 112 Computer Program & Eng. 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 |
| ENGR 213 Statics | 3 |
| ENGR 219 Electric Circuits | 3 |
| ENGR 223 Electric Circuits Lab | 1 |
| PHYS 162 Physics II | 3 |
| PHYS 164 Physics Lab II | 1 |
| Humanities Elective | 3 |
| Sophomore Spring | 16 |
| MATH 242 Elementary Differential Equations | 3 |
| ENGR 214 Dynamics | 3 |
| BME 220 Introduction to Biomedical Engineering | 3 |
| BIOL 231 Biology for Engineers | 4 |
| Social Science Elective | 3 |
| Junior Fall | 16 |
| ENGR 325 Thermodynamics | 3 |
| ENGR 315 Probability, Statistics & Random Processes | 3 |
| BME 303 Biomedical Engineering Lab I | 1 |
| BME 310 Fundamentals of Biological Signals & Systems | 3 |
| BME 320 Biomechanics | 3 |
| Social Science Elective | 3 |
| Junior Spring | 15 |
| BME 350 Biotransport | 3 |
| BME 360 Biomaterials | 3 |
| BME 304 Biomedical Engineering Lab II | 1 |
| ENGR 312 Engineering Economics | 2 |
| BME 340 Bioinstrumentation | 3 |
| BME Technical Elective** | 3 |

| | |
|--|-----------|
| Senior Fall | 15 |
| ENGR 401 Senior Project I | 2 |
| ASC 400 Values Seminar (WE) | 3 |
| BME 410 Biomedical Engineering Seminar I | 1 |
| BME Technical Electives*** | 6 |
| Humanities Elective | 3 |
| Senior Spring | 15 |
| ENGR 402 Senior Project II | 2 |
| BME 460 Regulatory Aspects of Biomedical Engineering | 2 |
| BME 420 Biomedical Engineering Seminar II | 1 |
| BME 465 Professional Practice | 1 |
| BME Technical Electives*** | 6 |
| Social Science Elective | 3 |

TOTAL CREDITS **129**

*Students may take ENGR 113 Computer-Aided Engineering Design or ENGR 114 Engineering Graphics and Computer-Aided Design in lieu of ENGR 112.

**BME 330 Thermodynamics of Biological Systems; BME 332 Mass Transfer in Biological Systems; ENGR courses with approval of academic advisor and consent of instructor.

***BME 440 Bioheat and Mass Transfer; BME 442 Cell and Tissue Engineering; BME 445 Systems in Biomedical Engineering; BME 446 Biomedical Fluid Mechanics; BME 448 Biomedical Devices; BME 449 Bioimaging. Other courses with approval of academic advisor and consent of instructor, including graduate courses for qualified students.

CHEMICAL ENGINEERING

Chemical engineering uses science, especially chemistry, engineering, and mathematics, to solve societal problems. Chemical engineering is key in the safe production of pharmaceuticals, fuels, food, clean water, and the modern materials used in electronics, apparel, and construction. Chemical engineers 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 Widener’s chemical engineering program are employed in the pharmaceutical, chemical, food, biochemical, pulp and paper, and polymer industries, as well as by the government. Many chemical engineering graduates continue their careers by earning advanced degrees and professional licenses.

PROGRAM OPTIONS

The following options are available:

- Double major with biomedical engineering.
- Double major with chemistry.
- Minors in bioengineering, chemistry, mathematics, or biology.
- Accelerated BS in chemical engineering and MEng.
- 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 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 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 life-long learning.
- a knowledge of contemporary issues.
- an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.
- a thorough grounding in the basic sciences including chemistry, physics, and biology appropriate to the objectives of the program; and sufficient knowledge in the application of these basic sciences to enable graduates to design, analyze, and control physical, chemical, and biological processes, consistent with the program educational objectives.

CURRICULUM—CHEMICAL ENGINEERING **Credits**

| | |
|---|-------------|
| 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 | 16 |
| MATH 241 Multivariable Calculus | 4 |
| CHEM 255 Organic Chemistry I | 4 |
| CHEM 257 Organic Chemistry Lab I | 1 |
| PHYS 162 Physics II | 3 |
| PHYS 164 Physics Lab II | 1 |
| Humanities Elective | 3 |
| Sophomore Spring | 17 |
| 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 |
| Social Science Elective | 3 |

| | |
|---|------------|
| Junior Fall | 16 |
| ENGR 213 Statics | 3 |
| CHE 329 Transport Phenomena | 4 |
| CHE 330 Chemical Engineering Thermodynamics | 3 |
| CHEM 385 Physical Chemistry I | 4 |
| Technical Elective** | 2 |
| Junior Spring | 16 |
| ENGR 219 Electric Circuits | 3 |
| ENGR 223 Electric Circuits 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 |
| 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 |
| Humanities Elective | 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 | 132 |

*Students may take ENGR 113 Computer-Aided Engineering Designs in lieu of ENGR 112.

**Students considering a career in the chemical process or petroleum industries should take: ENGR 312, ENGR 315, ME 215, ME 354, CHEM 300- or 400-level courses, and, if qualified, graduate engineering courses. Students considering a career in the biochemical or pharmaceutical industries should take: CHE 430, CE 445, BCH 452, BCH 451, BIOL 231, CHEM 300- or 400-level courses, and, if qualified, graduate engineering courses. Students should check with their academic advisor. Students enrolled in a double major program and those taking bioengineering, mathematics, chemistry, or biology minors should check with their academic advisor before choosing an elective.

**CURRICULUM—CHEMICAL ENGINEERING/
CHEMISTRY DOUBLE MAJOR*** **Credits**

| | |
|--|-------------|
| 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 | 16 |
| MATH 241 Multivariable Calculus | 4 |
| CHEM 255 Organic Chemistry I | 4 |
| CHEM 257 Organic Chemistry Lab I | 1 |
| PHYS 162 Physics II | 3 |
| PHYS 164 Physics Lab II | 1 |
| Humanities Elective** | 3 |

| | |
|--|-----------|
| Sophomore Spring | 17 |
| 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 |

| | |
|---|-----------|
| Junior Fall | 18 |
| ENGR 213 Statics | 3 |
| CHE 329 Transport Phenomena | 4 |
| CHE 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 219 Electrical Circuits | 3 |
| ENGR 223 Electrical Circuits 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 |

| | |
|--|-----------|
| Senior Fall | 17 |
| ENGR 401 Senior Project I | 2 |
| ENGR 314 Introduction to Control Systems | 3 |
| CHE 425 Process Design Methods (WE) | 3 |
| CHE 427 Chemical Engineering Lab II (WE) | 1 |
| CHEM 389 Physical Chemistry Lab | 1 |
| CHEM 499 Research Experience | 1 |
| Humanities/Social Science Elective** | 3 |
| ASC 400 Values Seminar (WE) | 3 |

| | |
|---|--------------|
| Senior Spring | 18/19 |
| ENGR 402 Senior Project II | 2 |
| CHE 428 Process Design | 3 |
| CHE 429 Chemical Reaction Engineering | 3 |
| CHEM 499 Research Experience | 1 |
| Advanced Chemistry Elective** | 3/4 |
| Humanities Elective** | 3 |
| Social Science Elective** | 3 |

TOTAL CREDITS **140/141**

*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 Design in lieu of ENGR 112.

CIVIL ENGINEERING

Civil engineers use imagination, creativity, and technical knowledge to design, construct, and maintain the physical and operational infrastructure 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. The civil engineering curriculum can easily be combined with a minor in environmental engineering or bioengineering. Minors in business or liberal arts subjects are also available.

PROGRAM OBJECTIVES

Graduates of Widener’s civil engineering program are expected to:

- Perform successfully in civil engineering practice by utilizing technical, organizational, and business skills to meet the needs of their employers, clients, and communities.
- Demonstrate commitment to professionalism in engineering practice by pursuing professional licensure.
- Communicate and interact 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 ability to apply knowledge of mathematics, science, and engineering.
- An ability to design and conduct experiments and to analyze and interpret data in several civil engineering areas.
- An ability to design a civil engineering system, component, or process to meet desired needs within realistic constraints.
- An ability to function on multidisciplinary teams.
- An ability to identify, formulate, and solve problems in several civil engineering areas.
- An understanding of professional and ethical responsibility.
- An ability to communicate effectively.
- The broad education necessary to understand the impact of civil 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 civil engineering practice.
- An understanding of professional practice issues such as business, management, and public policy concepts, as well as the importance of professional licensure.

| CURRICULUM—CIVIL ENGINEERING | Credits |
|---|-------------|
| 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 | 16.5 |
| ENGR 113 Computer-Aided Engineering Design* | 2 |
| MATH 142 Calculus II | 4 |
| PHYS 161 Physics I | 3 |
| PHYS 163 Physics Lab I | 1 |
| CHEM 146 General Chemistry II | 3 |
| Social Science Elective | 3 |
| Physical Education Elective | 0.5 |

| | |
|---|-----------|
| Sophomore Fall | 16 |
| MATH 241 Multivariable Calculus | 4 |
| PHYS 162 Physics II | 3 |
| ENGR 213 Statics | 3 |
| CE 205 Surveying with CADD Applications | 3 |
| Humanities Elective | 3 |
| Sophomore Spring | 17 |
| MATH 242 Elementary Differential Equations | 3 |
| CE 206 Structures & Materials Lab (WE) | 2 |
| CE 250 Transportation Engineering | 3 |
| ENGR 214 Dynamics | 3 |
| ENGR 323 Mechanics of Deformable Bodies | 3 |
| Social Science Elective | 3 |
| Junior Fall | 18 |
| CE 342 Structural Analysis I | 3 |
| CE 347 Environmental Engineering | 3 |
| ENVR 300 Geology for Engineers** | 3 |
| ENGR 326 Materials Engineering | 3 |
| Engineering Science Elective*** | 3 |
| Humanities Elective | 3 |
| Junior Spring | 18 |
| CE 304 Water & Envr Engr Lab (WE) | 2 |
| CE 334 Concrete Design | 3 |
| CE 343 Soil Mechanics | 4 |
| CE 345 Structural Analysis II or CE 330 Water & Wastewater Treatment | 3 |
| ENGR 320 Fluid Mechanics | 3 |
| Social Science Elective | 3 |
| Senior Fall | 16 |
| CE 435 Hydraulics & Hydrology | 3 |
| CE 441 Steel Design | 3 |
| CE 446 Foundation Engineering | 3 |
| ENGR 312 Engineering Economics | 2 |
| ENGR 401 Senior Project I | 2 |
| Humanities or Social Science Elective | 3 |
| Senior Spring | 15 |
| ASC 400 Values Seminar (WE) | 3 |
| CE 445 Professional Practice Seminar | 1 |
| CE 450 Highway Engineering | 3 |
| CE Electives† | 6 |
| ENGR 402 Senior Project II | 2 |

TOTAL CREDITS **133**

*Students may substitute ENGR 112 Computer Programming & Engineering Problem Solving or ENGR 114 Engineering Graphics and Computer-Aided Design.

**Students may substitute BIOL 231 Biology for Engineers, ENVR 171 Principles of Environmental Science, ENVR 261 Geographic Information Systems, or other approved science course with permission of the department chairman.

***Engineering science electives include ENGR 219 Electrical Circuits, ENGR 325 Thermodynamics, and ENGR 315 Probability, Statistics, and Random Processes for Engineers.

†CE electives include CE 330 Water & Wastewater Treatment, CE 345 Structural Analysis II, CE 401 Land Development, CE 431 Computational Methods, CE 448 Municipal & Industrial Waste Engineering, CE 449 Construction Engineering & Management, CE 453 Advanced Soil & Rock Engineering, CE 457 Environmental Impact Analysis, CE 461 Introductory Finite Elements, and CE 462 Additional Topics in Structural Design. Students in the accelerated BS/MEng program should select two graduate-level courses as their CE electives.

Note: Co-op students may take ENGR 320 Fluid Mechanics in the summer session and ENVR 300 Geology for Engineers in the fall semester.

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. A dual major in physics is available. Additional minors are also available in engineering and liberal arts.

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:

- 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, 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.
- An ability to apply knowledge of basic calculus through the freshman level (differential and integral calculus), as well as advanced mathematics to include probability and statistics.
- An ability to demonstrate knowledge of basic science, computer science, and engineering science.

SENIOR YEAR TECHNICAL ELECTIVES

Students majoring in electrical engineering may select technical electives from the following list during their senior year, assuming that they meet the specific prerequisites for each course. Other courses may be permitted with approval of the electrical engineering faculty advisor.

- EE 465 Transmission of Electromagnetic Energy
- EE 472 Controls II
- EE 474 Computers II
- EE 475 Digital Filter Design
- EE 476 Intro. to Image Processing
- EE 479 Optical Fiber Communication
- EE 482 Computer Networking & Data Communications
- EE 488 Special Topics in Electrical Engineering

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 accelerated bachelor's/master of engineering degree program, toward their graduate studies in electrical engineering.

CURRICULUM—ELECTRICAL ENGINEERING Credits

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 |
| CHEM 146 General Chemistry II | 3 |
| MATH 142 Calculus II | 4 |
| PHYS 161 Physics I | 3 |
| PHYS 163 Physics Lab I | 1 |
| EE 101 Introduction to Microcontrollers | 1 |
| Social Science Elective | 3 |
| Physical Education Elective | 0.5 |

Sophomore Fall 16

| | |
|--|---|
| ENGR 213 Statics | 3 |
| ENGR 219 Electric Circuits | 3 |
| ENGR 223 Electric Circuits Lab | 1 |
| EE 312 Engineering Economics | 2 |
| MATH 242 Elementary Differential Equations | 3 |
| PHYS 162 Physics II | 3 |
| PHYS 164 Physics Lab II | 1 |

Sophomore Spring 18

| | |
|--|---|
| EE 220 Linear Electrical Systems | 3 |
| EE 230 Logic Design | 3 |
| EE 232 Logic Design Lab | 1 |
| MATH 241 Multivariable Calculus | 4 |
| PHYS 261 Modern Physics | 3 |
| PHYS 263 Modern Physics Lab* | 1 |
| ENGL 102 Advanced Composition & Literature | 3 |

Junior Fall 16

| | |
|--|---|
| ENGR 315 Probability, Statistics, & Random Processes | 3 |
| ENGR 325 Thermodynamics | 3 |
| EE 313 Electromagnetics | 3 |
| EE 333 Instrumentation Lab | 1 |
| EE 347 Introduction to Electronics | 3 |
| Humanities Elective | 3 |

| | |
|--|------------|
| Junior Spring | 15 |
| Engineering Science Technical Elective** | 3 |
| EE 305 Professional Practices Seminar (WE) | 1 |
| EE 346 Signal Analysis | 3 |
| EE 348 Microelectronics | 3 |
| EE 345 Junior Design Lab | 2 |
| Social Science Elective | 3 |
| Senior Fall | 17 |
| ENGR 401 Senior Project I | 2 |
| EE 471 Controls I | 3 |
| EE 473 Computers I | 3 |
| EE 477 Communications Systems | 3 |
| Power Engineering Elective | 3 |
| ASC 400 Values Seminar (WE)** | 3 |
| Senior Spring | 17 |
| ENGR 402 Senior Project II | 2 |
| Senior Technical Electives† | 9 |
| Humanities Elective | 3 |
| Humanities/Social Science Elective | 3 |
| TOTAL CREDITS | 133 |

*Students may substitute PHYS 271 Computational Methods in Physics.

**Students may take one of the following: ENGR 214 Dynamics, ENGR 323 Mechanics of Deformable Bodies, or ENGR 326 Materials Engineering.

***Students may substitute PHIL 352 Business Ethics (WE).

†The student's faculty advisor must approve the senior technical elective choices.

ELECTRICAL ENGINEERING/PHYSICS DOUBLE MAJOR

A special curriculum enables students to major in electrical engineering and in physics. Details of the curriculum can be obtained from the chairman of the electrical engineering department or the associate dean of science. Students wishing to pursue this double major must get written permission from both departments.

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 an ability to work professionally in both thermal and mechanical system areas.

CURRICULUM—MECHANICAL ENGINEERING Credits

| | |
|---|-------------|
| Freshman Fall | 16.5 |
| ENGR 111 Engineering Techniques (WE) | 2 |
| CHEM 145 General Chemistry I | 3 |
| CHEM 147 Chemistry Lab I | 1 |
| MATH 141 Calculus I | 4 |
| ENGL 101 Composition & Critical Thought | 3 |
| Humanities Elective | 3 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 17.5 |
| ENGR 114 Engineering Graphics & Computer-Aided Design* .. | 2 |
| CHEM 146 General Chemistry II | 3 |
| CHEM 148 Chemistry Lab II | 1 |
| MATH 142 Calculus II | 4 |
| PHYS 161 Physics I | 3 |
| PHYS 163 Physics Lab I | 1 |
| Social Science Elective | 3 |
| 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 Elective | 3 |
| Sophomore Spring | 17 |
| ENGR 214 Dynamics | 3 |
| ENGR 312 Engineering Economics | 2 |
| ENGR 323 Mechanics of Deformable Bodies | 3 |
| MATH 242 Differential Equations | 3 |
| ME 215 Fundamentals of Engineering Materials & Design | 3 |
| Social Science Elective | 3 |

| | |
|---|------------|
| Junior Fall | 17 |
| ME 303 Mechanical Measurements I (WE) | 2 |
| ME 351 Kinematics | 3 |
| ME 354 Computations in Mechanical Engineering | 3 |
| ENGR 320 Fluid Mechanics | 3 |
| ENGR 325 Thermodynamics | 3 |
| Humanities Elective | 3 |
| Junior Spring | 17 |
| ENGR 314 Introduction to Control Systems | 3 |
| ME 304 Mechanical Measurements II (WE) | 2 |
| ME 346 Thermodynamics II | 3 |
| ME 352 Mechanics of Engineering Materials | 3 |
| Science/Engineering Elective** | 3 |
| Social Science Elective | 3 |
| Senior Fall | 16 |
| ENGR 401 Senior Project I | 2 |
| ME 407 Mechanical Engineering Seminar I | 1 |
| ME 453 Engineering Vibrations | 3 |
| ME 455 Heat Transfer | 3 |
| ME 461 Design | 4 |
| ASC 400 Values Seminar (WE) | 3 |
| Senior Spring | 15 |
| ENGR 402 Senior Project II | 2 |
| ME 408 Mechanical Engineering Seminar II | 1 |
| Mechanical Engineering Design Elective*** | 3 |
| Mechanical Engineering Technical Electives [†] | 6 |
| Humanities/Social Science Elective | 3 |
| TOTAL CREDITS | 134 |

*Students may take ENGR 112 or ENGR 113 in lieu of ENGR 114.
 **Science/engineering electives: 300-level physics or math course; BIOL 231 Biology for Engineers; CE 347 Environmental Engineering; CHEM 255 Organic Chemistry; ENGR 315 Probability, Statistics, and Random Processes for Engineers; ME 388 Special Topics in Mech. Engineering.
 ***Mech. engineering design electives: ME 462 Design of Mech. Systems, ME 464 Design of Fluid/Thermal Systems.
[†]Mech. engineering technical electives: ME 474 Intro. to Finite Element Analysis; ME 475 Biomechanics; ME 476 Bio-Heat & Mass Transfer; ME 477 Intro. to Composite Materials; ME 488 Special Topics in Mech. Engineering; 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* | Credits |
| Freshmen Fall | 16.5 |
| ENGR 111 Engineering Techniques (WE) | 2 |
| CHEM 145 General Chemistry I | 3 |
| CHEM 147 Chemistry Lab I | 1 |
| MATH 141 Calculus I | 4 |
| ENGL 101 Composition & Critical Thought | 3 |
| Humanities Elective | 3 |
| Physical Education Elective | 0.5 |
| Freshmen Spring | 17.5 |
| ENGR 114 Engineering Graphics & Computer-Aided Design* .. | 2 |
| CHEM 146 General Chemistry II | 3 |
| CHEM 148 Chemistry Lab II | 1 |
| MATH 142 Calculus II | 4 |
| PHYS 161 Physics I | 3 |
| PHYS 163 Physics Lab I | 1 |
| English 102 Advanced Composition & Literature | 3 |
| 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 Elective | 3 |
| Sophomore Spring | 16 |
| ENGR 214 Dynamics | 3 |
| ENGR 323 Mechanics of Deformable Bodies | 3 |
| PHYS 261 Physics III | 3 |
| PHYS 263 Physics Lab III | 1 |
| ME 215 Fundamentals of Engineering Materials & Design | 3 |
| Social Science Elective | 3 |
| Sophomore Summer | 17 |
| MATH 242 Elementary Differential Equations | 3 |
| ENGR 320 Fluid Mechanics | 3 |
| ENGR 325 Thermodynamics | 3 |
| ME 303 Mechanical Measurements I (WE) | 2 |
| ME 354 Computations in Mechanical Engineering | 3 |
| Social Science Elective | 3 |
| Junior Fall | 17 |
| ME 351 Kinematics | 3 |
| ENGR 312 Engineering Economics | 2 |
| ENGR 314 Introduction to Control Systems | 3 |
| PHYS 309 Mathematical Methods of Physics | 3 |
| PHYS 315 Electromagnetic Theory or EE 313 Electromagnetics | 3 |
| Humanities Elective | 3 |
| Junior Spring | 15 |
| ME 304 Mechanical Measurements II (WE) | 2 |
| ME 346 Thermodynamics II | 3 |
| ME 352 Mechanics of Engineering Materials | 3 |
| PHYS 316 Optics & Wave Motion | 3 |
| PHYS 326 Optics Lab | 1 |
| Social Science Elective | 3 |
| Senior Fall | 16 |
| ENGR 401 Senior Project I | 2 |
| ME 407 Mechanical Engineering Seminar I | 1 |
| ME 453 Engineering Vibrations | 3 |
| ME 455 Heat Transfer | 3 |
| ME 461 Design | 4 |
| ASC 400 Values Seminar (WE) | 3 |
| Senior Spring | 13 |
| ENGR 402 Senior Project II | 2 |
| ME 408 Mechanical Engineering Seminar II | 1 |
| PHYS 413 Quantum Mechanics | 4 |
| Mechanical Engineering Design Elective** | 3 |
| Mechanical Engineering Technical Elective [†] | 3 |
| TOTAL CREDITS | 146 |

*Students may take ENGR 112 or ENGR 113 in lieu of ENGR 114.
 **Mech. engineering design electives: ME 462 Design of Mech. Systems, ME 464 Design of Fluid/Thermal Systems.
[†]Mech. engineering technical electives: ME 474 Intro. to Finite Element Analysis; ME 475 Biomechanics; ME 476 Bio-Heat & Mass Transfer; ME 477 Intro. to Composite Materials; ME 488 Special Topics in Mech. Engineering.

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 leaders for the global hospitality industry through an emphasis on experiential learning and to develop citizens of character who value civic engagement and lifelong 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 field experiences 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 BS degree in hospitality management.

LEARNING OUTCOMES

After completing the BS program, students will be able to:

1. Internalize and demonstrate a culture of service specific to the context of the hospitality industry.
2. Identify and apply business concepts to hospitality management.
3. Identify and demonstrate skills relevant to the operational areas of hospitality management.
4. Communicate effectively.
5. Display qualities of leadership for the global hospitality industry.

REQUIRED HM COURSES

HM 101 Introduction to the Hospitality Industry
HM 102 Introduction to Lodging Management
HM 107 Introduction to Food Preparation
HM 204 Applied Human Resource Management
HM 207 Applied Food Production Management
HM 304 Hospitality Accounting
HM 306* Hospitality Marketing
HM 352 Facilities Management
HM 400*-401-402 Cooperative Education
HM 403 Hospitality Law
HM 404* Strategic Human Resource Management
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:

- Events Management
- Gaming Operations
- Hospitality Management (a self-directed concentration)
- Hotel and Resort Management
- Managed Services
- 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 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 Technology
HM 364 Casino Management (required)
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

EVENTS MANAGEMENT

This area of interest prepares students for managing a variety of social, business, political, cultural, and sporting events. In addition to the knowledge provided by the core curriculum, students can achieve an events management focus through work experience in summer internships, the cooperative education semester, and the selection of the following courses:

HM 363 Special Events Management (required)
HM 450 Beverage Management
HM 368 Principles of Tourism
HM 361 Managed Services

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 302 Advanced Lodging Management (required)
HM 355 Resort & Timeshare Management
HM 363 Special Events 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 358 Hospitality Computer Applications
- HM 363 Special Events Management
- HM 368 Principles of Tourism (required)

CURRICULUM—HOSPITALITY MANAGEMENT[†] Credits

| | |
|--|-------------|
| Freshman Fall | 15 |
| ENGL 101 Composition & Critical Thought | 3 |
| HM 101 Introduction to Hospitality | 3 |
| ML Elementary Modern Language | 3 |
| MATH 117 Elementary Functions | 3 |
| Introductory Social Science | 3 |
| Freshman Spring | 16 |
| ACCT 204 Basic Financial Accounting | 3 |
| ENGL 102 Advanced Composition & Literature | 3 |
| HM 102 Introduction to Lodging Management | 3 |
| MIS 180 Computing & Spreadsheets | 1 |
| SCI 107 Food Science I | 3 |
| ML Modern Language | 3 |
| Sophomore Fall | 16.5 |
| ACCT 205 Basic Management Accounting | 3 |
| EC 201 Principles of Macroeconomics | 3 |
| HM 107 Introduction to Food Prep | 4 |
| HM 204 Applied Human Resource Management | 3 |
| PRWR 215 Effective Communication | 3 |
| Physical Education Elective | 0.5 |
| Sophomore Spring | 16.5 |
| COMS 290 Interpersonal Communication | 3 |
| EC 202 Principles of Microeconomics | 3 |
| HM 207 Applied Food Production Management | 4 |
| MGT 210 Principles of Management | 3 |
| Humanities/Social Science Elective* | 3 |
| Physical Education Elective | 0.5 |
| Junior Fall | 16 |
| HM 304 Hospitality Accounting | 3 |
| HM 404 Strategic Human Resource Management | 3 |
| SCI 209/210 Food Science and Laboratory II | 4 |
| HM Elective | 3 |
| Free Elective | 3 |
| Junior Spring | 15 |
| HM 400 Co-Op Leadership Development Seminar | 6 |
| HM 401 Co-Op Leadership Skills Assessment | 3 |
| HM 402 Co-Op Applied Hospitality Management Principles | 6 |
| Senior Fall | 16 |
| HM 306 Hospitality Marketing | 3 |
| HM 407 Restaurant Operations Management | 4 |
| FIN 303 Financial Management | 3 |
| HM Elective | 3 |
| Science Elective** | 3 |
| Senior Spring | 15 |
| HM 352 Facilities Management | 3 |
| HM 403 Hospitality Law | 3 |
| HM 498 Hospitality Capstone | 3 |
| HM Elective | 3 |
| Free Elective | 3 |

TOTAL CREDITS 126

*GP 102 Foreign Governments and Politics is recommended for the Global Leadership Program.

**Recommend BIOL 115 Human Nutrition

[†]Two summer field experiences (400 hours minimum each) are also required at an approved location in the hospitality industry. A work-book must be completed and submitted to the advisor for completion of the field experience requirement.

| HOSPITALITY MANAGEMENT ELECTIVES | Credits |
|---|----------------|
| Casino Management | 3 |
| Club Management | 3 |
| Managed Services | 3 |
| Hospitality Industry Training Systems | 3 |
| Hospitality Technology | 3 |
| Independent Research | 1-3 |
| Beverage Management | 3 |
| Labor Relations in the Hospitality Industry | 3 |
| Resort and Timeshare Management | 3 |
| Special Events Management | 3 |

SUMMER FIELD EXPERIENCE

REQUIREMENTS

Bachelor's degree candidates must complete two field experiences. 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 a workbook must be completed and approved by the faculty advisor.

PROCEDURES

A student is responsible for obtaining the appropriate field experience workbook from his/her faculty advisor prior to the beginning of each summer employment. 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 the HM faculty advisor upon returning to school in the fall.

Transfer students may petition for acceptance of past work experience completed for other accredited institutions as fulfillment for one field experience requirement. Students transferring as juniors without prior work experience must work in the hospitality industry at least one summer prior to beginning the program. A workbook must be completed for this work experience. The transfer student is responsible for obtaining this booklet as well as petitions for acceptance of past work experience 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 field experiences.
- 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.

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.

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 Human Sexuality Studies, the Center for Social Work Education, the Institute for Graduate Clinical Psychology, and the Institute for Physical Therapy 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 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 developed as part of a competency model based on the Educational Policy and Accreditation Standards of the Council on Social Work Education. The courses 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. As part of the competency assessment educational approach, students are required to develop a portfolio.

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 professional social work courses beyond introductory level courses (SW 107 and SW 330/331) is restricted to social work majors or by special permission by the instructor or BSW program director.

When a student declares social work as a major, the director of the baccalaureate social work program meets with the student to discuss the course of study appropriate for a social work major, develop a tentative plan for completion of required course work, and assign a social work faculty advisor. The social work faculty advisor will meet with the student each semester to review his or her course of study and to provide assistance with other academic concerns or personal problems.

APPLICATION TO THE BSW PROGRAM: BSW CANDIDACY

Four-year students are formally considered for admission to the BSW program in the spring semester of their sophomore year. Transfer students are considered for admission in the fall semester of their junior year. Below are the two separate procedures for four-year students and transfer students:

Four-Year Students

To be considered for admission to the BSW program, a four-year student must have completed at least 60 credits and completed SW 107, SW 330 and SW 320, and meet the academic performance standards. All four-year social work majors must submit an application for admission to the BSW program no later than the spring semester of the sophomore year to be eligible to earn the BSW degree. The application procedure requires students to meet with their advisors to discuss their qualifications for admission. Four-year students applying to the BSW program will submit a BSW candidacy packet. To be considered for admission to the BSW program, a student must have:

- Completed at least 60 credit hours.
- Completed SW 107, SW 320, and SW 330.
- Achieved a cumulative GPA of 2.5 or higher.
- Earned no lower than a grade of a "C" in any social work course.
- Demonstrated competency in oral and written expression of the English language.
- Demonstrated personal characteristics consistent with potential for professional social work practice.

The student must complete an application, which includes a personal statement, and be accepted by the BSW Admissions Committee.

Transfer Students

To be considered for admission to the BSW program, a transfer student must have been accepted to the university with a completed transfer equivalency report that was discussed with the BSW program director when the student entered the university. Transfer students must be enrolled in appropriate social work courses depending upon the transfer equivalency report and meet the academic performance standards.

All transfer social work majors must submit an application for admission to the BSW program no later than the spring semester of the junior year to be eligible to earn the BSW degree. The application procedure requires students to meet with the BSW program director to discuss their qualifications for admission. Transfer students applying to the BSW program will submit a BSW candidacy packet. To be considered for admission to the BSW Program, a transfer student must have:

- A Widener University Transfer Equivalency Report, which was discussed with the BSW program director.
- Enrolled in appropriate social work courses according to the academic planning established upon entering the university.
- Achieved a cumulative GPA of 2.5 or higher.
- Earned no lower than a grade of a "C" in any social work course.
- Demonstrated competency in oral and written expression of the English language.
- Demonstrated personal characteristics consistent with potential for professional social work practice.
- Met with the BSW program director for a formal candidacy interview.

The student must complete an application, which includes a personal statement, and be accepted by the BSW Admissions Committee.

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 330, 331, 341, 342, and 440. 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 or ANTH 204.
- 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 have 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 have one course in literature, art history, music, or philosophy).

**All social work students are strongly encouraged to satisfy their humanities requirement by taking modern languages.

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 Credits

Introductory courses (22 credits)

| | |
|---|---|
| ANTH 105 Cultural Anthropology | 3 |
| BIOL 101 Principles of Biological Systems w/ Lab | |
| or BIOL 107 Biology & Society | 4 |
| BIOL 102 Principles of Human Biology | |
| or PSY 355 Biological Psychology | 3 |
| or ANTH 204 Biological Anthropology | 3 |
| ENGL 101 Composition & Critical Thought | 3 |
| PSY 105 Introduction to Psychology | 3 |
| SOC 105 Introduction to Sociology | 3 |
| SW 107 Introduction to Social Work & Social Welfare | 3 |

Core courses (36 credits)

| | |
|--|---|
| SW 320 Generalist Social Work Practice with Individuals, Families, & Groups I | 3 |
| SW 321 Generalist Social Work Practice with Individuals, Families, & Groups II | 3 |
| SW 330 Human Behavior & Cultural Diversity I | 3 |
| SW 331 Human Behavior & Cultural Diversity II | 3 |
| SW 341 Social Work History & Policy I | 3 |
| SW 342 Social Work History & Policy II | 3 |
| SW 350 Social Work Research Methods I* | 3 |
| SW 351 Social Work Research Methods II* | 3 |
| SW 409 Social Work Capstone I | 3 |
| SW 410 Social Work Capstone II | 3 |
| SW 440 Social Work with Organizations | 3 |
| SW 441 Social Work with Communities | 3 |

Field Practicum Sequence (16 hours/week or 240 hours/semester)

| | |
|---|---|
| SW 420 Social Work Practice with Individuals, Families, & Groups I | 3 |
| SW 421 Social Work Practice with Individuals, Families, & Groups II | 3 |
| SW 423 Social Work Field Placement I | 3 |
| SW 424 Social Work Field Placement II | 3 |

TOTAL CREDITS 70

*Social work students with a dual major in psychology must take PSY 385 & 387. Social work-only majors and dual majors in gender and women's studies must take SW 350 & 351.

| CURRICULUM—SOCIAL WORK MAJOR | Credits |
|---|----------------|
| Freshman Fall | 16.5 |
| BIOL 101 Principles of Biological Systems w/ Lab or BIOL 107 Biology & Society | 4 |
| ENGL 101 Composition & Critical Thought | 3 |
| PSY 105 Introduction to Psychology | 3 |
| SW 107 Introduction to Social Work & Social Welfare | 3 |
| Developmental Course (if required) | 3 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 15.5 |
| ANTH 105 Cultural Anthropology | 3 |
| BIOL 102 Principles of Human Biology or PSY 355 Biological Psychology or ANTH 204 Biological Anthropology | 3 |
| SOC 105 Introduction to Sociology | 3 |
| Humanities Elective | 3 |
| Free Elective | 3 |
| Physical Education Elective | 0.5 |
| Sophomore Fall | 15 |
| Humanities Elective | 3 |
| Math/Science Elective | 3 |
| Social Science Elective | 3 |
| Free Electives | 6 |
| Sophomore Spring | 15 |
| Humanities Electives | 6 |
| Math/Science Elective | 3 |
| Free Electives | 6 |
| Junior Fall | 15 |
| SW 320 Generalist Social Work Practice with Individuals, Families, & Groups I | 3 |
| SW 330 Human Behavior & Cultural Diversity I | 3 |
| SW 341 Social Work History & Policy I | 3 |
| SW 350 Social Work Research Methods I | 3 |
| Free Elective | 3 |
| Junior Spring | 15 |
| SW 321 Generalist Social Work Practice with Individuals, Families, & Groups II | 3 |
| SW 331 Human Behavior & Cultural Diversity II | 3 |
| SW 342 Social Work History & Policy II | 3 |
| SW 351 Social Work Research Methods II | 3 |
| Free Elective | 3 |
| Senior Fall | 15 |
| SW 409 Social Work Capstone I | 3 |
| SW 420 Social Work Practice with Individuals, Families & Groups I | 3 |
| SW 423 Social Work Field Placement I | 3 |
| SW 440 Social Work with Organizations | 3 |
| Free Elective | 3 |
| Senior Spring | 15 |
| SW 421 Social Work Practice with Individuals, Families, & Groups II | 3 |
| SW 424 Social Work Field Placement II | 3 |
| SW 410 Social Work Capstone II | 3 |
| SW 441 Social Work with Communities | 3 |
| Free Elective | 3 |
| 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 and a BA in psychology.

| CURRICULUM—SOCIAL WORK/ PSYCHOLOGY DUAL MAJOR | Credits |
|---|------------------|
| Freshman Fall | 16.5/17.5 |
| BIOL 101 Principles of Biological Systems w/ Lab or BIOL 107 Biology & Society | 4 |
| ENGL 101 Composition & Critical Thought | 3 |
| FRS 101 Freshman Seminar (optional) | 1 |
| MATH 101 (if required) or Science Elective 1 | 3 |
| PSY 105 Introduction to Psychology | 3 |
| SW 107 Introduction to Social Work & Social Welfare | 3 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 15.5 |
| ANTH 105 Cultural Anthropology | 3 |
| POLS 101 American Government & Politics | 3 |
| MATH 116 or 117 (Science Elective 2) | 3 |
| SOC 105 Introduction to Sociology | 3 |
| PSY Advanced Elective 1 [†] | 3 |
| Physical Education Elective | 0.5 |
| Sophomore Fall | 16 |
| PSY 385 Statistical Methods w/ Lab | 4 |
| SW 330 Human Behavior & Cultural Diversity I | 3 |
| PSY Advanced Elective 2 [†] | 3 |
| Humanities Elective 1 | 3 |
| Science Elective 3 | 3 |
| Sophomore Spring | 16 |
| PSY 387 Research Design & Lab | 4 |
| PSY Advanced Elective 3 [†] | 3 |
| SW 331 Human Behavior & Cultural Diversity II | 3 |
| Humanities Elective 2 (WE) | 3 |
| Humanities Elective 3 | 3 |
| Junior Fall | 15 |
| PSY 355 Biological Psychology (PSY Advanced Elective 4/Science Elective 4)* | 3 |
| PSY Advanced Elective 5 [†] | 3 |
| SW 320 Generalist Social Work Practice with Individuals, Families, & Groups I | 3 |
| SW 341 Social Work History & Policy I | 3 |
| Humanities Elective 4 | 3 |
| Junior Spring | 16 |
| PSY 330 or PSY 377 (WE) | 3 |
| PSY Advanced Elective 6 w/ Lab [†] | 4 |
| SW 321 Generalist Social Work Practice with Individuals, Families, & Groups II | 3 |
| SW 342 Social Work History & Policy II | 3 |
| ASC 400 Values Seminar | 3 |
| Senior Fall | 15 |
| PSY 409 Senior Research I | 3 |
| SW 409 Social Work Capstone I | 3 |
| SW 420 Social Work Practice with Individuals, Families, & Groups I | 3 |
| SW 423 Social Work Field Placement I | 3 |
| SW 440 Social Work with Organizations | 3 |
| Senior Spring | 15 |
| PSY 410 Senior Research II | 3 |
| SW 410 Social Work Capstone II | 3 |
| SW 421 Social Work Practice with Individuals, Families, & Groups II | 3 |
| SW 424 Social Work Field Placement II | 3 |
| SW 441 Social Work with Communities | 3 |
| TOTAL CREDITS | 124/125 |

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

[†]Psychology electives are in the “Requirements—Psychology Major” section of this catalog. Select two electives from each advanced electives cluster: experimental, professional/applied, and social/developmental. For the social/developmental electives, students must select one of the following: PSY 204, 205, 206, 210, or 245.

**DUAL MAJOR IN SOCIAL WORK/
GENDER & WOMEN’S STUDIES**

Students may elect to dual major in social work and gender and women’s studies. This is accomplished by using free electives to complete requirements for the gender and women’s studies major. Students who follow the curriculum below receive a BSW degree and a BA in gender and women’s studies.

**CURRICULUM—SOCIAL WORK/GENDER AND
WOMEN’S STUDIES DUAL MAJOR** **Credits**

| | |
|---|-------------|
| Freshman Fall | 16.5 |
| ANTH 105 Cultural Anthropology | 3 |
| BIOL 101 Principles of Biological Systems w/ Lab or BIOL 107 Biology & Society | 4 |
| ENGL 101 Composition & Critical Thought | 3 |
| SW 107 Introduction to Social Work & Social Welfare | 3 |
| GWS 101 Introduction to Women’s Studies* | 3 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 15.5 |
| BIOL 102 Principles of Human Biology | 3 |
| POLS 101 American Government | 3 |
| PSY 105 Introduction to Psychology | 3 |
| SOC 105 Introduction to Sociology | 3 |
| GWS/Humanities Elective* | 3 |
| Physical Education Elective | 0.5 |
| Sophomore Fall | 15 |
| SW 330 Human Behavior & Cultural Diversity I | 3 |
| GWS/Humanities Electives* | 6 |
| GWS/Social Science Elective* | 3 |
| Math/Science Elective | 3 |
| Sophomore Spring | 15 |
| SW 331 Human Behavior & Cultural Diversity II | 3 |
| GWS/Humanities Elective* | 3 |
| GWS/Social Science Elective* | 3 |
| Math/Science Elective | 3 |
| Free Elective | 3 |
| Junior Fall | 16 |
| SW 320 Generalist Social Work Practice with Individuals, Families, & Groups I | 3 |
| SW 341 Social Work History & Policy I | 3 |
| SW 350 Social Work Research Methods I | 3 |
| GWS/Social Science Elective* | 3 |
| Free Elective | 3 |
| Junior Spring | 15 |
| GWS 355 Feminist Theories and Methodology | 3 |
| SW 321 Generalist Social Work Practice with Individuals, Families, & Groups II | 3 |
| SW 342 Social Work History & Policy II | 3 |
| SW 351 Social Work Research Methods II | 3 |
| GWS/Social Science Elective* | 3 |
| Senior Fall | 15 |
| GWS 409 Senior Capstone | 3 |
| SW 409 Social Work Capstone I | 3 |
| SW 420 Social Work Practice with Individuals, Families, & Groups I | 3 |
| SW 423 Social Work Field Placement I** | 3 |
| SW 440 Social Work with Organizations | 3 |
| Senior Spring | 15 |
| SW 410 Social Work Capstone II | 3 |
| SW 421 Social Work Practice with Individuals, Families, & Groups II | 3 |
| SW 424 Social Work Field Placement II | 3 |
| SW 441 Social Work with Communities | 3 |
| Free Elective | 3 |
| TOTAL CREDITS | 122 |

*All gender and 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—Gender and Women’s Studies Major” section of the catalog. Please refer to the “General Education Distribution Requirements” under the Center for Social Work Education section of the catalog for details.

**The dual major will fold the GWS practicum (GWS 394) into the SW practicum (SW 423), with the addition of a separate paper of at least 15 pages and regular meetings with the GWS 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 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 gain 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.

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 November 15 of the junior year a complete set of supplemental materials required by the graduate physical therapy program, including one letter of recommendation from a physical therapist, the transcript analysis form, and confirmation/documentation of at least 40 volunteer

hours in physical therapy. The letter of recommendation and documentation of volunteer hours must meet the existing standards for all applicants to the physical therapy 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, fine arts, 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 Credits

| | |
|---|-------------|
| Freshman Fall | 16.5 |
| ANTH 105 Cultural Anthropology | 3 |
| CHEM 101 Introduction to Chemistry I w/ Lab 103* | 4 |
| ENGL 101 Composition & Critical Thought* | 3 |
| MATH 117 Elementary Functions (math requirement) | 3 |
| PSY 105 Introduction to Psychology** | 3 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 18 |
| ANTH 204 Biological Physical Anthropology | 4 |
| ANTH Area Course | 3 |
| BIOL 121 Anatomy & Physiology I w/ Lab 123** | 4 |
| CHEM 102 Introduction to Chemistry II w/ Lab 104* | 4 |
| Humanities Elective 1 | 3 |
| Sophomore Fall | 17 |
| ANTH Elective | 3 |
| BIOL 122 Anatomy & Physiology II w/ Lab 124* | 4 |
| PSY 385 Statistics w/ Lab* (QR requirement) | 4 |
| PSY Elective** | 3 |
| Humanities Elective 2** | 3 |
| Sophomore Spring | 16 |
| ANTH 216, 257, or Other Archaeology | 3 |
| ANTH 382 Ethnographic Method | 3 |
| BIOL 230 Cells & Genes* | 4 |
| MATH 118 Elementary Calculus I | 3 |
| Humanities Elective 3** | 3 |
| Junior Fall | 17.5 |
| ANTH 255 Race & Racism or Other Biological ANTH | 3 |
| ANTH 409 Senior Research I | 3 |
| ANTH Elective** | 3 |
| ASC 400 Values Seminar (WE) | 3 |
| PHYS 141 College Physics I w/ Lab 143* | 5 |
| Physical Education Elective | 0.5 |
| Junior Spring | 17 |
| ANTH 410 Senior Research II | 3 |
| ANTH Elective | 3 |
| Humanities Elective 4 | 3 |
| PHYS 142 College Physics II w/ Lab 144* | 5 |
| PSY Elective | 3 |
| TOTAL CREDITS | 102 |

*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 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 Credits

| | |
|---|----------------|
| Freshman Fall | 14.5 |
| BIOL 161/165 Biological Concepts I w/ Lab | 4 |
| CHEM 145/147 General Chemistry w/ Lab I† | 4 |
| ENGL 101 Composition & Critical Thought† | 3 |
| PSY 105 Introduction to Psychology† | 3 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 14.5 |
| BIOL 162 Biological Concepts II | 4 |
| CHEM 146/148 General Chemistry w/ Lab II† | 4 |
| ENGL 102 Advanced Composition & Literature | 3 |
| HUM/SSCI Elective† | 3 |
| Physical Education Elective | 0.5 |
| Sophomore Fall | 14/15 |
| BIOL 261 Biological Concepts III | 4 |
| CHEM 255/257 Organic Chemistry w/ Lab I | 4 |
| MATH 118 Elementary Calculus, or MATH 120 Precalculus, or MATH 131 Calculus I | 3/4 |
| HUM/SSCI Elective† or BA Coursework | 3 |
| Sophomore Spring | 16/19 |
| BIOL 262 Principles of Modern Genetic Analysis | 4 |
| BIOL 299 Research Methods† | 3 |
| BA Coursework | 6 |
| HUM/SSCI Electives | 3-6 |
| Junior Fall | 19 |
| PHYS 141 College Physics I w/ Lab 143† | 5 |
| BIOL Anatomy Elective† | 4 |
| BIOL Interorganismal Elective* | 4 |
| HUM/SSCI Electives† or BA Coursework+ | 6 |
| Junior Spring | 19 |
| PHYS 142 College Physics II w/ Lab 144† | 5 |
| BIOL Cell & Molecular Elective | 4 |
| BIOL Physiology Elective† | 4 |
| HUM/SSCI Elective† or BA Coursework+ | 3 |
| ASC 400 Values Seminar | 3 |
| <i>If student does not matriculate into the graduate physical therapy program, the following courses are required to complete the degree.</i> | |
| Fourth Year Fall | 14/17 |
| BIOL Electives* | 8 |
| HUM/SSCI Elective | 3 |
| BA Coursework+ or Free Electives | 3-6 |
| Fourth Year Spring | 16 |
| BIOL Elective* | 4 |
| BA Coursework+ or Free Electives | 12 |
| TOTAL CREDITS | 127-134 |

†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: 303, 307, 308, 309, 311, 315, 317, 325, 327
- Cell & Molecular Biology: 302, 306, 310, 319, 320, 326, 405
- Interorganismal Biology: 301, 312, 313, 340/342, 401, 419

Students with a science GPA of at least 2.3 may take BIOL 499 (at least 3 credits) as one of their three unspecified biology electives.

Continued on next page.

BCH 451/453 may also be taken as an unspecified biology elective. 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.

Note: 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-.

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.

THREE-YEAR CURRICULUM: PRE-PHYSICAL THERAPY FOR BS IN BIOLOGY MAJORS Credits

| | |
|--|-------------|
| Freshman Fall | 14.5 |
| BIOL 161/165 Biological Concepts I w/ Lab | 4 |
| CHEM 145/147 General Chemistry w/ Lab I† | 4 |
| ENGL 101 Composition & Critical Thought† | 3 |
| PSY 105 Introduction to Psychology† | 3 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 14.5 |
| BIOL 162 Biological Concepts II | 4 |
| CHEM 146/148 General Chemistry w/ Lab II† | 4 |
| ENGL 102 Advanced Composition & Literature | 3 |
| HUM/SSCI Elective† | 3 |
| Physical Education Elective | 0.5 |
| Sophomore Fall | 19 |
| BIOL 261 Biological Concepts III | 4 |
| CHEM 255/257 Organic Chemistry w/ Lab I | 5 |
| MATH 131 or 141 Calculus I | 4 |
| HUM/SSCI Electives† | 6 |
| Sophomore Spring | 16 |
| BIOL 262 Principles of Modern Genetic Analysis | 4 |
| CHEM 256/258 Organic Chemistry w/ Lab II | 5 |
| MATH 132 or 142 Calculus II | 4 |
| BIOL 299 Research Methods† | 3 |
| Junior Fall | 19 |
| PHYS 141/143 College Physics w/ Lab I† | 5 |
| HUM/SSCI Electives† | 6 |
| BIOL Anatomy Elective† | 4 |
| BIOL Interorganismal Elective*† | 4 |
| Junior Spring | 19 |
| PHYS 142/144 College Physics w/ Lab II† | 5 |
| HUM/SSCI Elective† | 3 |
| BIOL Cell & Molecular Elective | 4 |
| BIOL Physiology Elective† | 4 |
| ASC 400 Values Seminar | 3 |

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 | 14 |
| BIOL Electives* | 8 |
| Free Electives | 6 |

| | |
|---------------------------------|-----------|
| Fourth Year Spring | 14 |
| BIOL Electives* | 8 |
| Free Electives | 6 |

TOTAL CREDITS 126

† 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.

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: 303, 307, 308, 309, 311, 315, 317, 325, 327
- Cell & Molecular Biology: 302, 306, 310, 314, 319, 320, 326, 405
- Interorganismal Biology: 301, 312, 313, 340/342, 401, 419

The biology elective taken in the junior year must be from the categories listed above. BCH 451/453 may also be taken as an unspecified biology elective.

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 as one of their 4 unspecified biology electives. For students with a strong interest in biology, additional advanced biology courses should be considered for free electives.

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.

THREE-YEAR CURRICULUM: PRE-PHYSICAL THERAPY FOR FINE ARTS MAJORS Credits

| | |
|---|----------------|
| Freshman Fall | 16.5 |
| AH 101 Art History I | 3 |
| ENGL 101 Composition & Critical Thought* | 3 |
| MUS 101 History & Literature of Music I | 3 |
| CHEM 101 Introduction to Chemistry I w/ Lab 103* | 4 |
| PSY 105 Introduction to Psychology* | 3 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 17.5 |
| BIOL 121 Anatomy & Physiology I w/ Lab 123* | 4 |
| CHEM 102 Introduction to Chemistry II w/ Lab 104* | 4 |
| ENGL 102 Advanced Composition & Literature | 3 |
| SOC or ANTH Elective* | 3 |
| 300-level art history | 3 |
| Physical Education Elective | 0.5 |
| Sophomore Fall | 16 |
| BIOL 122 Anatomy & Physiology II w/ Lab 124* | 4 |
| MATH 117 Elementary Functions (math requirement) | 3 |
| Methods | 3 |
| 300-level music history | 3 |
| Practicum | 3 |
| Sophomore Spring | 16 |
| BIOL 230 Cells & Genes* | 4 |
| PHIL 380 or 381 Aesthetics or Honors Aesthetics | 3 |
| 300-level art history | 3 |
| 300-level music history | 3 |
| Practicum | 3 |
| Junior Fall | 17/18 |
| ARTS 409 Senior Seminar | 3 |
| PHYS 141 College Physics I* w/ Lab 143 | 5 |
| 300-level art history* | 3 |
| 300-level music history* | 3 |
| PSY 385 Statistics w/ Lab* (QR requirement) | 3/4 |
| Junior Spring | 17 |
| ASC 400 Values Seminar | 3 |
| PHYS 142 College Physics II w/ Lab 144* | 5 |
| 300-level AH, 300-level MUS, or ENGL 325, 336, 338, 362* .. | 6 |
| PSY Elective* | 3 |
| TOTAL CREDITS | 100/101 |

*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 Credits

| | |
|---|----------------|
| Freshman Fall | 16.5 |
| PSY 105 Introduction to Psychology | 3 |
| ENGL 101 Composition & Critical Thought* | 3 |
| Humanities Elective 1 | 3 |
| CHEM 101 Introduction to Chemistry I w/ Lab 103* | 4 |
| MATH 117 Elementary Functions (math requirement) | 3 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 17 |
| PSY Advanced Electives 1 & 2† | 6 |
| CHEM 102 Introduction to Chemistry II w/ Lab 104* | 4 |
| BIOL 121/123 Anatomy & Physiology I w/ Lab 123* | 4 |
| Humanities Elective 2 | 3 |
| Sophomore Fall | 17 |
| ANTH 105 Cultural Anthropology* | 3 |
| or SOC 105 Introduction to Sociology* | 3 |
| BIOL 122 Anatomy & Physiology II w/ Lab 124* | 4 |
| PSY 385 Statistics w/ Lab* (QR requirement) | 3/4 |
| PSY Advanced Electives 3 & 4† | 6 |
| Sophomore Spring | 17 |
| PSY Advanced Elective 5†,** | 3 |
| PSY 387 Research Design w/ Lab | 4 |
| MATH 118 Elementary Calculus I | 3 |
| BIOL 230 Cells & Genes* | 4 |
| Humanities Elective 3** | 3 |
| Junior Fall | 17.5 |
| PHYS 141 College Physics I* w/ Lab 143 | 5 |
| PSY 409 Senior Research | 3 |
| PSY 377 or 330 History & Systems | 3 |
| PSY Advanced Elective 6†,** | 3 |
| Humanities Elective 4** | 3 |
| Physical Education Elective | 0.5 |
| Junior Spring | 17 |
| PHYS 142 College Physics II w/ Lab 144* | 5 |
| PSY 410 Senior Research II | 3 |
| ASC 400 Values Seminar | 3 |
| Electives | 6 |
| TOTAL CREDITS | 101/102 |

*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 **Credits**

| | |
|---|-------------|
| Freshman Fall | 16.5 |
| CHEM 101 Introduction to Chemistry I w/ Lab 103* | 4 |
| PSY 105 Introduction to Psychology* | 3 |
| SOC 105 Introduction to Sociology | 3 |
| ENGL 101 Composition & Critical Thought* | 3 |
| MATH 117 Elementary Functions (math requirement) | 3 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 17.5 |
| CHEM 102 Introduction to Chemistry II w/ Lab 104* | 4 |
| BIOL 121 Anatomy & Physiology I w/ Lab 123* | 4 |
| Sociology Advanced Electives | 6 |
| Humanities Elective 1 [†] | 3 |
| Physical Education Elective | 0.5 |
| Sophomore Fall | 17 |
| BIOL 122 Anatomy & Physiology II w/ Lab 124* | 4 |
| PSY 385 Statistics w/ Lab* (QR requirement) | 4 |
| Humanities Electives 2 & 3* [†] | 6 |
| Sociology Advanced Elective | 3 |
| Sophomore Spring | 16 |
| BIOL 230 Cells & Genes* | 4 |
| MATH 118 Elementary Calculus I | 3 |
| SOC 382 Research Design | 3 |
| SOC 355 Social Theory | 3 |
| Psychology Elective* | 3 |
| Junior Fall | 17 |
| PHYS 141 College Physics I w/ Lab 143* | 5 |
| SOC 409 Senior Research I | 3 |
| Humanities Elective 4* [†] | 3 |
| ASC 400 Values Seminar | 3 |
| Sociology Advanced Elective* | 3 |
| Junior Spring | 17 |
| PHYS 142 College Physics II w/ Lab 144* | 5 |
| SOC 405 Sociology Seminar | 3 |
| SOC 410 Senior Research II | 3 |
| Psychology Elective | 3 |
| Sociology Advanced Elective | 3 |
| TOTAL CREDITS | 101 |

*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 sociology 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.

FOUR-PLUS-THREE GUARANTEED PROGRAM

In addition to the three-plus-three program, Widener University offers the 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, fine arts, psychology, and sociology include the prerequisite coursework to be considered for matriculation in 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 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" below.

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 November 15 of the senior year a complete set of supplemental materials required by the graduate physical therapy program, including one letter of recommendation from a physical therapist, the transcript analysis form, and confirmation/documentation of at least 40 volunteer hours in physical therapy. The letter of recommendation and documentation of volunteer hours must meet the existing standards for all applicants to the physical therapy 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 program may apply for admission to the graduate physical therapy program in the regular admissions cycle. 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. As of July 15, 2011, all applicants that are not in the Widener guaranteed programs must apply via the Physical Therapy Centralized Application Service (PTCAS). Review the physical therapy website for details, www.widener.edu/ipte.

FOUR-YEAR CURRICULUM: PRE-PHYSICAL THERAPY FOR ANTHROPOLOGY MAJORS Credits

| | |
|---|------------------|
| Freshman Fall | 13.5–16.5 |
| ANTH 105 Cultural Anthropology | 3 |
| CHEM 101 Introduction to Chemistry I w/ Lab 103* | 4 |
| ENGL 101 Composition & Critical Thought* | 3 |
| FRS 101 (optional) or MATH 101 (if needed) | 1/3 |
| Humanities Elective 1 | 3 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 13.5 |
| ANTH 204 Physical Anthropology | 3 |
| CHEM 102 Introduction to Chemistry II w/ Lab 104* | 4 |
| PSY 105 Introduction to Psychology | 3 |
| Humanities Elective 2 | 3 |
| Physical Education Elective | 0.5 |
| Sophomore Fall | 15 |
| MATH 117 Elementary Functions (math requirement) | 3 |
| ANTH Area Course | 3 |
| ANTH Elective 1 | 3 |
| PSY Elective 1** | 3 |
| Free Elective | 3 |
| Sophomore Spring | 16 |
| ANTH 216, 257, or Other Archaeology | 3 |
| BIOL 121 Anatomy & Physiology I w/ Lab 123* | 4 |
| MATH 118 Elementary Calculus I | 3 |
| Humanities Elective 3 (WE)** | 3 |
| Free Elective | 3 |
| Junior Fall | 17 |
| ANTH 255 Race & Racism | 3 |
| BIOL 122 Anatomy & Physiology II w/ Lab 124* | 4 |
| PSY 385 Statistics w/ Lab* (QR requirement) | 4 |
| PSY Elective 2** | 3 |
| ANTH Elective 2** | 3 |
| Junior Spring | 16 |
| ANTH 382 Ethnographic Method (WE) | 3 |
| BIOL 230 Cells & Genes* | 4 |
| Humanities Elective 4** | 3 |
| Free Electives** | 6 |
| Senior Fall | 17 |
| ANTH 409 Senior Research I | 3 |
| ASC 400 Values Seminar (WE) | 3 |
| PHYS 141 College Physics I w/ Lab 143* | 5 |
| ANTH Elective 3* | 3 |
| Free Elective** | 3 |
| Senior Spring | 14 |
| ANTH 410 Senior Research II | 3 |
| PHYS 142 College Physics II w/ Lab 144* | 5 |
| Humanities Elective (300-Level, WE) | 3 |
| Free Elective** | 3 |

TOTAL MINIMUM CREDITS TO GRADUATE 123

*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 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 Credits

| | |
|---|--------------|
| Freshman Fall | 14.5 |
| BIOL 161/165 Biological Concepts I w/ Lab | 4 |
| CHEM 145/147 General Chemistry w/ Lab I† | 4 |
| ENGL 101 Composition & Critical Thought | 3 |
| HUM/SSCI Elective†† | 3 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 14.5 |
| BIOL 162 Biological Concepts II | 4 |
| CHEM 146/148 General Chemistry w/ Lab II† | 4 |
| ENGL 102 Advanced Composition & Literature† | 3 |
| HUM/SSCI Elective†† | 3 |
| Physical Education Elective | 0.5 |
| Sophomore Fall | 15/16 |
| BIOL 261 Biological Concepts III | 4 |
| CHEM 255/257 Organic Chemistry w/ Lab I | 5 |
| MATH 118 Elementary Calculus, or MATH 120 Precalculus, or MATH 131 Calculus I | 3/4 |
| HUM/SSCI Elective†† | 3 |
| Sophomore Spring | 16-19 |
| BIOL 262 Principles of Modern Genetic Analysis | 4 |
| BIOL 299 Research Methods† | 3 |
| BA Coursework† | 6-9 |
| HUM/SSCI Elective†† | 3 |
| Junior Fall | 15/16 |
| PHYS 141/143 College Physics w/ Lab I† | 5 |
| HUM/SSCI Elective†† or BA Coursework† | 3 |
| BIOL Anatomy Elective† | 4 |
| BIOL Elective or Free Elective*,†† | 3/4 |
| Junior Spring | 15/16 |
| PHYS 142/144 College Physics w/ Lab II† | 5 |
| HUM/SSCI Elective†† or BA Coursework† | 3 |
| BIOL Physiology Elective† | 4 |
| BIOL Elective or Free Elective*,†† | 3/4 |
| Senior Fall | 15/18 |
| BIOL Electives, Free Electives*,††, or BA Coursework† | 12/9 |
| HUM/SSCI Electives†† | 6 |
| Senior Spring | 15/18 |
| ASC 400 Values Seminar (WE) | 3 |
| BIOL Electives, Free Electives*,††, or BA Coursework† | 12/9 |
| Free Elective | 3 |

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:

- Organismal Biology: 303, 307, 308, 309, 311, 315, 317, 325, 327
- Cell & Molecular Biology: 302, 306, 310, 314, 319, 320, 326, 405
- Interorganismal Biology: 301, 312, 313, 340/342, 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 elective.

† 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 Credits

| | |
|---|----------------|
| Freshman Fall | 14.5 |
| BIOL 161/165 Biological Concepts I w/ Lab | 4 |
| CHEM 145/147 General Chemistry w/ Lab I [†] | 4 |
| ENGL 101 Composition & Critical Thought | 3 |
| HUM/SSCI Elective ^{††} | 3 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 14.5 |
| BIOL 162 Biological Concepts II | 4 |
| CHEM 146/148 General Chemistry w/ Lab II [†] | 4 |
| ENGL 102 Advanced Composition & Literature [†] | 3 |
| HUM/SSCI Elective ^{††} | 3 |
| Physical Education Elective | 0.5 |
| Sophomore Fall | 16 |
| BIOL 261 Biological Concepts III | 4 |
| CHEM 255/257 Organic Chemistry w/ Lab I | 5 |
| MATH 131 or 141 Calculus I | 4 |
| HUM/SSCI Elective ^{††} | 3 |
| Sophomore Spring | 16 |
| BIOL 262 Principles of Modern Genetic Analysis | 4 |
| BIOL 299 Research Methods [†] | 3 |
| CHEM 256/258 Organic Chemistry w/ Lab II | 5 |
| MATH 132 or 142 Calculus II | 4 |
| Junior Fall | 15/16 |
| PHYS 141/143 College Physics w/ Lab I [†] | 5 |
| HUM/SSCI Elective ^{††} | 3 |
| BIOL Anatomy Elective [†] | 4 |
| BIOL Elective or Free Elective ^{*,††} | 3/4 |
| Junior Spring | 15/16 |
| PHYS 142/144 College Physics w/ Lab II [†] | 5 |
| HUM/SSCI Electives ^{††} | 3 |
| BIOL Physiology Elective [†] | 4 |
| BIOL Elective or Free Elective ^{*,††} | 3/4 |
| Senior Fall | 15/18 |
| BIOL Electives or Free Electives ^{*,††} | 12/9 |
| HUM/SSCI Electives ^{††} | 6 |
| Senior Spring | 15/18 |
| ASC 400 Values Seminar (WE) | 3 |
| BIOL Electives or Free Electives [*] | 12/9 |
| Free Elective | 3 |
| 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:

- Organismal Biology: 303, 307, 308, 309, 311, 315, 317, 325, 327
- Cell & Molecular Biology: 302, 306, 310, 314, 319, 320, 326, 405
- Interorganismal Biology: 301, 312, 313, 340/342, 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 elective.

[†]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 FINE ARTS MAJORS Credits

| | |
|---|----------------|
| Freshman Fall | 16.5 |
| AH 101 or MUS 101 | 3 |
| CHEM 101 Introduction to Chemistry I w/ Lab 103* | 4 |
| ENGL 101 Composition & Critical Thought* | 3 |
| PSY 105 Introduction to Psychology* | 3 |
| Elective | 3 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 14.5 |
| BIOL 121 Anatomy & Physiology I w/ Lab 123* | 4 |
| CHEM 102 Introduction to Chemistry II w/ Lab 104* | 4 |
| ENGL 102 Advanced Composition & Literature | 3 |
| Humanities Requirement | 3 |
| Physical Education Elective | 0.5 |
| Sophomore Fall | 16 |
| AH 101 or MUS 101 | 3 |
| BIOL 122 Anatomy & Physiology II w/ Lab 124* | 4 |
| MATH 117 Elementary Functions (math requirement) | 3 |
| Methods | 3 |
| Practicum | 3 |
| Sophomore Spring | 16 |
| BIOL 230 Cells & Genes* | 4 |
| Humanities Requirements | 6 |
| PSY Elective* | 3 |
| Practicum | 3 |
| Junior Fall | 15/16 |
| PHIL 380 or 381 Aesthetics or Honors Aesthetics | 3 |
| 300-level AH, 300-level MUS, or ENGL 325, 336, 338, 362 ... | 3 |
| 300-level Art History | 3 |
| 300-level Music History | 3 |
| PSY 385 Statistics w/ Lab* (QR requirement) | 3/4 |
| Junior Spring | 15 |
| 300-level AH, 300-level MUS, or ENGL 325, 336, 338, 362 ... | 3 |
| 300-level Art History | 3 |
| 300-level Music History | 3 |
| SOC/ANTH Elective* | 3 |
| Elective | 3 |
| Senior Fall | 14 |
| ARTS 409 Senior Seminar | 3 |
| PHYS 141 College Physics I* w/ Lab 143 | 5 |
| 300-level Art History* | 3 |
| 300-level Music History* | 3 |
| Senior Spring | 14 |
| ASC 400 Values Seminar | 3 |
| PHYS 142 College Physics II w/ Lab 144* | 5 |
| 300-level Humanities Electives | 6 |
| TOTAL CREDITS | 121/122 |

*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.

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 PSYCHOLOGY MAJORS Credits

| | |
|---|------------------|
| Freshman Fall | 13.5–16.5 |
| ANTH 105 Cultural Anthropology | |
| or SOC 105 Introduction to Sociology** | 3 |
| CHEM 101 Introduction to Chemistry I w/ Lab 103* | 4 |
| ENGL 101 Composition & Critical Thought* | 3 |
| FRS 101 (optional) or MATH 101 (if necessary) | 1/3 |
| PSY 105 Introduction to Psychology | 3 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 13.5 |
| CHEM 102 Introduction to Chemistry II w/ Lab 104* | 4 |
| MATH 117 Elementary Functions (math requirement) | 3 |
| PSY Advanced Elective 1 | 3 |
| Humanities Elective 1 | 3 |
| Physical Education Elective | 0.5 |
| Sophomore Fall | 16 |
| MATH 118 Elementary Calculus I | 3 |
| Humanities Elective 2 | 3 |
| PSY 385 Statistics w/ Lab* (QR requirement) | 4 |
| PSY Advanced Elective 2 | 3 |
| Free Elective** | 3 |
| Sophomore Spring | 16 |
| BIOL 121 Anatomy & Physiology I w/ Lab 123* | 4 |
| Humanities Elective 3 (WE)** | 3 |
| PSY Advanced Electives 3 & 4** | 6 |
| Free Elective | 3 |
| Junior Fall | 16 |
| BIOL 122 Anatomy & Physiology II w/ Lab 124* | 4 |
| PSY Advanced Electives 5 & 6** | 6 |
| Free Electives | 6 |
| Junior Spring | 17 |
| ASC 400 Values Seminar (WE) | 3 |
| BIOL 230 Cells & Genes* | 4 |
| PSY 387 Research Design w/ Lab | 4 |
| Free Electives** | 6 |
| Senior Fall | 17 |
| PHYS 141 College Physics I w/ Lab 143* | 5 |
| PSY 377 History & Systems or PSY 330** | 3 |
| PSY 409 Senior Research | 3 |
| Humanities Elective 4 (300-Level, WE)** | 3 |
| Free Elective** | 3 |
| Senior Spring | 14 |
| PHYS 142 College Physics II w/ Lab 144* | 5 |
| PSY 410 Senior Research II | 3 |
| Free Electives | 6 |
| MINIMUM CREDITS TO GRADUATE | 121 |

*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.

FOUR-YEAR CURRICULUM: PRE-PHYSICAL THERAPY FOR SOCIOLOGY MAJORS Credits

| | |
|---|------------------|
| Freshman Fall | 13.5–14.5 |
| CHEM 101/103 Introduction to Chemistry I w/ Lab* | 4 |
| ENGL 101 Composition & Critical Thought* | 3 |
| FRS 101 Freshman Seminar (optional) | 1 |
| SOC 105 Introduction to Sociology | 3 |
| Humanities Elective 1 | 3 |
| Physical Education Elective | 0.5 |
| Freshman Spring | 13.5 |
| CHEM 102/104 Introduction to Chemistry II w/ Lab* | 4 |
| PSY 105 Introduction to Psychology | 3 |
| Humanities Elective 2 | 3 |
| Sociology Elective | 3 |
| Physical Education Elective | 0.5 |
| Sophomore Fall | 15 |
| MATH 117 Elementary Functions (math requirement) | 3 |
| Psychology Elective** | 3 |
| Sociology Elective | 3 |
| Free Electives | 6 |
| Sophomore Spring | 16 |
| BIOL 121/123 Anatomy & Physiology I w/ Lab* | 4 |
| MATH 118 Elementary Calculus I | 3 |
| Humanities Elective 3** | 3 |
| Sociology Elective | 3 |
| Free Elective | 3 |
| Junior Fall | 17 |
| BIOL 122/124 Anatomy & Physiology II w/ Lab* | 4 |
| PSY 385 Statistics w/ Lab* (QR requirement) | 4 |
| SOC 355 Social Theory | 3 |
| Sociology Elective** | 3 |
| Free Elective | 3 |
| Junior Spring | 16 |
| BIOL 230 Cells & Genes* | 4 |
| SOC 382 | 3 |
| Humanities Elective 4** | 3 |
| Psychology Elective** | 3 |
| Sociology Advanced Elective** | 3 |
| Senior Fall | 17 |
| ASC 400 Values Seminar (WE) | 3 |
| PHYS 141/143 College Physics I w/ Lab* | 5 |
| SOC 409 Senior Research I | 3 |
| Free Electives** | 6 |
| Senior Spring | 14 |
| HUM 300 (WE) | 3 |
| PHYS 142/144 College Physics II w/ Lab* | 5 |
| SOC 405 Sociology Seminar | 3 |
| SOC 410 Senior Research II | 3 |
| MINIMUM CREDITS TO GRADUATE | 121 |

*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 sociology courses completed prior to application to the graduate program. Students must complete all prerequisites with a minimum grade of B-.

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

VISION

The Widener University School of Nursing (SON) aspires to be a preeminent metropolitan school of nursing recognized for developing clinically prepared, scientifically oriented, technologically proficient, professional nurses who provide leadership as clinicians, educators, scholars, and researchers to transform the health and quality of life of diverse communities.

MISSION

As a leading, comprehensive school of nursing, *we achieve* our mission by creating a learning environment where curricula are connected to societal health issues through diverse community engagement. *We lead* by providing a unique professional nursing education in a challenging, scholarly, and supportive learning community. *We engage* our students through interactive teaching, professional role modeling, active scholarship, and experiential learning. *We inspire* our students to be professionals who demonstrate leadership in nursing practice, education, scholarship, and research throughout the global community. *We contribute* to the health and well-being of the communities we serve.

GOALS

- Foster a SON community whose members are diverse and where our students are prepared for living and serving in a pluralistic and ever-changing world.
- Achieve an unparalleled academic environment in the SON 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 by nursing students.
- Promote the SON as a school known for offering programs that use experiential and collaborative learning, mentoring, and engaged teaching and that emphasize the linkage between the curricula and societal needs.
- Expand and diversify the SON's financial resources and manage its assets in an efficient and effective manner.
- Make the SON an employer of first choice and a place that attracts talented people at all levels to work or volunteer to fulfill the mission of the SON.
- 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 nursing student has common educational experiences involving civic engagement and experiential learning.
- Foster an environment that encourages innovation in teaching, scholarship, and program development.
- Raise the profile of the SON among metropolitan nursing leaders, the general public, and among the national professional nursing and higher education communities.
- Optimize the SON's enrollment to achieve a vital university community at both the undergraduate and graduate levels.

- Address the metropolitan region's most pressing health concerns and enhance our program offerings to respond to the needs of our communities.
- Actively promote the development of leadership skills and provide opportunities for leadership experiences for nursing students, faculty, and alumni so that they may demonstrate civic and professional leadership.
- Ensure academic excellence by maintaining the SON's commitment to academic freedom and by upholding faculty governance, especially in matters pertaining to pedagogy, curriculum, and scholarship.

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 program prepares graduates to function as generalists in multiple settings. The program equips graduates to assume professional responsibility for making knowledgeable, collaborative judgments leading to nursing diagnoses and interventions. As members of a learned profession, nursing graduates accept personal and professional responsibility and exercise leadership within their communities by acting as consumer advocates and educators in promoting health.

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)

Role

Nursing education prepares its graduates to assume the role of the professional nurse as a generalist at the baccalaureate level and advanced practice nurse or nurse scholar at the graduate level. Nurses are prepared to be providers, designers, managers, and coordinators of care, as well as active members of the nursing profession within a global community. Nurses 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, 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 evidence-based outcomes to guide clinical decision making. 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 delegate and prioritize interventions, promote health literacy, and educate patients/clients in developing self-care to promote, maintain, and restore health. 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 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.

SCHOOL OF NURSING UNDERGRADUATE HANDBOOK

Widener University general policies regarding academic admission, progression, graduation, student rights/responsibilities, and student organizations are found in this catalog and in the *Widener University Student Handbook*. Policies specific to the School of Nursing, including academic/clinical requirements, dismissal, readmission, appeal, and other such matters, are found in the *School of Nursing Undergraduate Student Handbook*, which is available on the School of Nursing Undergraduate website. All students are responsible for familiarizing themselves thoroughly with university and School of Nursing policies and for complying with such policies.

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 curriculum plan can be found in the *School of Nursing Undergraduate Student Handbook*, as well as in this catalog.

UNDERGRADUATE LEARNING OUTCOMES

- Synthesize theoretical concepts and constructs from the humanities, social sciences, mathematical, natural, and physical sciences into nursing practice.
- Use individual, organizational, and systems leadership and management theories to interact constructively and ethically to influence and assure effective, evidence-based, safe, quality outcomes in the delivery of nursing care to human beings in an ever-changing world and global society.
- Apply methods of scholarly inquiry and interpretation to translate best current evidence into nursing practice.
- Implement evidence-based and theoretically sound nursing care by collaborating with other health care team professionals to promote optimal health for individuals and populations.
- Use technology to facilitate care to provide safe, ethical, and effective clinical decision making for individuals, populations, and health care workers.
- Integrate into practice a basic knowledge of health care policy, finance, and regulatory environments, including local, national, and global trends with system cost factors and the impact on individuals and populations.
- Integrate into practice a basic knowledge of the impact of socio-cultural, economic, legal, and political factors influencing health care delivery and practice.
- Use effective communication techniques to produce positive interprofessional and intraprofessional working relationships.
- Demonstrate appropriate team building strategies when working with interprofessional and intraprofessional teams.
- Use health promotion along with disease and injury prevention strategies to maximize the health of individuals and populations across the lifespan.
- Advocate for social justice with a commitment to the health of vulnerable populations and the elimination of health disparities.
- Assume accountability for professional standards of moral, ethical, and legal conduct through self-reflection of attitudes, beliefs, and values as they relate to decision making, advocacy, collaboration, and social responsibility.
- Foster personal and professional growth and development through self-care and lifelong learning.
- Perform developmentally and culturally focused patient and family assessments that include a comprehensive appraisal of physical, behavioral, socioeconomic, and environmental parameters.
- Deliver patient-centered education that reflects consideration for patient developmental level, cultural background, literacy, and family system.
- Recognize the relationships of genetics and genomics to health, prevention, screening, diagnostics, prognostics, selection of treatment, and monitoring of treatment effectiveness.
- Apply effective communication in interactions with patient and patient's support network.
- Demonstrate in clinical practice the application of sound principles of psychomotor skills that reflect efficient, safe, and compassionate patient care.

ADMISSION TO THE BSN PROGRAM

Incoming freshmen must have:

- Completed the application to Widener University specifying a major in nursing.
- SAT Score of 900 or higher (combined verbal and math).
- High school GPA of 2.85 or higher (on a 4.0 scale).

In addition, international students need passing TOEFL scores or equivalent: IBT scores of 79 (total score)/26 (spoken) or paper-based exam scores of 550/55 (spoken).*

Widener students who are transferring to nursing from another major must have:

- 2.75 or higher cumulative GPA at Widener.
- Grade of C or higher in CHEM 105/106.
- Grade of C or higher in all courses required for the nursing curriculum.

In addition, international students need passing TOEFL scores or equivalent: IBT scores of 79 (total score)/26 (spoken) or paper-based exam scores of 550/55 (spoken).*

Students who are transferring to Widener from another college or university must have:

- Completed the application to Widener University specifying a major in nursing.
- 3.0 or higher cumulative GPA in previous course work with a pattern of academic success in science courses.
- Letter of good standing from the dean/director/chair of the nursing program for students whose transcript contains evidence of nursing courses.

In addition, international students need passing TOEFL scores or equivalent: IBT scores of 79 (total score)/26 (spoken) or paper-based exam scores of 550/55 (spoken).*

*All non-native English speaking applicants born outside the United States (international applicants, immigrants to the United States, and U.S. permanent residents), including students who have completed English as a Second Language course(s), are required to take the TOEFL examination. Results from the TOEFL taken up to two years prior to admission will be accepted.

CURRICULUM—NURSING:

| Full-Time BSN Program | Credits |
|---|-------------|
| Freshman Fall | 14.5 |
| CHEM 105/106 General, Organic, & Biochemistry w/ Lab* | 4 |
| ENGL 101 Composition & Critical Thought** | 3 |
| PSY 105 Introduction to Psychology | 3 |
| Freshman Seminar | 1 |
| Humanities Elective (F/S) | 3 |
| Physical Education Elective* | 0.5 |
| Freshman Spring | 16.5 |
| BIOL 121/123 Anatomy & Physiology I (Includes Lab) | 4 |
| ENGL 102 Advanced Composition & Literature (W)** | 3 |
| SOC 105 Introduction to Sociology | 3 |
| NURS 125 Introduction to Nursing (W, S) | 3 |
| Social Science 100-Level Elective (F/S) | 3 |
| Physical Education Elective* | 0.5 |
| Sophomore Fall | 16 |
| BIOL 122/124 Anatomy & Physiology II (Includes Lab) | 4 |
| NURS 201 Introduction to Informatics I | 1 |
| NURS 232 Research Design | 2 |
| PHIL 350 Ethics (F/S) | 3 |
| Sociology or Psychology 200-Level Elective (F/S) | 3 |
| Humanities Elective (F/S) | 3 |
| Sophomore Spring | 16 |
| BIOL 219/220 Microbiology w/ Lab | 4 |
| NURS 205 Pharmacokinetics & Medication Administration (L) | 3 |
| NURS 216 Nutrition in Health Care (F/S) | 3 |
| NURS 261 Health Assessment (L) | 3 |
| PSY 381 Statistical Methods (F/S) | 3 |

All freshman and sophomore year courses must be completed by the end of sophomore year summer in order to enter the junior year courses. Students must have a minimum cumulative average of 3.0 or higher and earn a C or higher in all required and elective courses; a C- is not acceptable.

| | |
|--|-----------|
| Junior Fall | 16 |
| NURS 301 Introduction to Informatics II | 1 |
| NURS 305 Pathopharmacology I | 2 |
| NURS 330 Medical Surgical Nursing I (C) | 5 |
| NURS 333 Family Foc. Maternal-Newborn Care (C, F/S) | 5 |
| NURS 340 Introduction to Gerontological Nursing (S) | 2 |
| NURS 374 Knowledge Synthesis for Nursing Practice I | 1 |
| Junior Spring | 16 |
| NURS 306 Pathopharmacology II | 2 |
| NURS 331 Medical Surgical Nursing II (C) | 5 |
| NURS 332 Evidence-Based Nursing Practice (W) | 3 |
| NURS 334 Family Focused Care of Children (C, F/S) | 5 |
| NURS 375 Knowledge Synthesis for Nursing Practice II | 1 |
| Senior Fall | 16 |
| NURS 405 Pathopharmacology III | 2 |
| NURS 432 Medical Surgical Nursing III (C) | 5 |
| NURS 465 Psychiatric/Mental Health Nurs. (C, F/S) | 5 |
| NURS 474 Knowledge Synthesis for Practice III | 1 |
| Nursing Elective (W, S, F/S) | 3 |
| Senior Spring | 13 |
| NURS 445 Nursing Leadership (C) | 5 |
| NURS 485 Population Health (C, F/S) | 5 |
| NURS 475 Knowledge Synthesis for Practice IV | 3 |

TOTAL CREDITS **124**

*Math 101 is a prerequisite for chemistry.
 **Students in the university's Honors Program take ENGL 103 plus one additional elective in lieu of ENGL 101 & 102.
 *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. They may graduate with 122 or 123 credits. Incoming transfer students may be exempt from Freshman Seminar.
 (C) = a clinical course and (L) = a nursing laboratory course, with both classroom and clinical/laboratory experiences. Each credit is equivalent to one hour of class each week, or 2 hours of laboratory and 3 hours of clinical.
 (W) = writing enriched. (S) = service learning. (F/S) = can be taken in fall or spring.

SPECIAL ACADEMIC POLICIES

Lower Division Policies

- Nursing prerequisites and electives may be repeated only once following either a grade of less than 'C' or withdrawal. The repeat attempt requires written permission from the school dean or dean's designee on the "Repetition of Course" form. If, on the repeat attempt, the student does not complete the course with a minimal grade of C or withdraws from the course, the student will be dismissed from the School of Nursing BSN program.
- BIOL 121 and 122 or corresponding transfer courses must be successfully completed not more than five years prior to entry to upper division (junior year).
- Students enrolled at Widener in a major other than nursing who wish to be considered for the school of nursing BSN program must fulfill the following requirements: (1) successfully complete CHEM 105 and 106 with a grade of C or higher, (2) earn a grade of C or higher in any courses that are part of the required nursing curriculum, and (3) achieve a cumulative GPA of 2.75 in their present major (see "Change in Curriculum" section of current catalog). A cumulative GPA of 3.0 must be attained for entry into junior level nursing courses.

- Matriculated students may take a maximum of nine semester credits off campus only with special permission of the School of Nursing assistant dean or director of the BSN program and the university's associate provost. A "Course Transfer Authorization" form must be completed for all courses taken off campus.

Progression to Upper Division

Students must achieve a Widener University cumulative GPA of 3.0 and a grade of 'C' or higher on all lower division prerequisite courses listed for the freshman and sophomore years, including those courses meeting elective requirements in the nursing curriculum. Students must demonstrate compliance with all clinical requirements as specified in the *School of Nursing Undergraduate Student Handbook*.

Nursing Progression Policies

- Theory grades are calculated per the course syllabus and reported as a letter grade. Students are required to earn a grade of C or higher in the theory component of all nursing courses, including clinical and non-clinical required courses in order to successfully complete or pass the course. The minimum numeric score required to earn a grade of C in any nursing course is 75.
- Laboratory or clinical grades are evaluated per the course syllabus and reported as "pass" or "fail." A grade of "pass" in the clinical/laboratory component of a course is required to successfully complete, or pass, the course.
- Students failing either the classroom or clinical component of a nursing course must repeat the course in its entirety, including classroom and clinical components.
- Students who withdraw from a nursing course with corequisite requirements before midterm must withdraw from the corequisite courses as well. For progression purposes, withdrawal from one course and its corequisites will be considered as one withdrawal.
- Students are permitted only one unsuccessful attempt to complete a nursing course throughout the program. Both withdrawals and failures count as an attempt.
 - A grade of less than C in the same nursing course twice will result in dismissal from the nursing program.
 - A withdrawal from a nursing course and a grade of less than C on a subsequent attempt after a previous withdrawal from the same course will result in dismissal.
 - A grade of less than C in any nursing course with subsequent withdrawal from the same course on the second attempt will result in dismissal from the nursing program.
 - A grade of less than C in any two nursing courses will result in dismissal from the nursing program.
 - A withdrawal from a nursing course followed by a subsequent withdrawal from any other nursing course will result in dismissal from the nursing program.
 - A withdrawal from a nursing course, followed by a subsequent failure of any nursing course will result in dismissal from the nursing program.
- Students who are dismissed from the School of Nursing will follow the policy as outlined in the *School of Nursing Undergraduate Handbook*, available online.

CURRICULUM—NURSING: Full-Time BSN Program for Students Matriculated Prior to Fall 2010 & Transfer Students beginning Clinical prior to Fall 2012

| | Credits |
|--|-------------|
| Freshman Fall | 13.5 |
| CHEM 105/106 General, Organic, & Biochemistry w/ Lab | 4 |
| ENGL 101 Composition & Critical Thought* | 3 |
| PSY 105 Introduction to Psychology | 3 |
| History or Art History | 3 |
| Freshman Seminar | (1) |
| Physical Education Elective** | 0.5 |

| | |
|--|-------------|
| Freshman Spring | 16.5 |
| ENGL 102 Advanced Composition & Literature (W)* | 3 |
| SOC 105 Introduction to Sociology | 3 |
| BIOL 121/123 Anatomy & Physiology I (Includes Lab) | 4 |
| Humanities Elective† | 3 |
| NURS 125 Introduction to Nursing (W, S) | 3 |
| Physical Education Elective** | 0.5 |

| | |
|---|-----------|
| Sophomore Fall | 14 |
| BIOL 122/124 Anatomy & Physiology II (Includes Lab) | 4 |
| PSY 211 Growth & Development I | 3 |
| PSY 381 Statistical Methods*** | 3 |
| NURS 216 Nutrition in Health Care (F/S) | 3 |
| NURS 230 Calculating with Confidence†† | 1 |

| | |
|---|-----------|
| Sophomore Spring | 16 |
| BIOL 219/220 Microbiology w/ Lab | 4 |
| SOC 215 The Family | 3 |
| Humanities 300-Level Elective* | 3 |
| Elective | 3 |
| NURS 226/227 Foundations of Nursing Practice w/ Lab†† | 3 |

All freshman and sophomore year courses must be completed by the end of sophomore summer in order to enter the junior year courses. Students must have a minimum cumulative average of 2.75 or higher to progress into junior year.

| | |
|---|-----------|
| Junior Fall | 16 |
| NURS 350 Care of the Adult (C)†† | 9 |
| NURS 351/353 Health Assessment w/ Lab | 3 |
| NURS 352 Pathophysiology & Pharmacology | 4 |

| | |
|--|-----------|
| Junior Spring | 17 |
| NURS 360 Care of Childbearing Family (C, F/S) | 6 |
| NURS 363 Research in Nursing Practice (writing enriched) | 3 |
| NURS 364 Psychiatric Mental Health Nursing | 5 |
| Elective | 3 |

| | |
|--|-----------|
| Senior Fall | 16 |
| NURS 361 Care of Childrearing Family (C, F/S) | 6 |
| NURS 450 Care of the Community (C) | 3 |
| NURS 452 Concepts & Roles in Professional Nursing (W, S) | 3 |
| NURS 471 Critical Thinking & Clinical Decision Making I | 1 |
| Elective | 3 |

| | |
|--|-----------|
| Senior Spring | 15 |
| NURS 460 Home Health Care (C) | 3 |
| NURS 462 Care of the Adult with Complex Problems (C) | 7 |
| NURS 472 Critical Thinking & Clinical Decision Making II | 1 |
| NURS 490 Practicum (C)††† | 4 |

TOTAL CREDITS 124

*Students in the university's Honors Program take ENGL 103 plus one additional elective in lieu of ENGL 101 & 102.

**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.

***PSY 381 or another 3-credit statistics course may be accepted if already on Widener transcript.

†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 course descriptions in this catalog.

††No more than two semesters may elapse between taking NURS 226 and NURS 230, and then NURS 350.

†††NURS 460 and NURS 462 must be successfully completed before attempting NURS 490.

(C) = clinical course. (W) = writing enriched. (S) = service learning. (F/S) = can be taken in fall or spring.

**CURRICULUM—NURSING: Part-Time BSN Program
for Students Entering Clinical Courses Prior to Fall 2012 Credits**

| | |
|---|----------------|
| Semester 1—Spring/Summer | 10 |
| NURS 125 Introduction to Nursing (W) | 3 |
| NURS 216 Nutrition in Health Care | 3 |
| NURS 226/227 Foundations of Nursing Practice* | 3 |
| NURS 230 Calculating with Confidence* | 1 |
| <i>Students must have all prerequisite courses completed prior to entering their junior year.</i> | |
| Semester 2—Fall (1st-Year Junior) | 6 |
| NURS 351 Health Assessment | 3 |
| NURS 352 Pathophysiology/Pharmacology | 3 |
| Semester 3—Spring | 9 |
| NURS 350 Care of the Adult (C)* | 9 |
| Semester 4—Summer (2nd-Year Junior) | 8 |
| NURS 364 Psychiatric/Mental Health (C) | 5 |
| NURS 363 Research in Nursing Practice (W) | 3 |
| Semester 5—Fall | 6 |
| NURS 360 Care of the Childbearing Family (C) | 6 |
| Semester 6—Spring (Senior) | 6 |
| NURS 450 Care of the Community (C) | 3 |
| NURS 452 Concepts & Roles in Professional Nursing (W, S) | 3 |
| Semester 7—Summer | 6 |
| NURS 361 Care of the Childbearing Family (C) | 6 |
| Semester 8—Fall | 8 |
| NURS 462 Care of the Adult with Complex Problems (C) | 7 |
| NURS 471 Critical Thinking & Clinical Decision Making I | 1 |
| Semester 9—Spring | 8 |
| NURS 460 Home Health Care (C) | 3 |
| NURS 472 Critical Thinking & Clinical Decision Thinking II | 1 |
| NURS 490 Nursing Practicum (C) | 4 |
| 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.*

(C) = clinical course. (W) = writing enriched. (S) = service learning.

SPECIAL ACADEMIC POLICIES FOR NURSING STUDENTS WHO BEGAN UPPER DIVISION COURSES IN AND PRIOR TO FALL 2011*

***For Current and Transfer Students Matriculated 2009–Present**

Lower Division Policies

- Nursing prerequisites and nursing courses may be repeated only once following a grade of less than ‘C’ or a withdrawal. The repeat attempt requires written permission from the school dean or dean’s designee on the “Repetition of Course” form. If on the repeat attempt, the student does not complete the course with a minimal grade of ‘C’ or withdraws from the course, the student will be dismissed from the School of Nursing BSN program.
- BIOL 121 and 122 or corresponding transfer courses must have been successfully completed not more than five years prior to entry to junior year.
- Students enrolled at Widener in a major other than nursing who wish to be considered for the school of nursing BSN program must have successfully completed CHEM 105 and 106 with a grade of C or higher, earned a grade of C or higher in any courses that are part of the required nursing

curriculum, and achieved a cumulative GPA of 2.75 in their present curriculum (see “Change in Curriculum” section of this catalog). A cumulative GPA of 2.75 must be maintained for entry into junior-level nursing courses.

- Matriculated students may take a maximum of nine semester credits off campus but only with special permission of the School of Nursing assistant or associate dean and the university’s associate provost. A “Course Transfer Authorization” form must be completed for all courses taken off campus.

Progression to Upper Division

- Widener University cumulative GPA of 2.75 and a grade of ‘C’ or higher on all prerequisite courses, including CHEM 105/105, ENGL 101, ENGL 102, PSY 105, SOC 105, SOC 215, BIOL 121, BIOL 122, BIOL 219/220, PSY 211, and PSY 381 or 385.
- Widener University grade of C or better on all lower-division nursing prerequisites and a cumulative GPA of 2.75 or greater are required for admission to the upper division.
- Students must demonstrate compliance with all clinical requirements as specified in the *School of Nursing Undergraduate Student Handbook*.
- Students who began their upper division junior year in the fall of 2011 or later must have satisfactory completion of the following general education courses: history or art history and humanities 300-level elective.

Nursing Progression Policies

- Theory grades are calculated per the course syllabus and are reported as a letter grade. Students are required to earn a grade of C or higher in the theory component of all nursing courses, including clinical and nonclinical required courses in order to successfully complete, or pass, the course. The minimum numeric score required to earn a grade of C in any nursing course is 75.
- Laboratory or clinical grades are evaluated per the course syllabus and reported as “pass” or “fail”. A grade of “pass” in the clinical/laboratory component of a course is required to successfully complete, or pass, the course.
- Students failing either the classroom or clinical component of a nursing course must repeat the course in its entirety, including classroom and clinical components.
- Students who withdraw from a course with corequisite requirements before midterm must withdraw from other corequisite courses as well. For progression purposes, withdrawal from one course and its corequisites is considered as one withdrawal.
- Students are permitted only one unsuccessful attempt to complete a nursing course throughout the program, and both withdrawals and failures count as an attempt. *It is important to note that this policy will not be retroactive to include students’ past nursing withdrawals. However, any past nursing failures will apply.*
 - o A grade of less than C in the same nursing course twice will result in dismissal from the nursing program.
 - o A withdrawal from a nursing course and a grade of less than C on a subsequent attempt after a previous withdrawal from the same course will result in dismissal from the nursing program.
 - o A grade of less than C in any nursing course with subsequent withdrawal from the same course on the second attempt will result in dismissal from the nursing program.
 - o A grade of less than C in any two nursing courses will result in dismissal from the nursing program.
 - o For students who began their upper-division junior year in fall 2011: A withdrawal from a nursing course followed by a subsequent withdrawal from any other nursing course will result in dismissal from the nursing program.

- o For students who began their upper division junior year in fall 2011: A withdrawal from a nursing course followed by a subsequent failure of any nursing course will result in dismissal from the nursing program.
- Students who are dismissed from the School of Nursing may petition for a waiver of policy, as outlined in the *School of Nursing Undergraduate Handbook*, available online. Extenuating circumstances beyond a student's control are considered. Students who request a waiver of policy remain dismissed throughout this process, and are not eligible to continue in the nursing curriculum until a decision is rendered.

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.

NURSES EDUCATED TOGETHER (NET) LIVING AND LEARNING COMMUNITY

This rich experience offers freshman students admitted to the nursing major an opportunity to attend selected freshman courses with a small cohort of peers who live in a designated freshman residential hall. This program enhances the freshman year with faculty-led experiential learning activities and provides an immediate peer support group. Students engage in regularly scheduled co-curricular learning experiences that enhance the freshman experience. Students typically develop strong relationships among peers and with freshmen advisors. Students apply to the NET program during the summer, prior to freshman orientation. Students are selected on the basis of their applications. Only students who are eligible to enroll in CHEM 105/106 during the fall of the freshman year are eligible.

NURSES EDUCATED TOGETHER (NET) COMMUTING AND LEARNING COMMUNITY

The NET Commuting and Learning Community is open to commuting freshman students admitted to the nursing major. The students have the opportunity to attend selected freshman courses and faculty-led activities with a small cohort of commuter students. This program enhances the freshman year through scheduled cocurricular activities and provides an immediate peer support group. Students apply to the NET program during the summer, prior to freshman orientation. Students are selected on the basis of their applications. Only students eligible to enroll in CHEM 105/106 during the fall of freshman year are eligible.

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/MSN option of the MSN 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/BSN PROGRAM

The RN/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 two times per semester, depending upon the course design. In addition, each student is required to complete a clinical experience. 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. Students have three years to complete the RN/BSN program.

PROGRAM OF STUDY FOR RN TO BSN STUDENTS

| | |
|--|-----------|
| Liberal Studies/Sciences[†] | 56 |
| Humanities Electives—must include: | |
| English 102 Literature | 12 |
| Social Science Electives—must include: | |
| Intro to Psychology and Intro to Sociology | 12 |
| Science Electives—must include: | |
| Human Anatomy & Physiology | 12 |
| Additional courses: | |
| English 101 Composition | 3 |
| Statistics | 3 |
| Free Electives | 14 |
| Nutrition in Health (NURS 216) or NLN Challenge | 3 |
| Pennsylvania RN license (33 bloc credits) | 33 |
| RN to BSN Courses^{††} | 30 |
| <i>Fall (12 credits)</i> | |
| NURS 440 Leadership & Management for the RN (W)* | 6 |
| NURS 441 Health Care Policy for the RN** | 3 |
| NURS 442 Nursing Theories & Professional Practice** | 3 |
| <i>Spring (12 credits)</i> | |
| NURS 443 Population Health for the RN (W)* | 6 |
| NURS 444 Genetics & Genomics** | 3 |
| NURS 448 Gerontology for the RN** | 3 |
| <i>Summer (6 credits)</i> | |
| NURS 446 Research Design for the RN** | 3 |
| NURS 447 Evidence-Based Practice for the RN** | 3 |

TOTAL CREDITS

122

[†]These courses can be transferred before entering the RN to BSN program or completed at Widener:

^{††}The prerequisites for these courses are the Liberal Studies/Sciences courses and a Pennsylvania RN license.

*All 6-credit courses will be 14 weeks in length.

**All 3-credit courses will be 7 weeks in length.

(W) = writing enriched.

Students may take up to 6 credits of graduate courses as a non-matriculated student while obtaining their bachelor degree. The graduate tuition rate applies to these courses.

RN/MSN OPTION OF THE MSN PROGRAM

Registered nurses holding a bachelor's degree in another field of study are eligible to apply to the master of science in nursing (MSN) program. Registered nurses must hold a license to practice in the State of Pennsylvania to be accepted into the RN/MSN option of the MSN program. Students applying for the RN/MSN must submit the graduate application available online.

RN/MSN OPTION

COURSE REQUIREMENTS (12 CREDITS) *

| | |
|---|---|
| NURS 443 Population Health for the RN (W)* | 6 |
| NURS 446 Research Design for the RN** | 3 |
| NURS 447 Evidence-Based Practice for the RN** | 3 |

TOTAL CREDITS **12**

* All courses must be completed with a grade of B or higher (W) = writing enriched.

Admission requirements for the RN/MSN option of the master of science in nursing (MSN) program are described in the online graduate nursing catalog.

Upon admission into the MSN program, satisfactory completion of three undergraduate bridge courses above supports progression to the master level courses. Students are eligible to take up to two graduate courses concurrently with the bridge courses as specified in the graduate catalog. The student selects an advanced practice registered nurse (APRN) specialty role as either family nurse practitioner (FNP) or as a clinical nurse specialist (CNS) in the area of adult-gerontology. A subspecialty of adult-gerontology in emergency/critical care (ECC) is also available. A bachelor's degree in nursing (BSN) is not awarded.

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). Post-master's certificates in clinical specialties are also available. Information on all of the graduate nursing programs can be found in the School of Nursing's online *Graduate Catalog*, which can be found at www.widener.edu/catalogs.

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:

| Payable to Appropriate Agency | Freshman Year | Sophomore Year | Junior Year | Senior Year |
|---|------------------|-------------------|----------------|----------------|
| CPR | — | — | \$60–90 | — |
| Criminal check, drug testing, & child abuse clearance* | — | \$133 | — | — |
| Immunization tracking | — | — | \$20 | \$20 |
| Clinical laboratory supplies | — | \$100 | \$100 | — |
| Student uniforms & equipment | — | \$250 | — | — |
| Physical exams, immunizations | — | — | \$300 | \$100 |
| National Council of State Board of Nursing fees** | — | — | — | \$250 |
| Laptop Computer† | \$1,600 | — | — | — |
| Payable to Widener University | | | | |
| Membership in NSNA, SNAP, WUSNA | — | \$45 | \$45 | \$45 |
| Malpractice insurance | — | — | \$20 | \$20 |
| Testing fees | \$32 | \$232 | \$148 | \$242 |
| Nursing Technology Fee | \$23 | \$35 | \$74 | \$91 |
| Nursing Central | — | — | \$174 | — |
| NCLEX Review | — | — | — | \$200 |
| White Breakfast & Nightingale Ceremony | — | — | — | \$50 |

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.

†Approximate cost. Laptop computer minimum requirements:

1. PC running Windows 7 or XP, or Mac running OS 10.5. Some specialized applications require Windows to run. Mac users may need to install Windows via Boot Camp.
2. Internet Explorer 7 or Firefox
3. Graphics 800x600 or better
4. WiFi-enabled and Ethernet cable
5. A full-charged battery and a plug
6. Microsoft Office: Word, PowerPoint, Excel, Access

Undergraduate Courses

| | |
|---|------------|
| Accounting (ACCT) | 128 |
| African and African American Studies (AFAS) | 130 |
| Anthropology (ANTH) | 130 |
| Art History (AH) | 132 |
| Arts and Sciences (ASC) | 133 |
| Art Studio (AS) | 133 |
| Biochemistry (BCH) | 133 |
| Biology (BIOL) | 134 |
| Business Administration (BUS) | 139 |
| Business Law (BLAW) | 139 |
| Chemistry (CHEM) | 139 |
| Communication Studies (COMS) | 143 |
| Computer Science (CSCI) | 145 |
| Creative Writing (CW) | 147 |
| Criminal Justice (CJ) | 148 |
| Dance (DAN) | 150 |
| Earth and Space Science (ESSC) | 150 |
| Economics (EC) | 151 |
| Education (ED, TED) | 153 |
| Engineering (ENGR, BME, CHE, CE, EE, ME) | 160 |
| English (ENGL) | 167 |
| Environmental Science (ENVR) | 170 |
| Finance (FIN) | 173 |
| Fine Arts (ARTS) | 174 |
| Freshman Studies (FRS) | 174 |
| Gender & Women's Studies (GWS) | 174 |
| History (HIST) | 177 |
| Honors In General Education | 180 |
| Hospitality Management (HM) | 182 |
| Humanities (HUM) | 183 |
| Human Resource Management (MHR) | 185 |
| Management (MGT) | 186 |
| Management Information Systems (MIS) | 187 |
| Marketing (MKT) | 188 |
| Mathematics (MATH) | 189 |
| Media Informatics (MIN) | 192 |
| Military Science (MS) | 192 |
| Modern Languages (CHIN, FREN, GRMN, ITAL, JAPN, SPAN, ML)* | 193 |
| Music (MUS) | 196 |
| Music Studio (MSTU) | 198 |
| Nursing (NURS) | 198 |
| Operations Management (OPM) | 203 |
| Philosophy and Religion (PHIL) | 203 |
| Physical Education (PE) | 204 |
| Physics (PHYS) | 205 |
| Political Science (PS) | 207 |
| Professional Writing (PRWR) | 210 |
| Psychology (PSY) | 211 |
| Quantitative Business Analysis (QA) | 215 |
| Reading (READING) | 215 |
| Science (SCI) | 215 |
| Social Work (SW) | 216 |
| Sociology (SOC) | 218 |
| Sport Management (SMGT) | 220 |
| Theater (THTR) | 221 |

*Chinese, French, German, Italian, Japanese, Spanish, modern language general offerings

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 U.S. Generally Accepted Accounting Principles (GAAP). A brief introduction to International Financial Reporting Standards (IFRS) is provided. 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: None. 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. 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 (IFRS). Selected projects require the use of spreadsheet software. Prerequisite: ACCT 204 and 205. Corequisite: 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, and 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 SAP. Prerequisite: ACCT 204 and ACCT 205, and 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 and ACCT 205. 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 sport 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 and ACCT 205. 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, and segment reporting requirements. Prerequisite: ACCT 308 or ACCT 309. 4 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 and ACCT 205. 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. 4 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. 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 and ACCT 205. 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 and ACCT 205. 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 and ACCT 205. 4 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. 4 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 and ACCT 205. 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 junior standing. 3 semester hours

ACCT 451 ACCOUNTING SEMINAR

In this course, emphasis is placed on current problems in accounting theory, auditing, and practice, and there is significant coverage of international financial reporting standards (IFRS). 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 an accounting major in the 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 class work 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/no pass 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

AFRICAN AND AFRICAN AMERICAN STUDIES

AFAS 101 INTRODUCTION TO AFRICAN AND AFRICAN AMERICAN STUDIES

This course focuses on the experiences of Africans and African Americans and the significance of race from an interdisciplinary and multicultural perspective. It explores the extent to which race, as well as other social characteristics such as gender, class, and sexual orientation, affects access to opportunity, power, and resources. 3 semester hours

ANTHROPOLOGY

ANTH 105 CULTURAL ANTHROPOLOGY

This course acquaints students with how anthropologists use a cross-cultural approach to understanding shared human perceptions and behaviors, and teaches anthropological research techniques of ethnography and corporate culture analysis. Why are cultures different? This course looks at similarities and differences among world's cultures in terms of technological levels, social organization, and ideology. Topics include symbolism, language, sex roles, economic systems, kinship, political systems, religion, warfare, and cultural change. Students get to explore local culture through experiential projects outside the classroom. No prerequisite. 3 semester hours

ANTH 204 BIOLOGICAL/PHYSICAL ANTHROPOLOGY

Human beings are culture bearing animals but also biological ones. What effect does the cultural system have on the biological and vice versa? This course deals with this question for the evolution and adaptations of ancient and modern humans. Students in this course explore the theories of human evolution. Students study evolutionary theory, compare humans with our ancient precursors and our closest non-culture bearing cousins, the Great Apes, investigate the clues to the evolution of us. Students will also come to understand variation in modern humans in various climates and regions, and explain how variation in biological form—skin color, body form, eye shape, variation in growth patterns, menarche, disease, sexual behavior, and “race”—is 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 216 DIGGING CULTURE: ARCHAEOLOGY AND EVOLUTION

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. This course emphasizes problem-solving techniques and perspectives. No prerequisite. 3 semester hours

ANTH 218 ARCHAEOLOGICAL EXCAVATION

Archaeology is not only an intellectual pursuit; it is a series of techniques used by its practitioners to retrieve artifacts from the ground in a systematic way. To learn how archaeologists work, how they convert buried remains into cultural patterns that reveal the nature of the past and how cultures change, one should actually learn through the experience of excavating. In this course, students join an excavation team at a local archaeological site and learn by doing and by reviewing the rationale for what is being done. No prerequisites. 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 commonalities 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 is 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 provides a foundation for understanding modern African ethnography, sociology, politics, and economics, which require a knowledge of traditional society and culture. The course illustrates the differences and similarities of Africa's people and cultures. It looks at their geography, environments, languages, and food-getting practices. Major emphasis is 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 245 NATIVE AMERICANS: CULTURE AND CONQUEST

Many children grow up playing cowboys and Indians. Yet how much do we know of the first Americans? When did they arrive, and from where did they come? In what ways are the cultures of the Native Americans different and the same in religion, philosophy, customs, making a living, organizing, and establishing their territory? How many know that the Plains Indians that dominate movies actually evolved only after contact with the Spanish? Students in this course explore these different Native American groups, emphasizing the Indians of the Northeast (Delaware, Iroquois, and Huron), Plains (Sioux, Cheyenne, Paiute, Fox, Apache), and the People of the Southwest (Pueblo people—Hopi and Zuni—and the Navajo). No prerequisite. 3 semester hours

ANTH 250 SYMBOLISM, COGNITION, AND SOCIETY

One early anthropologist said that the unique characteristic of human beings is their ability to use symbols. What are symbols? How do they work to define our understanding of our world, to establish our beliefs, and motivate us to act? In this course, students explore the way societies around the world (including 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 marketing and advertising, in religion, politics, promoting change, confronting external threats, constructing social groups and social movements. No prerequisite. 3 semesters hours

ANTH 251 PROGRESS AND POVERTY (FORMERLY ANTH 304)

Did you ever wonder why there are such disparities between rich and poor countries when many of the raw materials used in industry are found in those poor countries? What is the relationship between the richer “developed” (First World) countries and poorer “underdeveloped” (Third World) countries? This course introduces students to the historical roots of the crisis of underdevelopment and looks critically at what development agencies are doing to solve it. Students examine the nature of world-wide economic systems at the root of these disparities and how these disparities have led to broad trends of unemployment, poverty, disease, and political instability in the developing world and, increasingly, in the developed world as well. No prerequisite. 3 semester hours

ANTH 252 CULTURE, POWER, AND THE WORLD SYSTEM (FORMERLY ANTH 306)

We live in a world that is becoming more connected. Previously uncontacted native tribes find themselves face to face with capitalist entrepreneurs and state bureaucrats. Walmart shelves are filled with products made in other countries that American consumers know little or nothing about. How did this happen? How is it affecting different people around the world? Are local and national cultural differences being erased as we move toward a single global culture? This course exposes students to the critical role of culture in the development of the modern world system. By looking at the ways globalization impacts different cultures around the world, students learn that it has very different meanings and consequences for people in different cultural settings. Topics include modern slavery, NGO-based social movements, trade liberalization, and the U.S.-led War on Terror. No prerequisite. 3 semester hours

ANTH 253 BUSINESS CULTURE IN INTERNATIONAL PERSPECTIVE (FORMERLY ANTH 305)

Like everything else in human societies, culture defines the way people do business. This course teaches students how to use the ethnographic method and anthropological literature to deal more effectively with foreign business people, foreign markets, and foreign development agencies. Students study a series of case studies from a variety of countries/cultures. 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 foreign cultures with which we need to interact. Prerequisite: ANTH 105 or permission of the instructor. 3 semester hours

ANTH 254 GODS, RITUALS, AND ALTERED REALITIES (FORMERLY ANTH 202)

Every culture studied by anthropologists to date worships some god, gods, or spirits. Why? What is the role of religion in culture? How do god concepts structure the way people view their world, define their values, and impel them to social action? Why are science and religion completely different ways of knowing? What is spiritual reality? How do religions make their concepts real through ritual and myth? This course looks at the more familiar religions but also very different ones including ancient witchcraft, and practices from high church ceremonies to magic and divination (astrology, spirit mediums, and sorcery). Students also explore the social uses of religions in group formation and cohesion, politics, and cultural revitalization. No prerequisite. 3 semester hours

ANTH 255 RACE AND RACISM (FORMERLY ANTH 208)

As social scientists assert, race matters. What is race? How does race play a role in American society? This course explores 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 some use to define race, 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 256 FORENSIC ANTHROPOLOGY (FORMERLY ANTH 308)

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 257 BIBLICAL ARCHAEOLOGY (FORMERLY ANTH 217)

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. This course emphasizes problem-solving techniques and perspectives. No prerequisite. 3 semester hours

ANTH 382 ETHNOGRAPHIC METHOD

This course is designed for anthropology majors and other social science students using qualitative research methods. 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 385) and is the only research methods course required before ANTH 409/410, Senior Research, for anthropology majors. Other advanced social science majors are welcomed. Prerequisite: Sophomore or junior students, anthropology majors, or permission of the instructor. 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, anthropology major. 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. 3 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

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 aggrandizement of the artist. Special emphasis is given to the careers of the major artists Caravaggio, Bernini, Rubens, Rembrandt, and Velazquez, 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 to 1885. The course investigates Impressionist art as part of the historical, 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 about 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 about the revision of research in studies about 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 GWS 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. The class 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 post-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 499 INDEPENDENT STUDY

Individual investigation of a topic in art history. Reading, research, consultation, and discussion are required. Credit, scope, topic, and prerequisite to be arranged individually. May be taken no more than once. 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. Prerequisites: 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

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 the 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 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 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 108 MARINE DIVERSITY

This course explores the diversity of marine animal life using an ecosystem approach. The first part of the class focuses on the structure and function of the dramatically diverse body plans of marine organisms. The second part explores a variety of marine ecosystems and the interactions of animals with their environments. This course fulfills the science distribution requirement. 3 hours lecture. 3 hours lab. 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 and 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 114 SEX AND CONSEQUENCES (HONORS)

In this course, students examine scientific evidence for the evolution of sexes and of sexual reproduction and analyze some of the numerous biological and social consequences of being a sexually reproducing species. In-class activities include both student- and instructor-led discussions. This course is for nonscience majors in the Honors Program in General Education and fulfills the general education requirement in science. No prerequisites. 3 hours lecture. 3 semester hours

BIOL 115 HUMAN NUTRITION

This course is 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 students evaluate their 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 curricula 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. Premedical students (regardless of major) should enroll in BIOL 261. Prerequisites: 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 and human anatomy and physiology. Specific topics include eukaryotic and prokaryotic cell structure, bioenergetics, membrane structure and function, gene expression and regulation, and the structure and function of major human organ systems such as the nervous, muscular, cardiovascular, and respiratory systems. 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

In this lecture and laboratory course designed to examine how different characteristics are inherited and expressed in living organisms, students focus on understanding the mode of action, regulation, and transmission of genes. Special emphasis is placed on the use of model organisms, recombinant DNA technology, and bioinformatics to better understand animal development, human disease, and mechanisms of evolution. In laboratory, students apply Mendelian genetics and molecular biology techniques in multi-week projects. Prerequisites: BIOL 261 and CHEM 255. 3 hours lecture. 1 hour recitation. 3 hours laboratory. 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 118 or higher or permission of the instructor. 3 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 model organisms, 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 vertebrate animals. Evolutionary and functional aspects of morphological differences among vertebrate groups are emphasized. The laboratory

work primarily involves dissections 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 photobiology, 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 162 and CHEM 255, or permission of the instructor. 3 hours lecture. 3 hours laboratory. 4 semester hours

BIOL 312 PLANT-ANIMAL INTERACTIONS

This course examines the diverse array of interactions between plants and animals. Specifically, the course focuses on interactions between land plants (primarily angiosperms) and animals (primarily insects). Course topics are broadly divided into two areas: (1) interactions between plants and the animals that facilitate the plants' reproduction through pollination and seed dispersal, and (2) interactions between plants and the animals that eat them (herbivores). Lecture discussion topics are drawn from textbook material and critical reading of current scientific literature. The laboratory portion of the course involves student-designed field-based research projects and writing/in-class presentation of a formal research proposal. Prerequisite: BIOL 262 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. Prerequisites: 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 262 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 examines 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 ENVR 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. 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, archaeobacteria, 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 specifically addresses 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, allergies, immunodeficiency diseases, and the human immunodeficiency virus. The laboratory part of the course includes 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. Prerequisites: BIOL 261, CHEM 255. 3 hours lecture. 3 hours laboratory. 4 semester hours

BIOL 326 MEDICAL GENETICS

A lecture and laboratory course for pre-medical students and biology and biochemistry majors that examines the importance of genetics and model organisms to better understand human disease. Special emphasis is placed on the genetic dissection of homologous genes in model organisms to explore specific defects that cause human genetic disorders and to investigate potential therapies that ameliorate the disease condition. Critical reading of current scientific literature forms the basis of the lectures. Students submit a review paper on a genetic disorder of interest, based on current research using primary literature, policy reviews, and books. Laboratory exercises enable students to use *Drosophila melanogaster* as a model to investigate the effect of mutations in homologous disease-causing genes and to identify developmental or biochemical pathways that might influence disease severity or progression. Prerequisites: BIOL 262, CHEM 255, and CHEM 257. 3 hours lecture. 3 hours laboratory. 4 semester hours

BIOL 327 FUNCTIONAL ANATOMY OF MAMMALS

The course focuses on form-function relationships in extant mammals and related fossil forms. The course surveys 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 is paid to the morphology of the musculoskeletal, digestive, and neurosensory systems in the context of locomotion and acquisition of food. The laboratory allows 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 students to the basic computational concepts and methods used in molecular biology and molecular genetics and 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. 1 hour laboratory. 4 semester hours

BIOL 340 TROPICAL ECOLOGY (SAME AS ENVR 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 ENVR 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 field-trip 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

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. 4 hours lecture. 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). Prerequ- 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 students about the prospect of majoring in business and to teach them about careers in business. 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 freshman, or with permission of the SBA assistant dean. 3 semester hours

BUS 220 FINANCIAL LITERACY

In this course, students learn to effectively evaluate and manage finances in order to make independent decisions toward reaching life goals and achieving financial well-being. A life cycle approach is taken, starting with students' current status through adulthood and planning for retirement. The course helps students to be better informed financial consumers and in turn better personal money managers. Topics include personal financial statements, budgeting, money and credit management, tax and insurance issues, as well as the buying and selling of investments and retirement planning. Emphasis is placed on the fact that sound financial planning is a life-long activity and that personal financial goals will change throughout life. Prerequisites: None. 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 SMTG 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, filmstrips, 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 100 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 at least Level 3 on the Mathematics Assessment. 3 semester hours

CHEM 101 INTRODUCTION TO CHEMISTRY I

This course is designed for students who are in a nonscience pre-physical 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. Prerequisite: MATH 101 or at least Level 3 on the Mathematics Assessment. 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, 105, or 145. 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 inorganic systems are carried out. 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. Prerequisite: CHEM 103, 106, or 147. Corequisite: CHEM 102. 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 at least Level 3 on the Mathematics Assessment. 3 hours lecture. 1 hour recitation. 3 semester 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 at least Level 3 on the Mathematics Assessment. 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 at least Level 3 on the Mathematics Assessment. 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 at least Level 3 on the Mathematics Assessment. 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

This is the first semester of a two-semester introductory organic chemistry sequence for science, engineering, and pre-med programs. The course provides an introduction to the basic principles of the chemistry of carbon compounds and green organic chemistry. The

chemistry of a number of functional groups is examined, with emphasis on nomenclature, structure-reactivity correlations, stereochemistry, conformational analysis, reaction mechanisms, use of greener reagents in synthesis, and introductory spectroscopic methods. Prerequisite: CHEM 146, 148. 4 class hours. 4 semester hours

CHEM 256 ORGANIC CHEMISTRY II

This is the second semester of a two-semester introductory organic chemistry sequence for science, engineering, and pre-med programs. The course emphasizes the nomenclature, structure, properties, and identification (IR, ¹H- and ¹³C-NMR, and MS) of a large number of classes of organic compounds. The course also provides an introduction to alternative green reagents/reactions and multistep synthesis. The course concludes with a discussion of carbohydrates and amino acids. 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 characterization of organic compounds. The course has a strong emphasis on introducing an awareness of green chemistry concepts, and the application of these concepts to the design of a multistep synthesis. Prerequisite: CHEM 148. Corequisite: CHEM 255. 3 hours laboratory. 1 hour recitation. 1 semester hour

CHEM 258 ORGANIC CHEMISTRY LABORATORY II

This laboratory course is devoted to the synthesis and characterization of organic molecules using traditional qualitative and modern instrumental methods (IR, ¹H- and ¹³C-NMR, and UV-Vis). The course culminates with the students working in groups to devise a multistep synthesis of pharmaceutically or industrially relevant molecules. There is an emphasis on the use of greener reagents in the design of the multistep syntheses. Prerequisite: CHEM 257. Corequisite: CHEM 256. 3 hours laboratory. 1 hour recitation. 1 semester hour

CHEM 298 RESEARCH EXPERIENCE

The sophomore research experience provides an opportunity for students to participate in an independent, investigative research project in chemistry. Students carry out novel laboratory or field research in the chemical sciences. Pedagogical projects will be considered but require departmental approval. 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 sophomore standing. 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 products 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. Prerequisite: 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 or permission of instructor. Corequisites: CHEM 368 and 386. 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. 3 class hours. 3 semester hours

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. Corequisite: MATH 133 or 142, 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, and PHYS 162. Corequisite: MATH 133 or 142, 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

This course focuses on 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 databases (e.g., STN) will be emphasized. Prerequisite: CHEM 255. 1 semester hour

CHEM 398 RESEARCH EXPERIENCE

The junior research experience provides an opportunity for students to participate in an independent, investigative research project in chemistry. Students carry out novel laboratory or field research in the chemical sciences. Pedagogical projects will be considered but require departmental approval. 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. Prerequisites: 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 application 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 electron ionization, chemical ionization, and

high resolution mass spectrometry; H-1, C-13, DEPT, COSY, HETCOR, 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-ware, 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 mechanics 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 498 UNDERGRADUATE RESEARCH EXPERIENCE

The senior research experience is intended to provide an opportunity for students to participate in an independent, investigative research project as part of the requirements for the bachelor of science degree in chemistry. The students carry out novel laboratory or field research in the chemical sciences. Pedagogical projects will be considered, but require departmental approval. A written report and a public oral presentation (preferably on Student Projects Day) are required for completion of the course. Four hours of laboratory or field work are required per semester hour. The program requires a minimum of 3 credit hours during the senior year. Prerequisite: Permission of instructor and senior standing. 1–4 semester hours

CHEM 499 INDEPENDENT STUDY

This is an individual investigation of a problem in chemistry. Lab work, computation, readings, and orals as appropriate. Scope, topic, and prerequisites to be arranged individually. Credit to be arranged

CHEM 188, 288, 388, 488, 588**SPECIAL TOPICS IN CHEMISTRY**

Topics offered in response to student and/or faculty interest. 3 semester hours each

CHINESE

See courses listed under Modern Languages.

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 201 SOCIAL MEDIA INFORMATICS (SAME AS MIN 201)

The prevalence of social media in our culture creates an expectation that people communicate through technological platforms more often than traditional interpersonal means. Business and industry professionals market to specific audiences through evolving social media channels. Students actively follow case studies of current social media strategies, compare this activity to national trends, and report their findings to the class. In addition, students understand the value of building social capital, comprehend the newest technological applications, and evaluate social media campaigns. No prerequisites. 3 semester hours

COMS 213 VISUAL LITERACY

This course examines the structure and effects 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 news 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 & AUDIO 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 267 MEDIA, CRIME, AND CRIMINAL JUSTICE (SAME AS CJ 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, 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

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 SCREENWRITING (WE)

This course examines the basics of writing for the screen. Topics include pitching, format, structure, dialogue, characterization, and the screenplay as framework for production of a film/video. Students study how to create a story through editing, exercises, 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 DIGITAL IMAGING

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 World Wide 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. Prerequisites: 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 cast 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 (WE)

This writing-enriched 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 identify and 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 (SL)

These courses feature an extensive research project. Students propose and carry out research in an area pertinent to their academic

focus in commercial studies. Both semesters must be completed successfully. Prerequisite: 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. Prerequisite: 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. CSCI or CIS students may not take this course. This course does not satisfy the science distribution requirement. 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. This course fulfills the science with laboratory distribution requirement. 3 semester hours

CSCI 126 WOMEN IN COMPUTING (SAME AS GWS 126)

In the history of computing, while women have served significant roles, their contributions have often been overlooked. This course provides an opportunity for students to learn about pioneering women of computing and their contributions to the computing field. The course provides a tour through the world of computing by linking various computer science concepts to specific contributions. Students have an opportunity to explore different aspects of computer systems through hands-on activities. While introducing historical perspectives on women in computing, the course also provides an opportunity to learn about modern trends and modern gender issues in computer science, and to learn about online communities for women and girls interested in technology and computing and different organizations of women in computing and technology. This course fulfills the science with laboratory distribution requirement. 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 are introduced to various computer forensics and steganography tools. This course fulfills the science with laboratory distribution requirement. 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. This course fulfills the science with laboratory distribution requirement. 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 152. This course fulfills the science with laboratory distribution requirement. 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. 3 hours lecture; 3 hours laboratory. 4 semester hours each

CSCI 257 OBJECT-ORIENTED PROGRAMMING

This course provides an introduction to the Java programming language and the concepts of object-oriented design, including objects and classes, inheritance, polymorphism, and exceptions. Students are also introduced to container classes such as ArrayList and HashMap, as well as iterators. Concepts are reinforced through weekly lab sessions. Prerequisite: CSCI 131 or CSCI 143 or CSCI 152. 3 hours lecture. 1 hour laboratory. 4 semester hours

CSCI 258 DATA STRUCTURES AND ALGORITHMS

Stacks, queues, linked lists, trees, and heaps are treated theoretically and in the context of the Java programming language. Complexity analysis of algorithms including sorting and searching algorithms, graph algorithms, and recursion is also discussed. Prerequisites: CSCI 247 (or CSCI 257) and MATH 151. 3 hours lecture. 1 hour laboratory. 4 semester hours

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. Prerequisite: CSCI 131, 143, or 151. 3 hours lecture. 1 hour 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

In this course, students study concepts related to the design and implementation of high-level programming languages. Topics include syntax, semantics, dynamic and static scope, procedure call conventions, and garbage collection. Theoretical foundations of programming languages are also discussed, including automata, regular expressions, and context-free grammars. Students design and build their own simple programming language. Prerequisite: CSCI 248 or CSCI 258. 3 semester hours

CSCI 347 COMPUTER ARCHITECTURE I (SAME AS EE 473)

An introduction to computer system architecture; evolution of computer systems; performance criteria; instructions, addressing modes, subroutines, encoding of machine instructions; program examples using real machines; RAM, ROM, and cache memories; virtual memories; memory management requirements; secondary storage; computer arithmetic such as addition, subtraction, multiplication, and division using signed/unsigned and floating-point numbers; I/O organization; hardwired and microprogram controllers. Prerequisite: CSCI 264. 3 semester hours

CSCI 348 COMPUTER ARCHITECTURE II (SAME AS EE 474)

A continuation of CSCI 347 that includes an overview of computer systems from serial to parallel point of view, the need for pipeline and parallel processing, system attributes to performance, pipeline performance measures, instruction and arithmetic pipelines, pipeline hazards, pipeline scheduling, vector and array processors, static versus dynamic networks, network properties and routing, network topologies such as bus, ring, mesh-connected, hypercube, shuffle-exchange, multistage networks, interconnection design issues, communication models for multiprocessor systems, shared-memory multiprocessors, and message passing multicomputers. 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 or CSCI 258. 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. Prerequisites: PHIL 120 and CSCI 248 or CSCI 258. 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 365 LARGE SCALE COMPUTING

This course provides students with an introduction to the design, development, and management of large-scale applications. Different architectures of large-scale systems are discussed, the main focus being IBM mainframes. Students learn software design considerations for large scale applications and implement them in the COBOL programming language. Programming lab assignments make up a majority of the assigned course work. Topics include data sets, data organization/access methods, job control language, COBOL programming, transaction processing, hierarchical and relational databases, high availability, and security. Prerequisite: CSCI 247 or CSCI 257. 3 semester hours

CSCI 371 COMPUTER GRAPHICS

Basic concepts of raster graphics algorithms and systems, interactive graphics, geometrical transformations, and 3D viewing. Advanced topics are 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 or CSCI 258. 3 semester hours

CSCI 372 COMPUTER GRAPHICS II

This course is a continuation of CSCI 371 Computer Graphics I. Advanced topics of computer graphics are discussed: static and dynamic computer graphics, interaction of lighting and materials, textures, shading, and modeling. Computer graphics' applications in science, engineering, and other fields are discussed. A variety of computer graphics projects will be assigned for the entire semester. Prerequisite: CSCI 371. 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, verification, and maintenance, particularly in a team-programming environment. Prerequisite: CSCI 248 or CSCI 258. 3 semester hours

CSCI 375 GAME DESIGN AND PROGRAMMING

Basic concepts of game design and programming are introduced including game rules, game strategies, game animation and simulation, and multiplayer games. The course is centered on the development of working games. A variety of projects will be assigned for the entire semester. Prerequisite: CSCI 247 or CSCI 257. 3 semester hours

CSCI 381 COMPUTER NETWORK I

This course introduces the basic concepts of computer networks. Topics include network models, data and signals, digital and analog transmissions, bandwidth utilization, transmission media, switching methods, error detection, and correction. Logical addressing and network security are also introduced. Prerequisite: CSCI 131 or CSCI 143 or CSCI 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-networking. Discussion of transport, session, presentation, and application layers. Prerequisite: CSCI 381. 3 semester hours

CSCI 391 PRACTICAL CRYPTOLOGY

Cryptology is about making and breaking codes. This course covers the historical development of cryptographic methods and crypt-analysis 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 cryptology 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 or CSCI 258. 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. Prerequisite: CSCI 258.1 semester hour

CSCI 408, 409 SENIOR PROJECT I, II

Design and implementation of a project approved by the faculty. Prerequisite for CSCI 408: CSCI 398. Prerequisite for CSCI 409: CSCI 408. 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 or CSCI 258. 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 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 or CSCI 258. 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 COMPILER DESIGN AND CONSTRUCTION

This course presents compiler construction theory and techniques including top-down and bottom-up parsing algorithms and attribute grammars. 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 depends 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 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: 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)

This course is an in-depth study of prose writing and creative non-fiction. 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. Prerequisite: CRWR 151 or 156. 3 semester hours

CRWR 307 ADVANCED POETRY WRITING (SAME AS ENGL 307)

This course provides guided practice in composing verse and exercises in developing imagery and prosodic analysis with the purpose of imparting an enriched understanding and appreciation of poetry, as well as inspiring creativity. Prerequisite: CRWR 151 or 157. 3 semester hours

CRWR 308 PLAYWRITING (SAME AS ENGL 308)

This course provides 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: Previous creative writing course. 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: Previous 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. 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 online journals. In addition, students learn about the history of literary publishing in America and trends that will shape the future of publishing. Prerequisites: CRWR 151, at least one 300-level CRWR course, and junior standing. 3 semester hours

CRWR 379 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: Previous creative writing course. 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 GWS 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 RACE/ETHNICITY, 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 race/ethnicity 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 GWS 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 255 GANGS IN AMERICA

This course covers important issues surrounding the study of gangs in America. In particular are discussions of the definition of "gangs," the nature and extent of the gang problem in the United States, theoretical explanations for gang activity, and gang policies. The course is designed to help students gain an understanding of gang activity in the United States, and to think critically about ways to address this problem. No prerequisites. 3 semester hours

CJ 260 VICTIMOLOGY

This course explores the field of victimology, or the study of crime victims. The course covers the prevalence and victimization experiences of crimes including child abuse, intimate partner violence, elder abuse, hate crimes, etc. In addition to exploring theories of victimization, this course examines how victimization is handled by the criminal justice system. Both historical trends in victimology and its current controversies are discussed. Prerequisite: CJ 105. 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 ISSUES IN POLICING

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 AND LABORATORY 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. 4 semester hours

CJ 392 PRE-INTERNSHIP PROFESSIONAL DEVELOPMENT SEMINAR

In this course, students learn the logistics of setting up an internship, ethical and professional development issues pertinent to internship sites, the enrollment process, placement site supervision requirements, matching interests to sites, and interviewing skills relevant to acquiring an internship position. Students explore the process of skill-building techniques (e.g., interpersonal, demeanor), the connection between the internship experience and future academic and/or occupational goals, and how to integrate learning in the field with academic theory and research. Prerequisites: Criminal justice majors, junior standing. 1 semester hour

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. Prerequisites: 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. Prerequisites: 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. Prerequisites: CJ 382, PSY 385. 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 021 DANCE REPERTOIRE I

This course provides students with structured rehearsal and performing experience. Students learn one or more dances and perform for at least one public performance during the semester. Repertory varies each semester. Students may enroll in the course up to three times. Corequisite: DAN 101. 0 semester hours.

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 attend one or more live dance performances. Students may enroll in the course up to four times. Corequisite: DAN 021 or DAN 121. 1 semester hour

DAN 102 MODERN DANCE II

This course, a continuation of Modern Dance I, integrates the study of modern dance practice with the basic anatomical principles underlying sound dance technique. The class will attend one or more live dance performances. Students may enroll in the course up to four times. Corequisite: DAN 122. Prerequisite: DAN 101 with a grade of "C" or better or permission of instructor. 1 semester hour

DAN 121 DANCE REPERTOIRE II

A continuation of DAN 021. Prerequisite: 3 semesters of DAN 021. Corequisite: DAN 101. 2 semester hours

DAN 122 DANCE REPERTOIRE III

A continuation of DAN 121. Students may enroll in the course up to four times. Corequisite: DAN 102. Prerequisites: DAN 021, 121. 0.5 semester hours

EARTH AND SPACE SCIENCE

ESSC 103 PLANET EARTH

The purpose of this course is to expand students' 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 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. 2 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 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: 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 171 PRINCIPLES OF ENVIRONMENTAL SCIENCE (SAME AS ENVR 171)

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 173 INVESTIGATING ENVIRONMENTAL SCIENCE

This is a laboratory course designed to complement ESSC 171. Lab inquiry activities include topics in experimental ecology in model ecosystems, ecosystem modeling, and environmental assessment/environmental quality. There are weekly assignments and/or projects for each topic and a final exam. Corequisites: BIOL 161, 162, CHEM 145–148, ESSC 171. 3 hours laboratory/field. 1 semester hour

**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-tectonic 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. 3 hours lecture, 3 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 (SAME AS ENVR 207)

The world ocean covers 70 percent of the planet's surface making it the most important physical feature on the planet. This course concentrates on the environmental issues that adversely affect the health of the ocean and the biological organisms that live there. These issues are usually a function of human interference and examples are ocean pollution, coral reef destruction, commercial fishing, planetary-scale destructive weather patterns, rising sea levels, loss of marine biodiversity, tsunamis, coastal erosion and dynamic shorelines, and economic resources in the marine environment. The unique biology from selected ecosystems of the ocean are also studied to emphasize the magnitude of marine biodiversity. No prerequisites. 3 hours lecture. 3 semester hours

**ESSC 208 ASTRONOMY AND ASTROPHYSICS
(SAME AS ENVR 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

ESSC 209 METEOROLOGY (SAME AS PHYS 209/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 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/field. 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 purposed 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 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 micro and macro 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 socialist, 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 GWS 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. This course may be used as a human resource management elective. 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 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. This course is offered only in the spring semester. 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. This course is offered only in the fall semester. 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

EC 451 SENIOR PROJECT (SAME AS MGT 451)

This course helps integrate and reinforce concepts, theories, and practices studied in previous coursework and apply them to complex business problems. Successful completion of the course requires students to demonstrate effective communication, project management, and collaborative skills. The class operates in a seminar mode providing opportunities to examine key business, economic, ethical, and

environmental issues confronting managers of contemporary organizations. Students complete individual research assignments and report their findings through presentations, papers, and blogs. Student teams complete projects involving complex “real world” business problems or opportunities. They work with local businesses and non-profit organizations in coordination with the Small Business Development Center (SBDC) to perform a variety of business tasks, including market research, financial projections and feasibility studies, and strategic business plans. Through project teams, students learn about contemporary business issues, develop critical technical and leadership skills, and make a meaningful contribution to the local business community. Prerequisite: Senior standing and completion of all SBA core business courses except MGT 452. 3 semester hours

EC 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 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/no pass 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: PSY 105. Prerequisite or corequisite: ED 101. 3 semester hours

ED 202 EDUCATIONAL PSYCHOLOGY: EARLY LEARNERS (SAME AS PSY 202)

This course is an introduction to the application of psychological theories and principles to educational settings for young learners. Topics include basic concepts of measurement and assessment, developmental characteristics of learners, theories of learning and motivation, classroom management and teacher behavior, and individual differences of young learners. Diversity in family and community contexts, as well as the culture of child development/day care, pre-school, and elementary school settings are explored. This is a service-learning course. *Education majors must receive a “B” or better in this course to remain in the Teacher Certification program.* Prerequisite: 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 texts 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 ADOLESCENT PSYCHOLOGY (SAME AS PSY 213)

This course studies human development from the preteen through the late adolescent years. The course addresses physical, intellectual, social, and emotional development. Important topics covered include eating disorders, self-concept, academic achievement, dating, drug and alcohol use, suicide, delinquency, and sexuality. Prerequisite: PSY 105. 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 will 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 learning or 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, paraprofessionals, 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 education 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 these 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 complies with 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 SPECIAL EDUCATION PROCESSES AND PROCEDURES (PRE-K–4): SCREENING, ASSESSMENT, IEP DEVELOPMENT, AND EVALUATION

This course prepares discipline-based educators who engage in reflective decision-making and research-validated professional practice that results in creation of effective instructional programs for diverse groups of children (e.g., children with learning disabilities, mental retardation, emotional/behavioral disorders). Educational goals and assessment strategies are essential components of reflective practice, and the course provides participants with the knowledge and skills necessary to collect and use a wide range of assessment data in

general education and special education settings. Prerequisites: ED 1201, 1204, 1205, TED 1211. 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. Primarily, 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 1201, 1204, 1205, TED 1211. 3 semester hours

ED 1303 SOCIAL STUDIES METHODS (PRE-K–4)

The program of preparation for pre-service teachers focuses on the formation of individuals who have both the content of subject matter and the methodology to transmit this subject matter to elementary students. This course strives to help the preservice teacher develop self reflection in the teaching/learning process, foster content knowledge of the social sciences, enhance skills related to learning theories, and create authentic and appropriate assessments. The goals of this course reflect the standards 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. As part of this course, students participate in a field experience component designed to allow preservice teachers to use the knowledge and skills they have learned. Prerequisites: ED 1201, 1204, 1205, TED 1211. 3 semester hours

ED 1304 MATH FOUNDATIONS, 1–4

This course prepares preservice primary grade teachers to effectively teach mathematics in grades one through four. *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 the changing mathematics curriculum, how 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, students participate in field experiences that enable them to relate the course content to teaching. Prerequisites: ED 1203, 1024, 1205, TED 1211. 3 semester hours

ED 1305 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 1306 LITERACY FOUNDATIONS FOR THE PRIMARY GRADES (2–4)

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 are organized coherently to address the development of strong reading skills and habits. The course and related experiences also 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 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 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; kinetics 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, and Thevenin's and Norton's theorems. Elementary transients, sinusoidal steady-state analysis, impedance, power transfer, and operational amplifiers are covered. Corequisites: 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 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 312 ENGINEERING ECONOMICS

An introduction to the concepts and analytical techniques of engineering economics, including present and annual worth, capitalized cost, rate of return, cost/benefit analysis, and risk analysis. Prerequisites: sophomore standing and MATH 131 or MATH 141. 2 semester hours

ENGR 314 INTRODUCTION TO CONTROL SYSTEMS

Dynamics of open- and closed-loop systems. Development and linearization of nonlinear system models. Design, analysis, and tuning of PID feedback control based on transient response, Laplace domain, and frequency response methods. Introduction to feedforward, cascade, and advanced control strategies. Corequisite: MATH 242. 3 semester hours

ENGR 315 PROBABILITY, STATISTICS, AND RANDOM PROCESSES FOR ENGINEERS

This course is designed to give engineering students 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 thermodynamic cycles; equations of state and other thermodynamic relations for simple compressible substances; introduction to power and refrigeration cycles. Prerequisites: CHEM 146, PHYS 161, 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 388 SPECIAL ENGINEERING TOPICS

Junior elective offering special topics according to student and faculty interest. 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 488 SPECIAL ENGINEERING TOPICS

Senior elective offering special topics according to student and faculty interest. 3 semester hours

ENGR 499 INDEPENDENT STUDY

The student, under the general supervision of a faculty member or qualified specialist from the 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.

BIOMEDICAL ENGINEERING

BME 220 INTRODUCTION TO BIOMEDICAL ENGINEERING

Overview of applications of engineering in medicine and health care. Introduction to biological and biomedical problems using fundamental concepts and tools from electrical, mechanical, and chemical engineering. Prerequisites: CHEM 145 and PHYS 161. 3 semester hours

BME 303 BIOMEDICAL ENGINEERING LABORATORY I

Experimental techniques covering basic topics of biomedical engineering. Prerequisites: BIOL 231 and BME 220. Corequisite: BME 320. 1 semester hour

BME 304 BIOMEDICAL ENGINEERING LABORATORY II

Experimental techniques covering a range of topics in biomedical engineering. This is a continuation of BME 303. Prerequisite: BME 303. Corequisites: BME 350 and BME 360. 1 semester hour

BME 310 FUNDAMENTALS OF BIOLOGICAL SIGNALS & SYSTEMS

Introduction to basic digital signal processing theory in the context of biomedical applications. Major topics of interest include data acquisition, time and frequency domain analysis, analog and discrete filter design, sampling theory, time dependent processing, introduction to Wavelet, linear prediction, random signals, biomedical system modeling, and stability analysis. Introduction to nonlinear systems. Prerequisite: ENGR 219. 3 semester hours

BME 320 BIOMECHANICS

Mechanics of deformable bodies. Uniaxial tension, compression, bending, and torsion applied to orthopedic biomechanics. Rigid body planar kinematics and dynamics, finite element techniques with applications to the biomechanics of walking, running, cycling, and other athletic activities. Prerequisites: ENGR 214 and BIOL 231. 3 semester hours

BME 330 THERMODYNAMICS OF BIOLOGICAL SYSTEMS

The study of the formation of energy-rich macromolecules and the relation of this process to classical thermodynamics. Understanding the complexity of living systems in terms of open system, non-equilibrium thermodynamics. Prerequisites: ENGR 325 and BIOL 231. 3 semester hours

BME 332 MASS TRANSFER IN BIOLOGICAL SYSTEMS

Understanding molecular movement in solids, liquids, and gases with application to biological systems. Included are free and facilitated

diffusion, convective mass transfer, diffusion-reaction phenomena, active transport, biological mass transfer coefficients, steady and unsteady state analyses. Prerequisites: ENGR 325 and BIOL 231. 3 semester hours

BME 340 BIOINSTRUMENTATION

Overview of bioelectric signals such as EKG, EMG, EEG, and biosensors. Study of medical imaging. Study of the physiology that produces electric potentials within the body. Prerequisites: ENGR 219 and BIOL 231. 3 semester hours

BME 350 BIOTRANSPORT

Study of the physical, chemical, and biological processes governing the movement of mass and energy, as well as the transmission of forces throughout an organism. Transport processes influence the normal and pathological function of cells and organs and are thereby an important part of the design and operation of hybrid artificial organs and drug delivery. Prerequisites: ENGR 325 and BIOL 231. 3 semester hours

BME 360 BIOMATERIALS

Study of the principals of implantable materials and materials that interact with the body. Analysis of hard materials such as bioceramics, bioglasses, carbons, and polymers. Analysis of biocompatibility and wear issues. Prerequisites: ENGR 213 and BIOL 231. 3 semester hours

BME 388 SPECIAL TOPICS IN BIOMEDICAL ENGINEERING

Junior elective offering special topics according to student and faculty interest. 3 semester hours

BME 410 BIOMEDICAL ENGINEERING SEMINAR I

Students learn how to prepare and make professional presentations. Each student chooses a topic in a current BME area of his or her interest. Guest speaker are invited as available. Prerequisite: Senior status. 1 semester hour

BME 420 BIOMEDICAL ENGINEERING SEMINAR II

Students study ethical theories, codes, and human and animal experimentation in BME. Topics include security, confidentiality, privacy, and bioethical dilemmas. Guest speakers are invited as available. Prerequisite: Senior status. 1 semester hour

BME 440 BIOHEAT AND MASS TRANSFER

Introduction to the multidisciplinary knowledge (in thermodynamics, heat and mass transfer, physical chemistry, and biology) and methodologies that are required to study cryobiology and artificial organs. Students study cryobiology, artificial kidneys, and hemodialysis fundamentals. Prerequisites: ENGR 325 and BIOL 231. 3 semester hours

BME 442 CELL AND TISSUE ENGINEERING

This course is designed to introduce students to the fundamentals of tissue engineering and understanding of the biomaterials, cells, and growth factors used in tissue engineering. Specific applications include skin, nerve, bone, and soft tissue regeneration. Prerequisites: BIOL 231 and BME 360. 3 semester hours

BME 445 SYSTEMS IN BIOMEDICAL ENGINEERING

Students are introduced to computational and theoretical systems of biology at the cellular and molecular level. Topics include organizational patterns of biological networks, analysis of metabolic networks, and signal transduction networks. Prerequisites: BIOL 231 and BME 350. 3 semester hours

BME 446 BIOMEDICAL FLUID MECHANICS

Introduction to the fundamentals of fluid mechanics and their application to biological cardiovascular, respiratory, and other biofluid systems. Prerequisites: ENGR 214 and MATH 241. 3 semester hours

BME 448 BIOMEDICAL DEVICES

An examination of policies and procedures relating to medical device design and approval. Topics are applied through the study of currently marketed medical devices. Prerequisites: ENGR 214 and BIOL 231. 3 semester hours

BME 449 BIOIMAGING

This course introduces the major imaging modalities used in clinical medicine and biomedical research, as well as the fundamentals of

images from a signals and systems standpoint. Prerequisites: BIOL 231 and BME 310. 3 semester hours

BME 460 REGULATORY ASPECTS OF BIOMEDICAL ENGINEERING

Students develop an understanding of the FDA regulatory structure. Study of different classes of medical devices and what levels of testing are required for each class. Students also study pharmaceutical regulatory pathways: Phase I, Phase II, and Phase III testing. Prerequisite: Senior status. 2 semester hours

BME 465 PROFESSIONAL PRACTICE

Students develop an understanding of how medical products are sold in the United States and abroad (e.g., Medicare, insurance reimbursement coding, etc.) and the basics of quality control and quality management systems in the health care industry. Students interface with professionals who have industry experience in a variety of BE/BME jobs. Prerequisite: Senior status. 1 semester hour

BME 488 SPECIAL TOPICS IN BIOMEDICAL ENGINEERING

Senior elective offering special topics according to student and faculty interest. 3 semester hours

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, including introduction to vapor liquid equilibria. Material and energy balances on nonreacting and reacting systems. Ethics, safety, and loss prevention. Prerequisite: 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 or ENGR 320 and ME 455. 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. Corequisite: CHE 330. 4 semester hours

CHE 388 SPECIAL TOPICS IN CHEMICAL ENGINEERING

Junior elective offering special topics according to student and faculty interest. 3 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; economic analysis of projects, energy conservation, process safety, and environmental considerations in design. This is a writing-enriched course. Corequisite: CHE 332. 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, or ENGR 320 and ME 455. 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. Prerequisites: 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

**CHE 488 SPECIAL TOPICS IN
CHEMICAL ENGINEERING**

Senior elective offering special topics according to student and faculty interest. 3 semester hours

CIVIL ENGINEERING

CE 205 SURVEYING WITH CADD APPLICATIONS

An introduction to surveying and mapping with applications of computer-aided drafting using Auto-CAD. Measurements and errors in measuring. Leveling, distance, and angular measurements. Traversing, topographic surveys, and mapping. Construction and civil site drawings. Two 1-hour lectures and one 3-hour laboratory per week. Prerequisite: ENGR 113. 3 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 1-hour lecture and one 3-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 1-hour lecture and one 3-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 or CHEM 256. 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 hours lecture and one 2-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 388 SPECIAL TOPICS IN
CIVIL ENGINEERING**

Junior elective offering special topics according to student and faculty interest. 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: CHE 329 or ENGR 320, CE 347. 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. 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 procedures 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

**CE 488 SPECIAL TOPICS IN
CIVIL ENGINEERING**

Senior elective offering special topics according to student and faculty interest. 3 semester hours

ELECTRICAL ENGINEERING

EE 101 INTRODUCTION TO MICROCONTROLLERS

Students are introduced to the basic principles of microcontrollers through a hands-on laboratory experience. The course covers building an automated microcontroller device, programming the embedded microcontroller in a high-level language, and testing the completed design to meet certain specifications. One 2-hour laboratory per week. Corequisite: ENGR 112. 1 semester hour

EE 220 LINEAR ELECTRICAL SYSTEMS

Students are introduced to the concepts of linear systems theory as applied to electrical networks. AC steady state analysis, frequency response, two-port models, Fourier series, and Laplace transforms

are covered. Prerequisites: ENGR 219, MATH 133 or 142, PHYS 162. 3 semester hours

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 305 PROFESSIONAL PRACTICE SEMINAR

This seminar familiarizes engineering students with professional ethical issues using case studies. The students will be able to analyze, reflect on, and act to resolve ethical issues arising from engineering decisions in accordance with the National Society of Professional Engineers (NSPE) Code of Ethics for Engineers. This course is writing enriched. Prerequisite: Senior status. 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: EE 220, MATH 241. 3 semester hours

EE 333 INSTRUMENTATION LABORATORY

Students are introduced to the operation of various sensors through a series of laboratory exercises that detect physical quantities, such as vibration, strain, rotational speed, and temperature. In addition, students learn to use an analog to digital converter (ADC) in acquiring data. The essentials of signal conditioning are also covered. Prerequisite: EE 220. Corequisite: EE 347. 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: EE 220. 3 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. Prerequisite: 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. Extensions 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. Prerequisite: ENGR 112. 3 semester hours

EE 345 JUNIOR DESIGN LABORATORY

Students are presented with an open-ended, technical problem(s) and must use relevant theory, analysis methods, and laboratory practice learned in earlier coursework to meet the goals of the design. A formal written report is required, as well as an oral presentation. Prerequisites: EE 220, EE 230, EE 232, and EE 347. Corequisite: EE 346. 2 semester hours

EE 346 INTRODUCTION TO 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 transforms, Nyquist sampling theorem, z transform, and linear filters. Prerequisite: EE 220. 3 semester hours

EE 347 INTRODUCTION TO ELECTRONICS

Students are introduced to the operation of solid state devices at the circuit component level through various circuit device models. Analytical techniques include small signal circuit models, biasing considerations, switching models, and AC/DC load lines. The PN junction diode, Zener diode, BJT, and FET families of transistors are presented. Circuit models for operational amplifier applications are included. Prerequisites: ENGR 219, MATH 133 or 142, PHYS 162. 3 semester hours

EE 348 MICROELECTRONICS

In this course, students study electronic devices that can be used singly in the design of discrete circuits or as components within an integrated circuit. The course covers the design and analysis of the interconnections of these devices to form discrete and integrated circuit modules to perform a wide variety of circuit functions. Topics include differential amplifiers, negative feedback amplifiers, power amplifiers, and semiconductor fabrication. Prerequisites: EE 220, EE 347. 3 semester hours

EE 388 SPECIAL TOPICS IN ELECTRICAL ENGINEERING

Junior elective offering special topics according to student and faculty interest. 3 semester hours

EE 404 SENIOR LABORATORY

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 465 TRANSMISSION OF ELECTROMAGNETIC ENERGY

This course provides an application of Maxwell's equation to problems in electromagnetic fields. Power and communication transmission lines, waveguides, cavity resonators, antennas, and other radiating systems. Prerequisite: EE 313. 3 semester hours

EE 471 CONTROLS I

Modeling of physical systems including electromechanical systems. Reduction of block diagrams. Signal flow graphs and Mason's gain formula. Response of second order systems: natural frequency and damping ratio and how they relate to rise-time, peak-time, settling-time, and overshoot. Stability and the Routh-Hurwitz criterion. Steady-state error and sensitivity. Root locus. Design of cascade compensators using root locus and frequency response. Prerequisite: EE 220. 3 semester hours

EE 472 CONTROLS II

Introduction to discrete-time systems. Sampling and reconstruction. A/D and D/A converters. Pulse transfer functions of analog systems with samplers. Relationship of closed-loop poles in the z-domain to digital compensators using root locus and frequency response. State-variable models of physical systems including discrete-time state models of sampled analog systems. Solution of state equations. Controllable, observable, and Jordan form models. Transfer function matrices of multi-input, multi-output systems. State-variable design by pole placement. Prerequisite: EE 471. 3 semester hours

EE 473 COMPUTERS I

An introduction to computer system architecture; evolution of computer systems; performance criteria; instructions, addressing modes, subroutines, encoding of machine instructions; program examples

using real machines; RAM, ROM, and cache memories; virtual memories; memory management requirements; secondary storage; computer arithmetic such as addition, subtraction, multiplication, and division using signed/unsigned and floating-point numbers; I/O organization; hardwired and microprogram controllers. Prerequisites: EE 230, EE 232, senior status. 3 semester hours

EE 474 COMPUTERS II

A continuation of EE 473 that includes an overview of computer systems from serial to parallel point of view, the need for pipeline and parallel processing, system attributes to performance, pipeline performance measures, instruction and arithmetic pipelines, pipeline hazards, pipeline scheduling, vector and array processors, static versus dynamic networks, network properties and routing, network topologies such as bus, ring, mesh-connected, hypercube, shuffle-exchange, multistage networks, interconnection design issues, communication models for multiprocessor systems, shared-memory multiprocessors, and message-passing multicomputers. Prerequisite: EE 473. 3 semester hours

EE 475 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. 3 semester hours

EE 476 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. 3 semester hours

EE 477 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, design, 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: ENGR 315 or permission of the instructor. 3 semester hours

EE 479 OPTICAL FIBER COMMUNICATION SYSTEMS

An introduction to optical communication systems covering the characteristics of the optical fiber as well as photodetection/ phototransmission devices. Specific topics include dispersion and attenuation in SI and GRIN fiber, LEDs/semiconductor lasers in phototransmission and PIN/avalanche photodiodes in photodetection. Prerequisite: EE 313. 3 semester hours

EE 482 COMPUTER NETWORKING AND DATA COMMUNICATIONS

Students are introduced to the concepts of network communications using the 5-layer Internet model, which consists of the physical, data link, network, transport, and applications layers. Students learn how information is transmitted, how errors in transmission are removed, how data frames are routed in a network, how transmission flow control is achieved, and what services are provided by standard TCP/IP networks from the application viewpoint. By the end of this course, students should understand how data communications operate and should be able to design a basic computer network. Prerequisite: Senior status. 3 semester hours

EE 488 SPECIAL TOPICS IN ELECTRICAL ENGINEERING

Senior elective offering special topics according to student and faculty interest. 3 semester hours

MECHANICAL ENGINEERING**ME 215 FUNDAMENTALS OF ENGINEERING MATERIALS AND DESIGN**

Atomic structure, arrangement, and movement. Microstructure and mechanical properties of materials. Properties of alloys, polymers,

ceramics, and composite materials. Destructive and nondestructive testing. Deterioration and failure of materials. Materials selection and design considerations. Prerequisite: CHEM 145. 3 semester hours

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 and lab experience in the use of transducers for the measurement of displacement; strain and stress; force and torque. One lecture and one 3-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 II

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 388 SPECIAL TOPICS IN MECHANICAL ENGINEERING

Junior elective offering special topics according to student and faculty interest. 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. Prerequisites: ENGR 214, MATH 242. Corequisite: ME 354. 3 semester hours

ME 455 HEAT TRANSFER

An introduction to heat transfer, including 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, and MATH 242. 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

This course involves individual and team design of mechanical systems. Theories and applications of optimization, engineering statistics, and risk and reliability analysis are covered. Prerequisite: ME 461. 3 semester hours

ME 464 DESIGN OF FLUID-THERMAL SYSTEMS

Review of basic fluid mechanics and heat transfer principles. Design methodology of fluid-thermal systems and piping systems, including the economics of pipe size selection, pump, and piping systems. Design aspects include entire system for moving fluids that is efficient and cost effective, various heat exchangers, and optimization of the fluid-thermal system. Prerequisites: ME 346 and ME 455. 3 semester hours

ME 474 INTRODUCTION TO FINITE ELEMENT ANALYSIS

This course provides an introduction to the theory and application of finite elements with an emphasis on structural mechanics. The course includes the development of the underlying matrix equations, the treatment of element properties, implementation of boundary conditions, and solution of the system of equations. Emphasis is placed on problems of engineering interest. Students are also introduced to the use of commercial finite element packages. Prerequisite: Senior status. 3 semester hours

ME 475 BIOMECHANICS

This course introduces the engineering and biological foundations of biomechanics. The course focuses on the response of the body to different applied loads, with a particular emphasis on relationships among anatomy (structure), physiology (function), and mechanical behavior in these systems. Examples are drawn from diverse fields in biomechanics, including automobile safety, cardiovascular biomechanics, and injury biomechanics. Prerequisite: Senior status. 3 semester hours

ME 476 BIO-HEAT AND MASS TRANSFER

An introduction to the multidisciplinary knowledge (in thermodynamics, heat and mass transfer, physical chemistry, biology) and methodologies that are required to study cryobiology and artificial organs. Cryobiology fundamentals include the cell's response to low temperature, osmotic behavior, and membrane transport at low temperature and activation energy, and mechanisms of cryoprotection. Fundamentals of kidneys and hemodialysis, including type of kidney diseases, different treatments, and kinetic modeling in hemodialysis, are covered. Prerequisite: Senior status. 3 semester hours

ME 477 INTRODUCTION TO COMPOSITE MATERIALS

Students study the use of composite materials (fiber reinforced plastics) for advanced components. Students are introduced to the structural advantages of various composites, including laminate theory and the use of sandwich construction. This is followed by a discussion of manufacturing approaches to fabricate composite parts. Throughout the course, contemporary issues in composite materials are studied using a project-based approach. By the end of the course, students should be able to identify applicable areas for the use of composite materials, as well as the most appropriate manufacturing approach. Prerequisite: Senior status. 3 semester hours

**ME 488 SPECIAL TOPICS IN
MECHANICAL ENGINEERING**

Senior elective offering special topics according to student and faculty interest. 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. 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. 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. 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. 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. 3 semester hours

ENGL 135 AMERICAN LITERATURE

A critical and historical survey of the significant works in American literature from the colonial period through the modern and postmodern periods. Authors may include Franklin, Poe, Hawthorne, Dickinson, Faulkner, Hughes, O'Connor, Erdrich, and others. 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 GWS 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 GWS 200 AND GWS 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, Hispanics, 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/CRWR 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/CRWR 307. 3 semester hours

**ENGL 161 INTRODUCTION TO POETRY
AND POETIC FORM**

This course is an introduction to the reading, study, and general appreciation of poetry with emphasis on the lyric tradition as it has developed in English but with some attention given to pertinent classical and continental precedents in Western literature. Students study the formal choices poets make when they write poems and learn how to read and discuss poetry with attention to such matters as genre, form, stanza, rhyme, meter, diction, figure, and allusion. The course includes units on specific poetic traditions such as the ode, the sonnet, the pastoral, and the ballad, among others. Poets studied range from canonical poets of the past to contemporary poets writing today. The course does not involve student composition of poetry. 3 semester hours

ENGL 165 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 range from Hawthorne, James, and Chopin, to 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 168 FILM AS LITERATURE

An introductory course that focuses on analyzing and interpreting film as narrative art. Beginning with the early days of film, members of the class study cinema in its historic and artistic contexts using the tools of literary analysis, such as characterization, perspective, metaphor, symbolism, allusion, and intertextuality. Emphasis is placed on theories of narrative, genre, and authorship. Works studied include a range of genres (comedies, musicals, film noir, war film) by filmmakers such as Charlie Chaplin, Orson Welles, Alfred Hitchcock, Martin Scorsese, and the Coen Brothers. Students are expected to attend screenings as part of the course requirements. 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 critics and critical traditions; an introduction to literary theory; bibliography and editing; and explication. Prerequisite: English major or permission of the instructor. 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. Prerequisite: CRWR 151, CRWR 157, or ENGL 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: Previous creative writing course. 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 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 324 ISSUES IN BILINGUALISM

This course is a study of current research on literacy and bilingualism from linguistics and related fields. Educational programs as well as related social and political issues are considered. Case studies are used to explore individual experiences. 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 literature. 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. Satisfies one pre-1800 literature requirement for the English major. 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

An in-depth study of British literature of the late 18th century and early 19th century, particularly of the canonical Romantic poets—Blake, Wordsworth, Coleridge, Byron, Shelley, and Keats—and

selected works by their contemporaries, including various women 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 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 post-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 DICKENS

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. Satisfies one post-1800 literature requirement for the English major. 3 semester hours

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, Erdrich, 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 Hawthorne, 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, Chesnut, 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. Satisfies one post-1800 literature requirement for the English major. 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 376 SOUTHERN LITERATURE

A study of fiction, poetry, and drama that depicts the South as a complex and distinctive culture. Works from the antebellum period, the Reconstruction, the Renaissance, and the postmodern or post-Southern era are considered from both a historical and thematic perspective. Authors include Douglass, Poe, Chopin, Faulkner, Welty, Wright, Williams, O'Connor, Dickey, Walker, and McCarthy. 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. Satisfies one post-1800 literature requirement for the English major. 3 semester hours

ENGL 405 WRITING PRACTIS

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. Prerequisites: 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 188, 288, 388, 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 opened to all students who have a natural curiosity about events that often control our global existence. No prerequisites. 3 semester hours

ENVR 171 PRINCIPLES OF ENVIRONMENTAL SCIENCE (SAME AS ESSC 171)

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 173. This course is not open to students who have taken ENVR 100. 3 hours lecture. Prerequisite: none. 3 semester hours

ENVR 172 PRINCIPLES OF SUSTAINABILITY SCIENCE

This course addresses the cultivation, integration, and application of knowledge about our planetary environment from a dimension that considers the dynamics of human-centered environmental activity and systems. This approach is taken to facilitate the evaluation and

implementation of essential interventions that not only promote sustainability but also help arrest conditions that we as a global society must resolve over the next several decades. Specific topic areas include scientific and systems thinking, global climate change, human population growth, sustainable agriculture, ecological footprint analysis, environmental ethics, biological diversity and conservation, solid waste recycling, natural capital and services provided by ecosystems, ecological economics and globalization, alternative energy, green transportation and building design, sustainable architecture, environmental health, and community-based environmental literacy. In addition to the above, this course requires that students engage in real-world problem solving activities and student presentations. 3 semester hours

ENVR 173 INVESTIGATING ENVIRONMENTAL SCIENCE

This is a laboratory course designed to complement ENVR 171. Lab inquiry activities include topics in experimental ecology in model ecosystems, ecosystem modeling, and environmental assessment/environmental quality. There are weekly assignments and/or projects for each topic and a final exam. The class meets three hours weekly. Corequisites: BIOL 161, 162, CHEM 145–148, ENVR 171. 1 semester hour

ENVR 180S SUSTAINABLE DEVELOPMENT: SERVICE LEARNING IN TROPICAL AMERICA

This course introduces students to the concept of sustainable resource development by allowing them to work closely with community members in tropical America that traditionally harness biological resources as a source of income. Students explore how people form a different culture using biological resources to create an income stream that is both continuous and sustainable. Students provide service to the community by helping members develop and refine biological resources for the purpose of augmenting their income. Additionally, students help to direct efforts toward developing sound conservation initiatives. Specific goals focus on maintaining the integrity of the environment along with restoring and repairing areas traditionally degraded by poor land use practices. This experience will help build community spirit and cultural bridges between people from diverse backgrounds. Evening sessions prior to and after the field experience are a part of this course. This course fulfills a science distribution course for non-majors. This course is open to all students. 3 hours lecture. 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 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. No prerequisites. 3 hours lecture. 3 semester hours

ENVR 207 OCEANOGRAPHY (SAME AS ESSC 207)

The world ocean covers 70 percent of the planet's surface making it the most important physical feature on the planet. This course concentrates on the environmental issues that adversely affect the health of the ocean and the biological organisms that live there. These issues are usually a function of human interference and examples are ocean pollution, coral reef destruction, commercial fishing, planetary-scale destructive weather patterns, rising sea levels, loss of marine biodiversity, tsunamis, coastal erosion and dynamic shorelines, and economic resources in the marine environment. The unique biology from

selected ecosystems of the ocean are also studied to emphasize the magnitude of marine biodiversity. No prerequisites. 3 hours lecture. 3 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 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. Lab 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 disposer 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 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 some use of information available on the World Wide Web. Students also solve problems involving 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 232. 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 388 HYDROLOGY

As the human population continues to grow the world's fresh water resources become more important to develop and protect. Fresh water is all connected through the hydrologic cycle, and this course covers the physical aspects and mathematical analysis of each part of the hydrologic cycle. Emphasis is placed on analyzing the hydrologic cycle to support scientific and engineering development of the resource. Select computer models and geographic information system technology are introduced that analyzes rainfall-runoff relationships, large-scale watershed characteristics, surface water flow, and ground water flow. The integration of hydrology and computerized modeling are also studied to support research projects in the hydrologic sciences. Prerequisite ENVR 261. 3 hours lecture. 3 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 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 408 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 299. 1 semester hour

ENVR 409, 410 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 408. 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 purposed 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. This course may count as an economics elective for economics majors only. 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 313 ENTREPRENEURIAL FINANCE

Entrepreneurial activities are the engines that drive most economies. Almost every big business we see today came into existence by virtue of an entrepreneurial action. Yet conventional finance courses do very little to cover the unique financing needs of entrepreneurial firms. This course familiarizes students with financial management of small and medium organizations. The course analyzes specific issues that confront small businesses through their life cycle of development. Issues addressed include valuation, financial planning, performance measurement, obtaining and organizing finance, cost of financial capital, and exit strategies. 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 450 FINANCIAL PRACTICES AND REGULATIONS

The primary objective of this course is to give students to a broad knowledge of the organization, management, and regulation of financial markets, financial products, and financial service providers. This broad exposure is intended to enable participants to familiarize themselves with the ethical responsibilities, regulatory environment, and best practices of the investments and financial services industry. A large number of topical areas of series 63, 65,

and 66 FINRA licensure exams are covered in the course. Please note however, this course should not be considered as a preparatory course for FINRA licensure examinations. 3 semester hours

FIN 453 SEMINAR IN FINANCIAL PLANNING

This is an integrative course that looks at the entire spectrum of the financial services market. Organizational structure in the industry is explored, including the dynamic regulatory environment facing financial services professionals. The focus of the course is on the 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. Prerequisite: FIN 305. 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/no pass 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 non-profit 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 nonprofit 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 401 RESEARCH METHODS

This course provides fine arts majors with the skills needed to engage in research about the arts. It includes instruction in the assessment of sources (both primary and secondary), evaluation of art works, synthesis and presentation of scholarly material, and organization and completion of an analytical essay. This course is intended for sophomores. Prerequisite: Fine arts major or minor. 3 semester hours

ARTS 405 ARTS PRACTIS

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 be 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

ARTS 499 INDEPENDENT STUDY

Individual investigation of a topic in fine arts. Reading, research, consultation, and discussion as required. Credit, scope, topic, and prerequisite to be arranged individually. May only be taken once. 3 semester hours.

ARTS 188, 288, 388, 488, 588

SPECIAL TOPICS IN FINE ARTS

Topics offered in response to student and/or faculty interest. 1–3 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

GENDER AND WOMEN'S STUDIES

GWS 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

GWS 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

GWS 126 WOMEN IN COMPUTING (SAME AS CSCI 126)

In the history of computing, while women have served significant roles, their contributions have often been overlooked. This course provides an opportunity for students to learn about pioneering women of computing and their contributions to the computing field. The course provides a tour through the world of computing by linking various computer science concepts to specific contributions. Students have an opportunity to explore different aspects of computer systems through hands-on activities. While introducing historical perspectives on women in computing, the course also provides an opportunity to learn about modern trends and modern gender issues in computer science, and to learn about online communities for women and girls interested in technology and computing and different organizations of women in computing and technology. This course fulfills the science with laboratory distribution requirement. 3 semester hours

**GWS 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

**GWS 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

GWS 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

GWS 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

GWS 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

**GWS 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

GWS 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

**GWS 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

GWS 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

GWS 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

**GWS 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

GWS 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

GWS 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

**GWS 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

GWS 312 SEXUALITIES (SAME AS SOC 312)

This course looks at sexuality in the broadest sense, which means diversity of sexual practices, behavior, orientation, identity, disease, violence, comparative studies, and research. In covering these topics, students look at sex-related controversies such as birth control, abortion, procreation, symbolic meaning and language usage, school education programs, social control, rape, traffic in women, sex tourism, and commercialization. Through the use of readings, films, and guest speakers, the class applies a historical, transnational, and sociological perspective on sexualities from the past and present, and critical thinking to differences among social groups. The impact of gender, race, class, and ethnicity is integrated throughout the course. Student involvement through discussion, research, and presentations ensure an active and meaningful learning environment. Prerequisites/corequisites: SOC 105 or SOC 204 or junior standing. 3 semester hours

**GWS 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

GWS 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

**GWS 317 SOCIOLOGY OF SEX AND GENDER
(SAME AS SOC 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

**GWS 321 WOMEN IN THE WORLD WARS
(SAME AS HIST 321)**

This course examines the experiences of British, French, German, Russian, and American women on both the home and battle fronts 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

GWS 350 WOMEN AND ART (SAME AS AH 350)

This course looks at studies over the past twenty years which 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. 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

**GWS 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

**GWS 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

GWS 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 social group characteristics. Critiques and innovations in research methodology are also covered. Prerequisite: GWS 101 or permission of instructor. 3 semester hours

**GWS 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

**GWS 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

GWS 394, 395 PRACTICUM

Students work in a sustained and in-depth manner with an organization whose focus is gender related, or on a gender-related project for a more broadly oriented organization. Students meet regularly with the director of GWS, or a designated faculty member or organizational leader, and are expected to write a reflective paper integrating the field work with research and scholarship in both the field of the practicum and gender and women's studies. Permission of the director is required. Open to juniors and seniors. Not available to students who are student teaching. May be taken in one or two semesters. Six credits maximum. Prerequisite: GWS 101. 6 semester hours

GWS 409 SENIOR CAPSTONE

This is a senior level research course in a specialized area of gender and women's studies. Required of all gender and women's studies majors. This is a writing enriched course. Prerequisite: GWS 355 or permission of instructor. 3 semester hours

GWS 499 INDEPENDENT STUDY

The student undertakes independent study of significant issues concerning gender and women's studies. A topic, approved by the instructor, as well as the director of gender and 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 gender and women's studies. Student must have a junior or senior standing. 3–6 semester hours

GWS 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

GERMAN

See courses listed under Modern Languages.

HISTORY**HIST 021 HISTORY PORTFOLIO**

In this course, students compile the portfolios required to complete the history major, selecting their best work in each category. Students also review the two self-assessment essays they completed in the sophomore and senior years. Enrollment is limited to seniors in the history major. Prerequisite: Permission of instructor. 0 semester hours

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. 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. 3 semester hours

HIST 104 WOMEN IN THE WESTERN TRADITION (SAME AS GWS 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 GWS 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. 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. 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 are examined 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 are examined 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 (SAME AS GWS 321)

This course examines the experiences of British, French, German, Russian, and American women on both the homefront and battlefield 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 GWS 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 portentous monstrosities, among 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 study the political, social, and cultural construction of both personal and national memories during and after the wars. Students 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 is studied 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 337 RUSSIA SINCE COMMUNISM

This course examines the political, economic, social, and cultural development of post-Soviet Russia, with particular attention to the impact of the communist legacy after 1991. This examination takes place within the framework of two competing analytical perspectives: 1) Westernism, according to which Russia is in the process of assimilating Western values and incorporating Western institutions, and 2) Traditionalism, according to which Russia is fundamentally different from the West due to its authoritarian, communal, and Orthodox heritage, and thus highly unlikely to adopt Western ways. Primary sources—mainly observer and participant accounts—provide the basic reading for this course. 3 semester hours

**HIST 343 ALLIES, ENEMIES, AND WORLD WAR:
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 SPIES AND LIES:
EUROPEAN DIPLOMACY SINCE 1945**

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 346 MEDIEVAL POPULAR CULTURE:
EUROPE, 1300–1600**

This course examines popular culture in Central and Western Europe during the late Middle Ages. It briefly surveys the historical context

of the period 1300–1600, focusing on the assumptions of the elite, literate establishment. It then considers elements of popular belief, notions of cosmic order and disorder, the customs of the reversible world (carnival), medieval attitudes toward sexuality, and manifestations of anticlericalism. In examining these aspects of the lives of non-elite, "ordinary" people, it pays special attention to the relationship between high and low culture, the use of imagery for the communication of ideas to the illiterate lower classes, and the subversive dimension of popular culture. 3 semester hours

HIST 351 HISTORY OF WOMEN IN AMERICA TO 1870 (SAME AS GWS 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 GWS 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 United States' 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, westward 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 counter-culture, 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 GWS 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 experience 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. Prerequisites: A grade of C or better in HIST 401 and permission of the instructor. 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

BIOL 114 SEX AND CONSEQUENCES (HONORS)

In this course, students examine the scientific evidence for the evolution of separate sexes and of sexual reproduction and analyze some of the numerous biological and social consequences of being a sexually reproducing species. In-class activities include case studies, reflective writing, and both student- and instructor-led discussions. For nonscience majors in the Honors Program in General Education. 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 GWS 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 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

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, Mimesis 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 non-science 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 INTRODUCTION TO LODGING MANAGEMENT

This course provides an overview of lodging management. Emphasis is placed on the management of the room division area of a hotel. Reservations, front office, guest services, registration, night audit, and account settlement functions are discussed. Safety and security, housekeeping, and revenue management areas are also introduced. Students experience the guest cycle through the use of a property management system. Prerequisite: HM 101. 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 arena 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 302 ADVANCED LODGING MANAGEMENT

This course provides an in-depth discussion of lodging management. Emphasis is placed on room pricing structures, revenue and yield management strategies, and hotel operating statistical and financial information. The housekeeping, security and safety, food and beverage, and conference/convention services areas of a hotel are discussed in detail. An overview of hotel technology and current issues and trends in the lodging industry are also addressed. Students experience the RFP process for events and meeting management through the use of an online industry program. Prerequisite: HM 102, ACCT 204, and junior standing. 3 semester hours

HM 304 HOSPITALITY 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 heat, refrigeration, 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 timeshare 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 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 health care, 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 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 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 and HM 401. 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 J. Willard and Alice S. Marriott 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: Junior or senior standing and 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 111 INTRODUCTION TO EAST ASIAN STUDIES

This course introduces East Asian cultures through the classic works of China, Japan, and Korea. Students read various cultural texts such

as fiction, poetry, drama, and prose in English translation. In doing so, students will learn how to appreciate and analyze East Asian texts and will better grasp the cultural legacies of East Asia. Students will develop a more sophisticated understanding of and critical appreciation for East Asian cultures. No knowledge of East Asian languages or prior coursework on East Asian cultures is required. 3 semester hours

HUM 200 LITERATURE OF THE NON-WESTERN WORLD (SAME AS ENGL 145)

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 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 many topics. 3 semester hours

HUM 232 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 interdisciplinary 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 GWS 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). Students may not receive credit for both HUM 340 and 341. 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. Students may not receive credit for both HUM 340 and 341. 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 381 CHINESE CULTURE AND CINEMA

This course examines the cinematic representation of history and culture in Chinese films from China, Taiwan, and Hong Kong. In addition to analyzing historical, political, and social components of the selected films, students develop an understanding of the cross-cultural and transnational traits of Chinese cinema. Through critical analysis and discussion, this course provides an overview of Chinese cinema in response to issues such as national identity, historical trauma, and global consciousness. 3 semester hours

HUM 382 MODERN CHINESE LITERATURE IN TRANSLATION

This course surveys the literary representation of historical, political, and social conflicts in the 20th century of China. This course brings into focus the literary revolution and revolutionary literature in modern China, as well as the writers' political agenda in shaping Chinese modernity. Through close reading and critical discussion, students develop a nuanced appreciation for the literary texts of modern China, Taiwan, and Hong Kong. No knowledge of Mandarin Chinese or prior coursework on Chinese literature is required. 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 six dramas by F. Garcia Lorca: *Blood Wedding*, *Yerma*, *The House of Bernada-Alba*, *Dona Rosita*, *The*

Spinster, 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 strivings 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 GWS 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's 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

In addition to the following MHR courses, see also EC 315 and GWS 315: Women, Men, and Work.

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 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/no pass as a free elective. 3 semester hours

ITALIAN

See courses listed under Modern Languages.

JAPANESE

See courses listed under Modern Languages.

MANAGEMENT

MGT 100 UNDERSTANDING AND WORKING IN ORGANIZATIONS

This introductory course is for freshman business students and students who are undecided about their major. The objective of the course is to develop students' understanding of the fundamentals of how firms work, succeed, and compete in the business landscape. Using the value chain framework, this course exposes students to the general functions of business, how different business activities fit together to make an organization, and what it means to work and manage in different functional areas. Students develop an understanding of how industry dynamics and business activities affect operations and outcomes. The course has a strong career development component. Students participate in activities generated from Widener's Career Services, which include completing a personal assessment of interests, developing a résumé that will be critiqued by Career Services, developing a career action plan, and meeting with Career Services counselors. This course also provides opportunities for students to become more actively engaged in the world of business by learning about local industries and potential employment opportunities. The course plays a key role in establishing a foundation for subsequent courses in the SBA curriculum and uses a learning-by-doing pedagogical model that incorporates hands-on assignments, industry speakers from different functional areas of business, and career development activities. Open to freshman or sophomores. 3 semester hours

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 310 LEADERSHIP

The ability to take charge and lead effectively is critical for success in today's performance-driven workplace. This course helps students develop the self-awareness and professional and interpersonal skills that they need to assume leadership roles in the early phases of their careers. In the area of self-awareness, students develop an appreciation of their own managerial and interpersonal styles. In the area of professionalism, students develop competencies in time management, stress management, and professional and ethical integrity. Finally, students develop interpersonal skills including the ability to communicate, influence, delegate, and empower effectively. They also develop a range of leadership styles and learn to match them to the situation at hand. This course uses a hands-on learning-by-doing teaching approach that includes assessments, role plays, and simulations. Students create a personalized leadership skill development plan that includes a reflective component and action steps. Prerequisite: Junior standing and MGT 210. 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 SENIOR PROJECT (SAME AS EC 451)

This course helps integrate and reinforce concepts, theories, and practices studied in previous coursework and apply them to complex business problems. Successful completion of the course requires students to demonstrate effective communication, project management, and collaborative skills. The class operates in a seminar mode providing opportunities to examine key business, economic, ethical, and environmental issues confronting managers of contemporary organizations. Students complete individual research assignments and report their findings through presentations, papers, and blogs. Student teams complete projects involving complex "real world" business problems or opportunities. They work with local businesses or nonprofit organizations in coordination with the Small Business Development Center (SBDC) to perform a variety of business tasks, including market research, financial projections and feasibility studies, and strategic business plans. Through project teams, students learn about contemporary business issues, develop critical technical and leadership skills, and make a meaningful contribution to the local business community. Prerequisite: Senior standing and completion of all SBA core business 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 all SBA core courses except PHIL 352. 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/no pass as a free elective. 3 semester hours

MGT 499 INDEPENDENT STUDY

Intensive study and analysis of some management topic is culminated with the presentation of a major research paper under the close supervision of an assigned faculty member. Prerequisites: Junior or senior standing and the approval of the faculty advisor. 3 semester hours

(MHR COURSES: SEE HUMAN RESOURCE MANAGEMENT)

MANAGEMENT INFORMATION SYSTEMS

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 managers. Other important factors include how a manager can model and automate decisions to save time and money while delivering quality products and services and how a manager can plan and optimize decisions based upon a given set of parameters. The above factors necessitate an understanding of information technology and its role in business in today's global environment. This course covers the *understanding* of gathering, storing, organizing, and disseminating information so that it can be *utilized* efficiently. It incorporates security of the vital information and the cost of using hardware, software, and personnel. The purpose of this course is to understand the underlying principle of information systems from a user perspective for different management functions. The course surveys the *impact* of current information systems technology on various business functions, including accounting, economics, marketing, human resources, finance, sports management, and international management. 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. Selected sections of this course count toward the SAP Recognition Award. 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 entity-relationship and object-oriented models. Topics include data structures, organization, design, auditing, security, and recovery. A leading commercially available database management system is used, and its 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 370 BUSINESS ANALYTICS

Business analytics uses business programming, the knowledge discovery process, and data mining (with appropriate statistical analyses) to convert massive amounts of data into actionable information. Effective use of business analytics helps an organization build knowledge, improve decision-making, gain new insights, and improve effectiveness. Course topics include business programming, data analysis, data visualization, data mining with statistical analysis, and business communication (written and verbal). The course is taught using a leading data analytics software package. Prerequisite: MIS 180, MIS 290, QA 251, QA 252, and junior standing. 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. The purpose 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 the SAP ERP system. Students are introduced to various modules of SAP and receive basic hands-on experience with SAP. 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 Recognition Award. 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 and the applications in these systems, including decision support systems, group collaboration and support systems, executive information systems, artificial intelligence, expert systems, intelligence agents, organizational learning, and knowledge management. Extensive use of spreadsheets and SAP are incorporated into this course. This course counts toward the SAP Recognition Award. 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 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/no pass 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 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 of the promotional mix. 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 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 are examined and discussed. Technology is explored from the point of view of the technology purchaser and user, so a technical background is not necessary. Projects and exercises 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. Prerequisite: 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/no pass 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 Assessment.

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

course is developmental, it cannot count toward fulfilling the science distribution requirement. It may not be taken after completing any mathematics course with a higher number. 3 semester hours

MATH 111 MATHEMATICAL 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: Humanities or social science major, elementary/early childhood major, or permission of instructor; MATH 101 or at least Level 3 on the Mathematics Assessment. 3 semester hours

MATH 112 MATHEMATICAL 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. Prerequisites: Humanities or social science major, elementary/early childhood major, or permission of instructor; MATH 101 or at least Level 3 on the Mathematics Assessment. 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 at least Level 3 on the Mathematics Assessment. 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 empirical and theoretical probability, principles of counting, 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 at least Level 3 on the Mathematics Assessment. 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, numeration 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 at least Level 3 on the Mathematics Assessment. 3 semester hours

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.

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 at least Level 3 on the Mathematics Assessment. 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 at least Level 4 on the Mathematics Assessment. 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 is emphasized throughout. Credit will not be granted for both MATH 120 and 117. Prerequisite: MATH 101 or at least Level 3 on the Mathematics Assessment. 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 polynomials, rational 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 at least Level 4 on the Mathematics Assessment. 4 semester hours

MATH 132 CALCULUS WITH REVIEW II

The 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 Level 5 on the Mathematics Assessment. 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, and relations. Various proof techniques, including induction, will be taught and used throughout the course. Applications are stressed. Prerequisite: MATH 101 or at least Level 3 on the Mathematics Assessment. 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. 6 semester hours

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 queueing 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

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 done 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-Stieltjes 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. Prerequisites: 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

An 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 hypotheses. 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

MATH 188, 288, 388, 488, 588

SPECIAL TOPICS IN MATHEMATICS

Topics offered in response to student and faculty interest. 3 semester hours each

MEDIA INFORMATICS

MIN 201 SOCIAL MEDIA INFORMATICS (SAME AS COMS 201)

The prevalence of social media in our culture creates an expectation that people communicate through technological platforms more often than traditional interpersonal means. Business and industry professionals market to specific audiences through evolving social media channels. In this course, students actively follow case studies of current social media strategies, compare this activity to national trends, and report their findings to the class. In addition, students learn the value of building social capital, comprehend the newest technological applications, and evaluate social media campaigns. No prerequisites. 3 semester hours

MIN 188, 288, 388, 488

SPECIAL TOPICS IN MEDIA INFORMATICS

Topics offered in response to student and faculty interest. 3 semester hours each

MILITARY SCIENCE

MS 100 LEADERSHIP LAB

The Leadership Lab presents hands-on training in basic soldier skills such as customs and courtesies, drill and ceremony, first aid, weapons employment, and troop movement techniques, as well as leadership training for U.S. Army Officership. Offered fall and spring semesters. Required for and restricted to contracted/enrolled ROTC cadets. 0 semester hours

MS 101 LEADERSHIP AND PERSONAL DEVELOPMENT

MS 101 introduces students to the personal challenges and competencies that are critical for effective leadership. Students learn how the personal development of life skills such as critical thinking, goal setting, time management, physical fitness, and stress management relate to leadership, officership, 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. Open to all students; no military obligation is required for participation in the course. 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. Students 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 students through common experience and practical interaction are critical aspects of the MS 102 experience. Open to all students; no military obligation is required for participation in the course. 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). Students 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). Open to all students; no military obligation is required for participation in the course. 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. Students 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. Open to all students; no military obligation is required for participation in the course. 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.

CHINESE

CHNS 101, 102 ELEMENTARY CHINESE I & II

These courses introduce students to basic Chinese grammar and vocabulary through a variety of speaking, listening, reading, and writing activities. Recommended for students with little or no previous Chinese instruction. CHNS 101, or permission of instructor, is a prerequisite for CHNS 102. 3 semester hours each

CHNS 201, 202 INTERMEDIATE CHINESE I & II

Intermediate Chinese I and II aim to improve students' language skills with regard to daily conversation and specific fields. Students do more oral practice to improve their capacity to communicate with others in Mandarin Chinese. In addition, students learn to read long paragraphs in Chinese and write short compositions. These courses help students become more proficient in real-life situations. The courses are very useful for students who would like to travel, study abroad, and conduct business in overseas Chinese communities like China, Hong Kong, Taiwan, and Singapore. Prerequisite: CHNS 102 or permission of instructor. 3 semester hours each

CHIN 188, 288, 388, 488, 588 SPECIAL TOPICS IN CHINESE

Topics offered in response to student and faculty interest. 3 semester hours each

FRENCH

FREN 101, 102 ELEMENTARY FRENCH I & II

These courses introduce students to basic French grammar and vocabulary through a variety of speaking, listening, reading, writing, and cultural activities. Recommended for students with little or no previous French instruction. FREN 101, or permission of instructor, is a prerequisite for FREN 102. 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 that 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

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. Prerequisite: FREN 202 or consent of the instructor. 3 semester hours each

FREN 303 INTRODUCTION TO FRANCOPHONE CIVILIZATION AND CULTURE

In this course, students explore the diversity of the Francophone world as well as investigate the various Francophone immigrant communities found throughout the United States. Students also study the country of origin of each of these immigrant communities. Students conduct a research project culminating in a written paper in French and an oral presentation on topics related to Francophone culture. Course conducted in French. Prerequisite: FREN 301 or 302 or by permission of instructor. 3 semester hours

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 or 302 or by permission of instructor. 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. Prerequisite: FREN 301 or 302 or by permission of instructor. 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: FREN 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 Sembène. The course is conducted in French. Prerequisite: FREN 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 301 or 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. Prerequisite: FREN 301 or 302 or by permission of instructor. 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 ethnocentrism. 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. Prerequisite: FREN 301 or 302 or by permission of instructor. 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: FREN 301 or 302 or by 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. Prerequisite: FREN 301 or 302 or by permission of instructor. 3 semester hours

FREN 409 SENIOR SEMINAR

Offered in fall semester only. For French majors only. Prerequisite: Senior status. 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

These courses introduce students to basic German grammar and vocabulary through a variety of speaking, listening, reading, writing, and cultural activities. Recommended for students with little or no previous German instruction. GRMN 101, or permission of instructor, is a prerequisite for GRMN 102. 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 that 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. 1 semester hour 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. Prerequisite: GRMN 102 or permission of instructor. 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. Prerequisite: 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

These courses introduce students to basic Italian grammar and vocabulary through a variety of speaking, listening, reading, writing, and cultural activities. Recommended for students with little or no previous Italian instruction. ITAL 101, or permission of instructor, is a prerequisite for ITAL 102. 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. Prerequisite: ITAL 102, or permission of instructor. 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. Prerequisite: 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

JAPN 101, 102 ELEMENTARY JAPANESE I & II

These courses introduce students to basic grammar and vocabulary through a variety of speaking, listening, reading, writing, and cultural activities. Recommended for students with little or no previous Japanese instruction. JAPN 101, or permission of instructor, is a prerequisite for JAPN 102. 3 semester hours each

JAPN 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

JAPN 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. Prerequisite: JAPN 102, or permission of instructor. 3 semester hours each

SPANISH

SPAN 101, 102 ELEMENTARY SPANISH I & II

These courses introduce students to basic grammar and vocabulary through a variety of speaking, listening, reading, writing, and cultural activities. Recommended for students with little or no previous Spanish instruction. SPAN 101, or permission of instructor, is a prerequisite for SPAN 102. 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. Prerequisite: SPAN 102, or permission of instructor. 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 Latin America. Students continue to refine their reading, writing, listening, and speaking skills. Advanced grammar and vocabulary topics are reviewed. Prerequisite: 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. Prerequisite: SPAN 202 or consent of the instructor. 3 semester hours

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 *orfanidad* and other legacies of colonialism and independence. Prerequisite: SPAN 202 or consent of the instructor. 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 or minoring in Spanish. All coursework and class discussions are done in Spanish. Prerequisite: SPAN 302 or consent of the instructor. SPAN 304 or 305 recommended but not required. 3 semester hours

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. Prerequisite: SPAN 302 or consent of the instructor. 3 semester hours

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. Prerequisite: SPAN 302 or consent of the instructor. 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 literature of post-Civil War Spain. Coursework emphasizes critical evaluation and appreciation of the Peninsular literary tradition. Prerequisite: SPAN 302 or consent of the instructor. 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 consent of the 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 consent of the instructor. 3 semester hours

SPAN 316 CERVANTES

A detailed discussion and analysis of the *Quijote*, with reference to the *novelas ejemplares* and the *entremeses*. Prerequisite: SPAN 302 or consent of the instructor. 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. Prerequisite: SPAN 302 or consent of the instructor. 3 semester hours

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. Prerequisite: SPAN 302 or consent of the instructor. 3 semester hours

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. Prerequisite: SPAN 302 or consent of the instructor. 3 semester hours

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. Prerequisite: SPAN 302 or consent of the instructor. 3 semester hours

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. Prerequisite: SPAN 302 or consent of the instructor. 3 semester hours

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 202 or consent of the instructor. 3 semester hours

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 is 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. Prerequisites: 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. Prerequisites: 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. Prerequisites: 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. Prerequisites: 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. Prerequisites: 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. Prerequisites: 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. Prerequisites: 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. Prerequisites: 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. Prerequisites: 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. Prerequisites: 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, or 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 THE 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

MUS 499 INDEPENDENT STUDY

Individual investigation of a topic in fine arts. Reading, research, consultation, and discussion as required. Credit, scope, topic, and prerequisite to be arranged individually. May only be taken once. 3 semester hours

MUS 188, 288, 388, 488, 588 SPECIAL TOPICS IN MUSIC

Topics offered in response to student and/or faculty interest. 1–3 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 the humanities distribution requirement. 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 students to the discipline of nursing. A variety of topics pertinent to professional nursing are presented, including the nursing process, nursing history, professional behaviors, communication, cultural competency, ethical and legal issues, critical thinking, and utilizing the nursing process as a standard for problem solving. Through the service learning and writing requirements, students develop self-awareness of their attitudes, beliefs, and values related to the practice of nursing. The service learning experiences require students to engage in a reciprocal relationship with a service agency, giving the students opportunities for personal and professional growth. The writing requirements focus on reflection on topics that are discussed in the course. This course is designated as a writing enriched and service learning course. Prerequisites: ENGL 101 or 103. 3 semester hours

NURS 201 INTRODUCTION TO INFORMATICS I

This course prepares students to develop basic computer competencies and proficiencies in the identification, access, evaluation, and use of information for nursing practice. The course provides a basic understanding of concepts related to information and communication technology, the use of the computer and managing files, using a word processing application, understanding databases, web browsing, and communication. The context of health information technology in nursing practice is introduced. Prerequisite: Admission to the School of Nursing. 1 semester hour

NURS 205/206 PHARMACOKINETICS AND MEDICATION ADMINISTRATION

These courses are designed to develop a beginning understanding of medication administration and pharmacokinetics. Skills are applied to medication calculation and administration. Basic pharmacological principles are explored. Students also develop an understanding of the processes that are the basis for mathematical applications in medication and fluid administration. Students are guided toward developing their own style of problem solving that promotes conceptual understanding of the underlying concepts of critical thinking

and medication calculation. Students must begin clinical courses in the fall of the academic year immediately subsequent to the successful completion of NURS 205/206. Pre- or corequisites: CHEM 105/106, BIOL 121/123, BIOL 122/124, BIOL 219/220, NURS 125, NURS 261/262. (2 credits theory; 1 credit laboratory; 28 laboratory hours) 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 BIOL 121, 122, 123, 124. Pre- or corequisites: BIOL 219, 220. (2 credits theory; 1 credit clinical; 28 hours clinical) 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 232 RESEARCH DESIGN

This course is designed to promote in students a knowledgeable and enthusiastic interest in research and to provide a beginning foundation for the use of research findings as a basis for nursing practice. Ethical issues in research are discussed. The knowledge gained in this course prepares students to understand the language of research and the steps of the scientific research method. Students gain knowledge to be able to read, interpret, and evaluate selected research studies. Pre- or corequisites: PSY 105, NURS 125, and matriculation. 2 semester hours

NURS 261/262 HEALTH ASSESSMENT

This course, based on Gordon's Health Pattern's Model, provides the nursing student with skills in physical, spiritual, and psychosocial assessment of adult clients. The course assists in development of selected skills in safety, infection control, mobility, and hygiene. History-taking and physical examination techniques presented in the course help students develop strong assessment skills upon which further knowledge and practice can be built. Students learn the nursing process and develop a prioritized plan of care with associated nursing interventions. Fundamental clinical and health assessment skills are demonstrated by the students in the laboratory portion of the class. Students must begin clinical courses in the fall of the academic year immediately subsequent to the successful completion of NURS 261/262. Pre- or corequisites: CHEM 105/106, BIOL 121/123, BIOL 122/124, BIOL 219/220, NURS 125, NURS 205/206. (2 credits theory; 1 credit laboratory; 28 laboratory hours) 3 semester hours

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. Semester hours vary

NURS 301 INTRODUCTION TO INFORMATICS II

This course prepares students to effectively and efficiently use technology to provide safe, quality patient care in diverse health care environments, as well as documentation of patient care, communication, clinical decision making, patient education, and data management in the clinical setting. The course emphasizes the protection of patients' rights in computerized information management. Additionally, this course emphasizes the use of information technology to support evidence-based practice, professional development, and safety, quality, and efficiency in patient care. Prerequisites: All requirements of lower division. 1 semester hour

NURS 305 PATHOPHARMACOLOGY I

In conjunction with Medical/Surgical Nursing I, this first of three pathopharmacology courses introduces students to pathopharmacologic aspects of the adult and older adult in various states of illness. Pathophysiologic and pharmacologic concepts are addressed within Gordon's health patterns of health perception and health management, elimination/nutrition, and activity and rest. Issues related to pharmacokinetics and dynamics, and safe medication practices are presented as they relate to care of adults and older adults. Preventable geriatric syndromes are reviewed and attention is given to adverse drug reactions common to this population. The course provides students with opportunities to learn and demonstrate application of these concepts to nursing. Prerequisites: All requirements of lower division. Corequisite: NURS 330. 2 semester hours

NURS 306 PATHOPHARMACOLOGY II

In conjunction with Medical Surgical Nursing II, this second of three courses introduces the student pathopharmacologic aspects of the adult and older adult in various states of illness. Pathophysiologic and pharmacologic concepts are addressed within Gordon's Health Patterns of nutrition and metabolism, and activity and exercise. Issues related to pharmacokinetic and dynamics, and safe medication practices are presented as they relate to care of adults and older adults. Preventable geriatric syndromes are reviewed and attention is given to adverse drug reactions common to this population. The course provides students with opportunities to learn and demonstrate application of these concepts to nursing. Prerequisites: All requirements of lower division and NURS 305. Corequisites: NURS 331. 2 semester hours

NURS 330 MEDICAL/SURGICAL NURSING INTERVENTIONS: APPROACHES TO THE CARE OF THE ADULT I

In conjunction with Pathopharmacology I, this first of three courses introduces the student to care of the adult in various states of illness. Utilizing Gordon's Health Patterns, nursing process, and nursing diagnoses as organizers, the health needs of individual clients are considered. Mental health concepts, therapeutic communication, developmental stages, culture, gerontological considerations, and nutritional aspects are integrated both in theory and in clinical situations. Foundational skills and pathophysiologic/pharmacologic concepts are addressed within Gordon's health patterns of health perception and health management, elimination/nutrition, and activity and rest. The course provides students with opportunities to learn and demonstrate the nurse's caregiver roles. Prerequisites: All requirements of lower division. Corequisites: NURS 305. (3 credits theory; 2 credits clinical; 84 hours clinical) 5 semester hours

NURS 331 MEDICAL/SURGICAL NURSING INTERVENTIONS: APPROACHES TO THE CARE OF THE ADULT II

In conjunction with Pathopharmacology II, this second of three courses introduces students to care of the adult in various states of illness. Utilizing Gordon's Health Patterns, nursing process, and nursing diagnoses as organizers, the health needs of individual clients are considered. Mental health concepts, therapeutic communication, developmental stages, culture, gerontological considerations, and nutritional aspects are integrated both in theory and in clinical situations. Foundational skills and pathophysiologic/pharmacologic concepts are addressed within Gordon's Health Patterns of nutrition and metabolism, and activity and exercise. The course provides students with opportunities to learn and demonstrate the

nurse's caregiver roles. Prerequisites: All requirements of lower division. Corequisites: NURS 306. (3 credits theory; 2 credits clinical; 84 hours clinical) 5 semester hours

NURS 332 EVIDENCE-BASED PRACTICE

Best clinical practices are based on research. This course introduces the science of evidence-based practice through a synthesis of introductory research knowledge with emphasis on evidence-based nursing practice, enhanced writing, and scholarly exchange. The topics of articulating the clinical questions, finding the evidence, evaluating levels of evidence, and then translating the research into practice are explored. The course focuses on enhancing the student's ability to read, comprehend, evaluate, and apply research evidence to the practice of nursing. This course is designated as a writing-enriched course. Prerequisites: All requirements of lower division, and NURS 301, 305, 330, 340, and 374. 3 semester hours

NURS 333 FAMILY-FOCUSED MATERNAL NEWBORN CARE

This course focuses on the evidence-based nursing care of childbearing women and their families through all stages of pregnancy and childbirth, as well as the first four weeks after birth, including the nursing care of fetus and neonate. This course prepares students to competently apply the theoretical concepts of maternal-child nursing care using evidence-based guidelines in a culturally relevant manner in various clinical settings (home, community, primary care settings, tertiary care settings). Cultural diversity, family dynamics, genetics, financial, and emotional state are important psychosocial components that are addressed in the care of these families. Legal issues, ethical issues, informatics, health policy, research, and trends in maternal and child care in the United States relevant to care of the childbearing families are addressed. Prerequisites: All requirements of lower division. (3 credits theory; 2 credits clinical; 84 hours clinical) 5 semester hours

NURS 334 FAMILY FOCUSED CARE OF CHILDREN

This course focuses upon the child, infancy through adolescence, within a family system. Content is presented to provide students with the knowledge and skills needed to apply the nursing process in activities directed toward assisting in the health promotion and restoration of children and adolescents. Emphasis is placed on the stages of normal growth and development and acute illnesses commonly found in the hospitalized child. Students provide care to children and adolescents in a variety of settings, including hospitals and long-term care facilities. Prerequisites: All requirements of lower division. (3 credits theory; 3 credits clinical; 84 hours clinical) 5 semester hours

NURS 340 GERONTOLOGY

Because of the increasing number of older adults in the United States and the aging of immigrant and refugee populations, nursing will need to address the health care needs of a diverse population of older adults. This course focuses on the physical, psychological, social, economic, and cultural forces that influence the health of this population. A wide range of health care needs, from primary prevention to end-of-life, are explored. Evidenced-based strategies are discussed to help older adults improve and maintain their quality of life by maximizing their health, function, and independence. The emphasis is on healthy aging and the provision of safe, effective, and culturally appropriate care to older adults. This course is designated as a service learning course. Prerequisites: All requirements of lower division. Corequisites: NURS 305 and 330. 2 semester hours

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). Prerequisite: Junior status. Pre- or corequisites: NURS 351 and NURS 352. (3 credits theory; 6 credits clinical; 168 hours clinical) 9 semester hours

NURS 351/353 HEALTH ASSESSMENT WITH LAB

Health assessment is essential to nursing practice and the care of patients. Planning and providing care, whether to one patient or a population, revolves around the ability to obtain an accurate assessment. Experiential learning is an essential component of this course. A thorough assessment includes effective interviewing and communication skills, which will be practiced by taking a thorough health history on a patient. Assessment skills are practiced in the lab every week. Then, once the skills are obtained and practiced, that knowledge is applied to realistic scenarios through role-playing and simulation. At the end of the course, students will be able to use the skills they learned to effectively assess patients in the clinical setting. Students are expected to participate in laboratory sessions as examiners and examinees. Prerequisite: Junior status or registered nurse. (2 credits theory; 1 credit laboratory; 28 hours laboratory) 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. 4 semester hours

NURS 360 CARE OF THE CHILDBEARING FAMILY

The focus of this course is on the evidence-based nursing care of childbearing women and their families through all stages of pregnancy and childbirth, as well as the first four weeks after birth, including the nursing care of fetus and neonate. This course prepares students to competently apply the theoretical concepts of maternal and child nursing care using evidence-based guidelines in a culturally relevant manner in various clinical settings (home, community, primary care settings, and tertiary care settings). Cultural diversity, family dynamics, genetics, financial, and emotional state are important psychosocial components that are addressed in the care of these families. Legal issues, ethical issues, informatics, health policy, research, and trends in maternal and child care in the United States relevant to care of the childbearing families are addressed. Prerequisites: Successful completion of NURS 350, 351/353, and 352. (3 credits theory; 3 credits clinical; 84 hours clinical) 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. Prerequisite: Successful completion of NURS 350, 351/353, and 352. (3 credits theory; 3 credits clinical; 84 hours clinical) 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: Registered nurse or successful completion of NURS 350. (3 credits theory; 2 credits clinical; 56 hours clinical) 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 and the nurse-client relationship. Prerequisites: Successful completion of NURS 350, 351/353, and 352. (3 credits theory; 2 credits clinical; 56 hours clinical) 5 semester hours

NURS 374 KNOWLEDGE SYNTHESIS I

Nursing practice is continually confronted with complex patient situations that require clinical reasoning skills. Competency in nursing practice requires reasonable and reflective decision making. Using an inquiry-based approach, students working in small groups actively participate in problem solving within a case study design. These case studies address important issues in current nursing practice and focus on concepts contained in concurrent clinical nursing courses. Progressive cases are presented that build as complications occur and/or patient situations change. Prerequisites: All requirements of lower division. Corequisites: NURS 301, 305, 330, 333, 334, and 340. 1 semester hour

NURS 375 KNOWLEDGE SYNTHESIS II

Nursing practice is continually confronted with complex patient situations. Competency in nursing practice requires reasonable and reflective decision making. Using an inquiry-based approach, students working in small groups actively participate in problem solving within a case study design. These case studies address important issues in current nursing practice and focus on concepts contained in concurrent clinical nursing courses. Progressive cases are presented that build as complications occur and/or patient situations change. Prerequisites: All requirements of lower division, and NURS 301, 305, 330, 340, and 374. Corequisites: NURS 306, 331, 332, 333, or 334. 1 semester hour

**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. By invitation only. 3 semester hours

NURS 399 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 with the faculty mentor. Open to junior nursing students. Semester hours vary

NURS 405 PATHOPHARMACOLOGY III

In conjunction with Medical Surgical Nursing III, this third of three courses introduces the student to pathopharmacologic aspects of the adult and older adult in various states of illness. Pathophysiologic and pharmacologic concepts are addressed within Gordon's Health Patterns of cognition and perception, activity and rest, metabolism and multisystem issues. Issues related to pharmacokinetic and dynamics, and safe medication practices are presented as they relate to care of adults and older adults. Preventable geriatric syndromes are reviewed and attention is given to adverse drug reactions common to this population. The course provides the student with opportunities to learn and demonstrate application of these concepts to nursing. Prerequisites: All junior level courses. Corequisite: NURS 432. 2 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, analytical, 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, analytical, and critical thinking. By invitation. 3 semester hours

NURS 432 MEDICAL/SURGICAL NURSING INTERVENTIONS: APPROACHES TO CARE OF THE ADULT III

In conjunction with Pathopharmacology III, this third of three courses introduces students to care of the adult in various states of illness. Utilizing Gordon's Health Patterns, nursing process, and nursing diagnoses as organizers, the health needs of individual clients are considered. Mental health concepts, therapeutic communication, developmental stages, culture, gerontological considerations, and nutritional aspects are integrated both in theory and in clinical situations. Foundational skills and pathophysiologic and pharmacologic concepts are addressed within Gordon's Health Patterns. The course provides students with opportunities to learn and demonstrate the nurse's caregiver roles. Prerequisites: All junior level courses. Corequisite: NURS 405. (3 credits theory; 2 credits clinical; 84 hours clinical) 5 semester hours

NURS 440 NURSING LEADERSHIP AND MANAGEMENT FOR THE RN

This course focuses on the synthesis of leadership and management roles and theories. The course facilitates personal growth and professional practice for safe, evidence-based, quality, patient-centered care and clinical outcomes. Student support for professional practice occurs through exploration of competencies in leadership and management, interdisciplinary communication, collaboration, conflict management, teamwork, delegation, prioritization, change, resource management, and decision-making. A guided project provides an opportunity for the student to develop in the roles of leader, manager, and member of a profession. Students use evidence-based practice to design and plan a quality improvement project in an approved health care setting in order to demonstrate and apply knowledge, skills, and attitudes required in professional practice. This is a writing-enhanced course. Prerequisite: Registered nurse. 6 semester hours

NURS 441 HEALTH CARE POLICY FOR THE RN

This course focuses on the economic, political, and social factors that influence and affect nursing care in the 21st century. Students examine the ethical, financial, legal, and social aspects of the health care delivery system and its functions. The course focuses on historical and current processes that shape health care policies, the impact of policy decisions, and how resources can be used effectively with the three main cornerstones of health care delivery: access, cost, and quality. Students discuss the role of information technology in managing health care and the impact on cultural and global trends. This course introduces the role of the nurse as advocate and change agent in influencing policy decisions that improve patient, provider, and system outcomes. It also focuses on strategies for shaping future health care policy and the needs of vulnerable and culturally diverse populations. Prerequisite: Registered nurse. 3 semester hours

NURS 442 NURSING THEORY AND PROFESSIONAL PRACTICE OF THE RN

This course provides an opportunity to explore professional nursing from the perspective of a baccalaureate education. The course is designed to increase the learner's knowledge of the history, philosophy, and conceptual basis of professional nursing. The impact on current trends in health care on the client, the nurse, and the profession are discussed. Prerequisite: Registered nurse. 3 semester hours

NURS 443 POPULATION HEALTH FOR THE RN

This course focuses on clinical prevention and population health across the life span. Biological, psychological, sociocultural, environmental, political, ethical, and economic factors that influence population health and illness are explored, including the contribution of these factors to health disparities. Because the health of a population is contingent upon the health of the individuals, families, and groups that exist within it, both individual and population focused, evidence-based interventions are discussed. Nursing interventions focus on primary and secondary levels of prevention within the context of social justice. This is a service learning course. Prerequisite: Registered nurse. 6 semester hours

NURS 444 GENETICS AND GENOMICS FOR THE RN

This course explores the relationship of genetics and genomics to physiology and pathophysiology. How genes, environmental, and lifestyle factors interact to influence health and illness is explored. The course examines the use of genetics and genomics in a comprehensive nursing health and physical assessment in order to identify factors that predispose clients to disease and affect their treatments and prognosis. The course discusses how nurses incorporate genetics and genomics into their practice to improve clients' health and increase their longevity. Resources to assist clients seeking genetics and genomics screening or services are explored. The ethical, legal, and social issues associated with genomic information are discussed. Prerequisite: Registered nurse. 3 semester hours

NURS 445 NURSING LEADERSHIP

This course focuses on the synthesis of leadership and management roles and theories to facilitate personal growth and professional practice for safe, evidence-based, quality, patient centered care and clinical outcomes. Student support for transition to professional practice occurs through exploration of competencies in leadership and management, interdisciplinary communication, collaboration, conflict management, teamwork, delegation, prioritization, change, resource management, and decision-making. A clinical immersion experience provides an opportunity for the student to develop in the roles of provider of care, manager of care, and member of a profession. Students are placed with faculty and nurse preceptors in a variety of health care settings to demonstrate and apply knowledge, skills, and attitudes required for transition to professional practice. Prerequisites: NURS 405, 432, 465, and 474. (3 credits theory; 2 credits clinical; 84 hours clinical) 5 semester hours

NURS 446 RESEARCH DESIGN FOR THE RN

This course promotes in students a knowledgeable and enthusiastic interest in research. The course provides a beginning foundation for the use of research through a synthesis of introductory research knowledge with emphasis on writing and scholarly exchange. The knowledge gained in this course enables students to understand the language of research and the scientific process. Topics include the language of research, the steps of the scientific research method, and articulating and translating research into practice. Ethical issues in research are discussed. This course focuses on enhancing the students' ability to read, comprehend, critically appraise, and apply the best evidence to the practice of nursing. Prerequisites: Registered nurse, PSY 381 (Statistics). 3 semester hours

NURS 447 EVIDENCE-BASED PRACTICE FOR THE RN

This course promotes in students a knowledgeable and enthusiastic interest in evidence-based practice (EBP). The course provides a beginning foundation for the use of evidence-based practice through a synthesis of introductory research knowledge, with emphasis on evidence-based nursing practice, writing, and scholarly exchange. The course prepares students to understand the steps to implementing evidenced-based practice. Topics include articulating clinical questions, using electronic databases to locate evidence, evaluating levels of evidence, and identifying EBP models used to translate evidence into practice. Ethical issues in evidence-based practice are discussed. The course focuses on enhancing the students' ability to read, comprehend, critically appraise, and apply the best evidence to the professional practice of nursing. Prerequisites: Registered nurse, NURS 446. 3 semester hours

NURS 448 GERONTOLOGY FOR THE RN

Because of the increasing number of older adults in the United States and the aging of immigrant and refugee populations, nursing professionals must address the health care needs of a diverse population of older adults. This course focuses on the physical, psychological, social, economic, and cultural forces that influence the health of this population. A wide range of health care needs, from primary prevention to end-of-life, are explored. Evidenced-based strategies are discussed to help older adults improve and maintain their quality of life by maximizing their health, function, and independence. Ethical issues that affect this population are examined. The emphasis is on healthy aging and the provision of safe, effective, and culturally appropriate care to older adults. Prerequisite: Registered nurse. 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 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. Prerequisites: NURS 363, 364, and either 360 or 361. (2 credits theory; 1 credit clinical; 28 hours clinical) 3 semester hours

NURS 452 CONCEPTS AND ROLES IN PROFESSIONAL NURSING

This course focuses on the synthesis of leadership and management roles and theories to facilitate personal growth and professional practice for safe, evidence-based, quality, patient centered care and clinical outcomes. Student support for transition to professional practice occurs through exploration of competencies in leadership and management, interdisciplinary communication, collaboration, conflict management, teamwork, delegation, prioritization, change, resource management, and decision-making. 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 460 HOME HEALTH CARE

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. Prerequisites: NURS 360, 361, 363, 364, 450, and 452. Pre- or corequisite: NURS 462 and 472. (2 credits theory; 1 credit clinical; 28 hours clinical) 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 long-term 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. (3 credits theory; 4 credits clinical; 112 hours clinical) 7 semester hours

NURS 465 PSYCHIATRIC/MENTAL HEALTH NURSING

This course builds upon the learning activities included in the mental health integration in Medical/Surgical Nursing Interventions and Pathopharmacologic Approaches to Care of the Adult I. 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 and developmental theories are introduced. Clinical practice emphasizes the application of therapeutic communication. This course includes 84 clinical hours. Prerequisites: All junior level courses. (3 credits theory; 2 credits clinical; 84 hours clinical) 5 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. Prerequisite: NURS 471. 1 semester hour

NURS 474 KNOWLEDGE SYNTHESIS III

Nursing practice is continually confronted with complex patient situations. Competency in nursing practice requires reasonable and reflective thinking that is focused on decision making. Using an inquiry-based approach, students working in small groups actively participate in problem solving within a case study design. These case studies address important issues in current nursing practice and focus on concepts contained in concurrent clinical nursing courses. Progressive cases are presented that build as complications occur and/or patient situations change. Prerequisites: All junior level courses. Corequisites: NURS 405, 432, 465, 474, or 485. 1 semester hour

NURS 475 KNOWLEDGE SYNTHESIS IV

This is the final of four courses that provides students with application of nursing knowledge to patient care situations within a case study design. Emphasis is placed on the refinement of critical thinking skills and the integration of a range of therapeutic interventions into nursing practice, including those appropriate to individual clients, their families/significant others, and relevant population groups. The case-based format provides students with opportunities to explore and analyze patient care situations thus helping students to develop high level clinical judgment and decision-making abilities. Prerequisites: NURS 405, 432, 465, 474, or 485. Pre- or corequisite: NURS 445, 465, or 485. 3 semester hours

NURS 485 POPULATION HEALTH

The focus of this course is clinical prevention and population health across the life span. Biological, psychological, sociocultural, environmental, political, and economic factors that influence population health and illness are explored, including the contribution of these factors to health disparities. Because the health of a population is contingent upon the health of the individuals, families, and groups that exist within it, both individual and population focused, evidence-based interventions are discussed. Nursing interventions focus on primary and secondary levels of prevention within the context of social justice. Prerequisites: All junior-level courses. (3 credits theory; 2 credits clinical; 84 hours clinical) 5 semester hours

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 that will assist them in exploring career options available in professional nursing. Prerequisites: NURS 460, 462, and 471. Corequisite: 472. (0.75 credits theory; 3.25 credits clinical; 96 hours clinical) 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 with the faculty mentor. Open to senior nursing students. Semester hours vary

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

Operations management is one of the three major functional fields in business management. This course covers the techniques needed to understand, manage, and improve organizational processes whether within a manufacturing or service organization. Specifically, students evaluate business process flows using financial measures and performance metrics. Various operations techniques are used to determine optimal product mix and appropriate inventory levels. Six Sigma techniques are used to understand variability, process capacity, and process capability. Prerequisites: QA 251 and junior standing. 3 semester hours

OPM 360 PROJECT MANAGEMENT

This course introduces students to the art and science of successful project management with applications in planning, performing, and controlling both technical and managerial projects. Material is presented following the 5 phase project life cycle: initiating, planning, executing, monitoring, and closing. Topics include project management terminology, project selection, forming project teams, project planning, negotiation and conflict resolution, budgeting and costs estimation, project scheduling, project integration, and termination. Prerequisites: ACCT 205, MGT 210, MIS 290, junior standing. 3 semester hours

OPM 375 GLOBAL OPERATIONS MANAGEMENT

This course addresses in detail both the opportunities generated from and the global challenges faced by organizations involved in operations. A main goal of the course is to expose students to how to transform the challenges faced in global operations into actual business opportunities and positive outcomes. It examines the international aspects of quality, productivity, and strategy while addressing concerns of customers, employees, and shareholders. Issues of risks and disruptions faced in global supply chains are covered. Learning is supported by case analysis, empirical findings, and projects. Prerequisite: MGT 365. Corequisite: OPM 352. 3 semester hours

OPM 380 INTRODUCTION TO MANAGEMENT SCIENCE

The primary objective of this course is to introduce students to decision models and quantitative methods for managerial decision making. Topics include mathematical programming techniques, linear, integer, and goal programming, advanced inventory control models, network theory, queuing models, simulation, and game theory. Computer applications play a basic roll in this course. Prerequisite: MATH 117 and junior standing. 3 semester hours

OPM 445 MANAGEMENT OF TECHNOLOGY PRODUCTIVITY AND CHANGE

Continuous improvement, repeated innovation, and rapid technological advances make it necessary for today's companies to successfully manage technology and organizational change. This course prepares students for this environment by familiarizing them with the various aspects of technological and organizational change including the innovation funnel, technology S-curve, managing innovation and intellectual capital, obstacles and pitfalls of technology implementation, and how people within an organization are affected by and react to change. Prerequisite: MGT 210. Corequisite: OPM 352. 3 semester hours

OPM 460 SUPPLY CHAIN MANAGEMENT

A second course in production management, this course covers topics such as production planning, inventory management, sourcing decisions, revenue management, master production schedule, material requirement planning, green supply chains, managing supply chain operations, and other advance topics. During the course, students are exposed to SAP systems and a series of hands-on applications are used. This course counts toward the SAP Recognition Award. Prerequisite: OPM 352. 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. 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. 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. Given every semester. Students may not receive credit for both PHIL 115 and PHIL 116. 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. Students may not receive credit for both PHIL 115 and PHIL 116. 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. 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. 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. 3 semester hours

PHIL 378 PHILOSOPHY OF RELIGION

This 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. 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. Students may not receive credit for both PHIL 380 and PHIL 381. 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. Students may not receive credit for both PHIL 380 and PHIL 381. 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

All physical education courses are offered on a Pass/No Pass basis (there is no letter grade). 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 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

Learn the basics to great cardio health through movement to music. 0.5 semester hours

PE 118 WEIGHT TRAINING

Teaches 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. Discounted cost. Contact Wayne Mumford at 610-872-3483 for complete information. 1 semester hour

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 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 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 141 INTRODUCTION TO BASKETBALL

Students learn the fundamentals and rules to play ball for life. 0.5 semester hours

PE 188A ZUMBA AEROBICS

The latest in Latin Aerobics. Join the fun. 0.5 semester hours

PE 188B ABS, CORE, AND MORE

Tighten and tone. This class will get it done. 0.5 semester hours

PE 188C RUN YOUR FIRST 5K

Get professionally trained to conquer a 3.2 mile run/race. 0.5 semester hours

PE 188D KICKBOXING

Get fit and learn some kickin' self defense moves. 0.5 semester hours

PE 188E PILATES

Improve all areas of fitness in a fun and challenging environment. 0.5 semester hours

PE 188F CARDIO BLAST

Intense cardio training done to a unique beat. 0.5 semester hours

PE 188G POWER WALKING

Low impact, fun and easy way to develop life long fitness. 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

Fall

200A, Football
200B, Women's Soccer
200C, Men's Soccer
200D, Men's Cross Country
200E, Women's Cross Country
200F, Volleyball
200G, Cheerleading
200H, Field Hockey

Spring

200I, Women's Basketball
200J, Men's Basketball
200K, Men's Swimming
200L, Women's Swimming
200M, Women's Indoor Track
200N, Men's Indoor Track
200O, Men's Track
200P, Women's Track
200Q, Men's Lacrosse
200R, Women's Lacrosse
200S, Golf
200T, Softball
200U, Baseball

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 nonscience 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 nonscience 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. Prerequisite: 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, 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 208, 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 by 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 208. 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. Prerequisites: 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. Prerequisite: 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. Prerequisites: PHYS 162 or PHYS 232 and MATH 241. 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 band 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 408 SENIOR THESIS PROPOSAL

Development of a research proposal for a senior thesis. The proposal must be approved by a thesis committee for successful completion. Prerequisites: PHYS 261 and PHYS 263. 1 semester hour

PHYS 409, 410 SENIOR THESIS IN PHYSICS I, II

Independent physics research based on the proposal developed in PHYS 408. Prerequisite: PHYS 408. 2 semester hours each

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 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

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 topics orally. Prerequisite: Senior standing in the physics major. 3 semester hours

PHYS 188, 288, 388, 488, 588

SPECIAL TOPICS IN PHYSICS

Topics offered in response to student and faculty interest. 3 semester hours each

POLITICAL SCIENCE

POLS 101 AMERICAN POLITICAL SCIENCE

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

POLS 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

POLS 204 CURRENT ISSUES IN WORLD AFFAIRS

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

POLS 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: POLS 101. 3 semester hours

POLS 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: POLS 101 or 102. 3 semester hours

POLS 207 POWER AND INFLUENCE: INTEREST GROUPS IN AMERICAN POLITICS

This course evaluates the roles of interest groups in the American political system. Students examine the classic questions of how interest groups organize, develop agendas, and lobby government officials. Special emphasis is placed on exploring the proper role of interest groups in a democratic society. Students also learn how to frame issues and design their own advocacy campaign. Prerequisite: POLS 101. 3 semester hours

POLS 215 ENVIRONMENTAL POLITICS AND POLICY

This course examines the context surrounding the debate, enactment, and implementation of environmental policies in the United States. It will explore the complex interactions between politicians, bureaucrats, pressure groups, and the public on issues of the environment. It will then examine the policies that the political system produces and their effects on American society. The course places a special emphasis on the way in which political actors frame issues related to the environment. No prerequisites. 3 semester hours

POLS 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

POLS 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

POLS 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

POLS 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

POLS 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 to which they belong. Students enrolled in this course are eligible to participate in the model European Union simulation (EuroSim). 3 semester hours

POLS 229 EUROSIM: MODEL EUROPEAN UNION

This course is preparation for participation in EuroSim the European Union simulation. Students conduct in-depth research on the simulation topic and take on roles as prime ministers, other ministers, members of the European parliament, and other EU officials. The venue alternates between the United States and Europe. Students are responsible for costs associated with travel. Prerequisites: POLS 102 or POLS 228 or by permission of instructor. 1 semester hour

POLS 230 POLITICS AND THE MEDIA

A study of the role of mass media in the political system is conducted. 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: POLS 101 or SOC 105 or COMS 130. 3 semester hours

POLS 235 LATIN AMERICA

The 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

POLS 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

POLS 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

POLS 247 VODKA AND CAPITALISM: RUSSIAN POLITICS IN THE 21ST CENTURY

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 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, 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

POLS 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, anticolonialism, North-South relations, containment of communism, military strategy, and American politics. 3 semester hours

POLS 265 POLITICAL AND CIVIC ENGAGEMENT

This course examines the nature and influence of political and civic engagement in American politics. Areas of focus include rights and responsibilities of citizenship, historical trends and generational differences in engagement, and linkages between citizen participation and electoral and public policy outcomes. The course also examines conflicting perspectives on the intersection of civic and political engagement across different academic disciplines. Students are exposed to strategic and tactical elements of effective civic and political activism in the context of national, state, or local election cycles and public policy debates. Prerequisite: POLS 101 or permission of instructor. 3 semester hours

POLS 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: POLS 101 or 102, junior standing, or permission of instructor. 4 semester hours

POLS 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 political science. Prerequisite: POLS 221. 3 semester hours

POLS 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: POLS 101. 3 semester hours

POLS 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. Laboratory sessions provide further opportunities for research skills development. Students are required to take this course in the junior year. 4 semester hours

POLS 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: POLS 101. 3 semester hours

POLS 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: POLS 101. 3 semester hours

POLS 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 rapidly expanding metropolitan areas, conflicts over community participation in the governmental process, and problems of relations between governments at different levels. Political structure and history of Pennsylvania are used for examples. Prerequisite: POLS 101. 3 semester hours

POLS 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: POLS 101. 3 semester hours

POLS 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: POLS 101. 3 semester hours

POLS 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. Prerequisites: POLS 101 and junior standing or permission of instructor. 3 semester hours

POLS 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 Anglo-Saxon 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. Prerequisites: POLS 101 and junior standing or permission of instructor. 3 semester hours

POLS 320 CONSTITUTIONAL RIGHTS AND LIBERTIES

This course is a study of the development of constitutional law relating to the rights of individuals and limitations on the power of government. The course examines the way in which precedents develop, focusing on the Bill of Rights and other relevant portions of the Constitution. Prerequisites: POLS 101 and junior standing or permission of instructor. 3 semester hours

POLS 321 PUBLIC ADMINISTRATION

A study of the process of attaining governmental objectives through large organizations and the types of obstacles that 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: POLS 101. 3 semester hours

POLS 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: POLS 102 or permission of instructor. 3 semester hours

POLS 335 OPENING THE IRON CURTAIN: EASTERN EUROPEAN 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 'Mittleuropa.' 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: POLS 102 or permission of instructor. 3 semester hours

POLS 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: POLS 102. 3 semester hours

POLS 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: POLS 204, 221, or 222. Sophomore standing required. 3 semester hours

POLS 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 POLS 221 or POLS 222. 3 semester hours

POLS 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: POLS 221 or POLS 222. 3 semester hours

POLS 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

POLS 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, 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 for a maximum of 6 credits. 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

POLS 410/411 SENIOR RESEARCH SEMINAR

Preparation of the senior research paper in a specific field of political science. Required of all majors in political science. 6 semester hours

POLS 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

POLS 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

PROFESSIONAL WRITING

PRWR 021 PROJECTS IN PROFESSIONAL WRITING I

This project-based course introduces students to writing, editing, and publishing for media work, primarily on campus; examples include the student newspaper and alumni newsletter. Students are required to participate in campus groups involved in these activities. Does not satisfy humanities distribution requirement. Prerequisite: Permission of instructor. Students may enroll in the course up to three times. Course offered only on Pass/No Pass basis. 0 semester hours

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 humanities distribution requirement. 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 121 PROJECTS IN PROFESSIONAL WRITING II

This project-based course continues the work begun in PRWR 021. Does not satisfy humanities distribution requirement. Prerequisite: 3 semesters of PRWR 021 and permission of instructor. Course offered only on Pass/No Pass basis. 2 semester hours

PRWR 122 PROJECTS IN PROFESSIONAL WRITING III

This project-based course continues the work begun in PRWR 121. Does not satisfy humanities distribution requirement. Prerequisite: PRWR 121 and permission of instructor. Students may enroll in this course up to four times. Course offered only on Pass/No Pass basis. 0.5 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 310 FEATURE WRITING FOR NEWSPAPERS AND MAGAZINES (FORMERLY ENGL 310)

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

**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 humanities distribution requirement. Prerequisite: ENGL 101 or 103. 3 semester hours

**PRWR 330 MULTIMEDIA WRITING FOR
BUSINESS AND TRAINING PROGRAMS (FOR-
MERLY 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 humanities distribution requirement. Prerequisite: ENGL 101 or 103. 3 semester hours

**PRWR 340 COPYWRITING FOR ADVERTISING AND MAR-
KETING (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 humanities distribution requirement. 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 macroediting (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 humanities distribution requirement. Prerequisites: 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 other disciplines 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 390 WRITING FOR THE NONPROFIT SECTOR

This writing-enriched course prepares students to plan, write, and disseminate the types of documents needed by nonprofit organizations in the community. Documents such as grant proposals, branding campaigns, and outreach pieces are examined. Of particular focus is writing within budgetary constraints of the nonprofit sector. This course may be of special interest to students who plan to work in community engagement or with community agencies. Assignments are tailored to the interests of students. This course may have a service-learning component. 3 semester hours

PRWR 395 TOPICS IN PROFESSIONAL WRITING

This writing-enriched course rotates topics in response to student and faculty interest. Topics include sports journalism, environmental advocacy, and international reporting. Does not satisfy humanities distribution requirement. Prerequisite: At least 12 credits in the PRWR sequence, plus permission of the instructor. May be repeated once for credit. 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. May be repeated once for credit. 3 semester hours

**PRWR 410 PORTFOLIO DEVELOPMENT IN
PROFESSIONAL WRITING**

In this course, students completing the minor in professional writing or the certificate in health care writing compile their required professional portfolios, with a reflection paper, documenting their growth throughout the program. Working with the instructor, students assess work from all courses in their program, revise pieces for reviewers' comments, and produce a final version suitable for professional use. This course does not satisfy humanities distribution requirement. Enrollment is limited to seniors completing the minor in professional writing or the certificate in health care writing. Prerequisites: 15 credits in PRWR courses and permission of instructor. Course offered only on Pass/No Pass basis. 1 semester hour

PRWR 188, 288, 388, 488, 588

SPECIAL TOPICS IN PROFESSIONAL WRITING

Topics offered in response to student and faculty interest. 3 semester hours each

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 202 EDUCATIONAL PSYCHOLOGY: EARLY
LEARNERS (SAME AS ED 202)**

This course is an introduction to the application of psychological theories and principles to educational settings for young learners. Topics include basic concepts of measurement and assessment, developmental characteristics of learners, theories of learning and motivation, classroom management and teacher behavior, and individual

differences of young learners. Diversity in family and community contexts, as well as the culture of child development/day care, preschool, and elementary school settings are explored. This is a service-learning course. *Education majors must receive a "B" or better in this course to remain in the Teacher Certification program.* Students can only receive credit for PSY 201 or PSY 202. Prerequisite: 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. Prerequisite: 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 GWS 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 332 (Human Growth and Development I with Lab). 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 ADOLESCENT PSYCHOLOGY
(SAME AS ED 213)**

This course studies human development from the preteen through the late adolescent years. The course addresses physical, intellectual, social, and emotional development. Important topics covered include eating disorders, self-concept, academic achievement, dating, drug and alcohol use, suicide, delinquency, and sexuality. Prerequisite: PSY 105. 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, and 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 220 LEARNING AND MEMORY

This class provides an in-depth look at how animals—including humans—learn about their environment. Students explore topics such as animal behavior, associative learning, classical and operant conditioning, the effects of reward and punishment, and spatial navigation. Students also learn about how the fundamental principles of conditioning and learning are applied in current psychology and research. Prerequisites: 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. Prerequisite: 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. Prerequisite: PSY 105 or SOC 105. 3 semester hours

PSY 248 BRAIN, BEHAVIOR, AND CULTURE

This course explores the relationship between brain and environment, with emphasis on cultural context. For the longest time, it was believed that the brain influences behavior in a unidirectional manner and plasticity was almost absent in all age groups except the youngest (infants and children). Groundbreaking research in the fields of neuroscience and behavioral science together has provided new insights into the way we look into the brain-behavior relationship. Multiple environmental and cultural influences on the brain—including sensory loss, work, language, migration, and emotion—are examined in this course. Prerequisite: PSY 105. 3 semester hours

PSY 250 EFFECTIVE INSTRUCTIONAL PRACTICES AND DELIVERY METHODS FOR ALL LEVELS OF SPECIAL EDUCATION SUPPORT (PRE-K-8) (SAME AS ED 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

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 for a maximum of 6 credits. This course may be used to fulfill one psychology advanced elective based on the area of research. Prerequisites: 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 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. For psychology majors only. Prerequisites: PSY 105 and junior standing. 3 semester hours

PSY 331 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 331; they may not take both. Prerequisites: PSY 105 and PSY 385 (grade C or better). 4 semester hours

PSY 332 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 332; they may not take both. Prerequisite: PSY 105 and PSY 385 (grade C or better). 4 semester hours

PSY 333 FORENSIC PSYCHOLOGY WITH LABORATORY

The purpose of this course is to give students an understanding of the role of psychological research as it pertains to the fields of law and law enforcement. Through lecture and lab activities, students learn about basic methodological issues, lie detection, repressed memories, jury selection, line-up construction, eyewitness identification and testimony, courtroom persuasion, and group decision making. Students use experimental design, existing measures of legal attitudes, and computer technology to design studies to investigate some of the lecture topics. Students prepare laboratory reports using the APA style. Psychology majors only. Students take either PSY 235 or PSY 333; they may not take both. Prerequisites: PSY 105 and PSY 385 (grade C or better). 4 semester hours

PSY 334 CONSUMER BEHAVIOR WITH LABORATORY

Consumer Behavior with Laboratory is a course concerning the processes involved when people acquire, use, and dispose of goods, services, ideas, and experiences. Consumer behavior topics include attitude development and change, product knowledge and involvement, decision-making, learning, personality and social influences such as culture, race, income, age, and social class. In addition, this course is dedicated to learning about the research process in the field of consumer behavior. This includes the responsibilities of the Institutional Review Board, APA style, literature search, descriptive, survey, and experimental research methodologies, statistical analysis, interpretation and presentation of results, and the final written product of scientific work. Students participate in a number of research-related activities, including the replication of important research in consumer behavior as well as conducting their own original research. Psychology majors only. Students take either PSY 203 (Consumer Behavior) or PSY 334 (Consumer Behavior with Laboratory); they may not take both. Prerequisites: PSY 105 and PSY 385 (grade C or better). 4 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 336 GROUPS: THEORY AND EXPERIENCE
WITH LABORATORY**

This course presents students with a general introduction to the influences that small group dynamics have on individual and group behavior. Through readings, lectures, group exercises, and structured observations, students learn about the stages of group development, individual and group goals, and the role membership has on group effectiveness. Prerequisite: PSY 105 and PSY 385 (grade C or better). 4 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 360 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 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 225. 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. This is a course for those seeking to understand statistics as they appear in papers and reports. It is not a course for those who wish to analyze data from their own research. Topics include the interpretation of graphical representations of data, descriptive statistics (such as measures of central tendency and dispersion), and correlation. The interpretation of inferential statistics such as the t-test, ANOVA, and chi-square are also covered. Note that students switching to a social science major will be 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, POLS 310, ENGR 111, ENGR 315, MATH 114, or MATH 373. This course may not be used to satisfy the social science general education requirement. Prerequisite: MATH 101 or at least Level 3 on the Mathematics Assessment. 3 semester hours

**PSY 385 STATISTICAL METHODS WITH
LABORATORY FOR SOCIAL SCIENCES**

Elementary statistics for psychology and other social science majors. Majors from other departments should take PSY 381 instead. This is a course for those who wish to analyze data from their own research, as well as understand the presentation of others' analyses. 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 SPSS, a statistical software package for the behavioral sciences, is emphasized in this course. Students learn how to enter data, analyze and interpret results, and perform a wide range of statistical functions using SPSS. This course is required of majors in criminal justice, psychology, and social work. Majors from other departments are welcome. Students may not receive credit for both PSY 385 and another statistical methods course such as PSY 381, QA 251, QA 252, POLS 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 completion of the math requirement with a grade of C or better. A minimum grade of C in PSY381 will satisfy this prerequisite, but will not satisfy the university math requirement. Must achieve a grade of C or better to advance to PSY 387. 4 semester hours

**PSY 387 RESEARCH DESIGN AND LABORATORY FOR
PSYCHOLOGY (FORMERLY PSY 382 AND 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. Must achieve a grade of C or better to advance to PSY 409. 4 semester hours

**PSY 392 PRE-PRACTICUM/INTERNSHIP
PROFESSIONAL DEVELOPMENT SEMINAR**

In this course, students learn the logistics of setting up a practicum and an internship, ethical and professional development issues pertinent to the sites in which students work, the enrollment process, placement site supervision requirement, matching interests to sites, and interviewing skills relevant to acquiring a practicum or internship position. Students also explore the process of helping and other skill-building techniques, as well as the connection between the practicum/internship experience and future academic and/or occupational goals. The fall professional development seminar is for students planning to do either a practicum or an internship during the subsequent spring semester. The spring professional development seminar is for students planning to do either a practicum or an internship during the subsequent summer or fall semester. The professional development seminar is a prerequisite for the psychology practicum but may be taken during the practicum with permission from the psychology coordinator. Students will not receive credit for both PSY 392 and CJ 392 unless they are dual majors beginning in the fall of 2011. Psychology majors may not take CJ 392 in place of PSY 392 for a psychology practicum or internship. Prerequisites: Two psychology courses at or above the 200 level (one must be in the area of applied psychology) and at least sophomore standing. 1 semester hour

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 75 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 409, 410 SENIOR RESEARCH IN PSYCHOLOGY

This course is a two-semester class that involves team work and is required of all majors in psychology. To successfully complete this class, a student must pass both PSY 409 and PSY 410. Note that if a student successfully passes PSY 409 but does not pass PSY 410, both PSY 409 and PSY 410 must be repeated to meet requirements for graduation. Prerequisites: PSY 330, PSY 385, PSY 387, and three advanced electives. Must have achieved a grade of C or better in PSY 385 and 387. 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 apply the principles and tenets of the field of psychology. Students are required to work 75 hours per three credits under the supervision of the field site supervisor, have regular meetings with the 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 the 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. 6–12 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 STATISTICS

This course is an introduction to basic statistics. Upon completion of the course, students will be able to understand the importance of both descriptive and inferential statistics; display data in tabular and graphical form; apply summary statistics of measures of central tendency and the spread of a distribution; determine the probabilities of different events occurring; distinguish between discrete and continuous distributions and apply the correct distribution to situations; apply the Central Limit Theorem and the sampling distribution of the mean and proportion; distinguish between the concepts of systematic error and random error; apply the standard normal and t distributions to calculate probabilities; calculate confidence intervals for the population mean and proportion. Prerequisites MATH 117 and sophomore standing. Corequisite: MIS 180. 3 semester hours

QA 252 INTERMEDIATE STATISTICS

This course combined with QA 251 provides students with the basic statistical tools for decision-making. At the completion of this course, students should be able to perform one and two population hypothesis testing on population means and proportions; perform chi-square tests for goodness of fit and for independence; perform one-factor and two-factor analysis of variance (ANOVA); calculate a simple regression and the associated statistics; analyze and interpret the output of simple and multiple regression; understand the trend, seasonal, cyclical, and irregular components of time-series; calculate seasonal indices; and seasonally adjust a time-series and perform nonparametric tests. Prerequisites QA 251, MIS 180, 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

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 exploration 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, logical language. One two-hour meeting weekly. Open to all students. Offered only as pass/no pass. It does not count toward satisfying the science distribution requirement. 1 semester hour

SCI 107 FOOD SCIENCE I

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, particularly 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 important transformations these undergo will then be discussed. This course, designed for nonscience majors, cannot be used to fulfill requirements 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 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

**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 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. 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 laboratory hours weekly. 1 semester hour.

SCI 209 FOOD SCIENCE II

A continuation of SCI 107, which surveys the various types of microorganisms. Emphasis is placed on the interactions between microorganisms and man and the significance of microorganisms in the food industry and food-borne diseases. This course, designed for nonscience majors, cannot be used to fulfill requirements for any major or minor in science. Prerequisite: SCI 107 or CHEM 105. Corequisite: SCI 210. 3 hours lecture. 3 semester hours

SCI 210 FOOD SCIENCE II LAB

Lab course designed to be taken with SCI 209. This course is for nonscience majors and cannot be used to fulfill requirements for any major or minor in science. Prerequisite: SCI 107 or CHEM 105. Corequisite: SCI 209. 3 hours laboratory weekly. 1 semester hour

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 contribution 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 225 WOMEN'S ISSUES ACROSS THE LIFE SPAN
(SAME AS GWS 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. Cross-listed as GWS 225. 3 semester hours

SW 229 FAMILIES AT RISK

This course focuses on the dynamics of domestic violence, child abuse, elder abuse, sibling abuse, and single parent and teen-parent families. Students consider illiteracy, homelessness, and substance abuse, among other factors that place families at risk. Students explore prevailing attitudes that shape current social policy. Students are encouraged to exercise creativity in designing alternative models of 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 GWS 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 320 GENERALIST SOCIAL WORK PRACTICE WITH
INDIVIDUALS, FAMILIES, AND GROUPS I**

This is the first of a two-semester sequence designed to provide an overview of generalist social work practice with individuals, families, and groups. The course provides students with the conceptual frameworks and skills for strength-based practice, including the role of values and ethics in informing the process. The purpose of the course is for students to develop skills in establishing helping relationships, engaging clients in the change process, conducting assessments, and collaborative planning. Attention is given to understanding ethnic, racial, and cultural diversity with regard to practice. Each student is required to participate in a service learning experience for 15 hours throughout the semester. This service learning opportunity enables students to practice interviewing skills in an agency-based practice and to evaluate their appropriateness for the social work profession. 3 semester hours

**SW 321 GENERALIST SOCIAL WORK PRACTICE WITH
INDIVIDUALS, FAMILIES, AND GROUPS II**

This is the second course in a two-semester sequence designed to prepare students for social work practice with individuals, families, and groups. Building on the theoretical and experiential learning from the previous semester, students develop skills in assessment and intervention at the micro level, including skills for contracting with clients, developing a treatment plan, and monitoring and evaluating progress. Students develop skills for self-awareness, identification of ethical conflicts and ethical decision making, and working with diverse populations. In addition, students begin developing a professional social work identity in preparation for the senior year field placement. Each student is required to participate in a service learning experience for 15 hours throughout the semester. This service learning opportunity enables students to practice interviewing and assessment skills in an agency-based practice and continue to evaluate their appropriateness for the social work profession. Prerequisite: SW 320. 3 semester hours

**SW 330 HUMAN BEHAVIOR AND
CULTURAL DIVERSITY I**

This is the first half of a two-semester course sequence covering the major traditional and nontraditional theoretical perspectives for understanding human behavior and cultural diversity in the social environment. Students explore theoretical concepts of human development of the self using shifting paradigms and perspectives as an organizing framework. These perspectives include working with individuals, families, groups, communities, and organizations while incorporating a global context. Within this framework, students engage, discuss, and critically analyze important factors of human growth, functioning, identity development, and diversity, including race, gender, religion, ethnicity, class status, sexual orientation, gender identity, and physical ability. In light of these sociocultural dimensions and the aforementioned frameworks, students reflect upon their own personal values, biases, and development through experiential education, including service learning and structured in-class activities. During the first semester, students examine human behavior from traditional and nontraditional theoretical perspectives, including multidimensional development of the self within the context of family, group, community, and organizations. This is a writing enriched and service learning course. 3 semester hours

SW 331 HUMAN BEHAVIOR AND CULTURAL DIVERSITY II

This is the second half of a two-semester course sequence covering the major traditional and nontraditional theoretical perspectives for understanding human behavior and cultural diversity in the social environment. Utilizing the risk and resiliency perspective, students explore theories of human development and cultural diversity using the life cycle as an organizing framework. Within this framework, students engage, discuss, and critically analyze important factors of human diversity, such as, race, gender, gender identity, ethnicity, class status, sexual orientation, and physical ability within different lifecycle stages. In light of these sociocultural dimensions and the life cycle, students reflect upon their own personal development through experiential education, including service learning and structured in-class activities. Particular attention is paid to the application of these theories to understanding the developmental challenges of differing life stages. Implications for social work from micro through macro levels of practice are discussed. This is a writing enriched and service learning course. 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 341 SOCIAL WELFARE HISTORY AND POLICY I

This course provides students with an understanding of the role history and values play in societal responses to social issues and the impact upon social work practice and the development of social work policy. It provides students with an understanding of the differences in the experiences of women, racial, ethnic, and sexual minorities, the poor, and other disenfranchised groups in American society. Students explore the contextual arrangements associated with the development of the social welfare system, as well as gain a philosophical, theoretical, and historical frame of reference for social welfare as an institutional form in society. This is a writing enriched course. 3 semester hours

SW 342 SOCIAL WELFARE HISTORY AND POLICY II

This undergraduate social work course is the second of a two-course sequence examining social welfare policy. The first course (SW 341) focused on the historical development of social welfare policies and services in Western society and their emergence in the United States. A major purpose of this second course is to introduce students to the arena of social welfare policy: the socio-political environment in which social welfare policy is formulated and developed as a species of general public policy in competition with other public policy areas. The course provides an overview of the political and economic dynamics of policy formation, development, and enactment; the roles of various critical actors in the policy-making process; and the issues and components of social welfare policy design. A primary intent is to develop an essential capacity for the examination and critical analysis of social welfare policy. To this end, selected areas of social welfare policy are examined using theoretical and analytical principals that have broad application. This enrichment of students' understanding of the central role of policy in U.S. social welfare and the enhanced ability to scrutinize, analyze, and evaluate current and proposed social welfare policies are primary course objectives. This is a writing enriched and service learning course. 3 semester hours

SW 350 SOCIAL WORK RESEARCH METHODS I

This course is the first of a two-semester research sequence. This course focuses on general research methods and their application to social work. The course introduces students to the scientific method; culturally competent research; protection of human subjects; surveys; experimental, quasi-experimental, and qualitative research designs;

evidenced-based research; measurement; sampling; questionnaire construction; and qualitative data collection methods. Specifically, the course prepares students to 1) design social work research related to needs assessments, program evaluations, and practice evaluations; 2) appreciate and understand the benefits of evidence-based practice; and 3) develop the ability to critically evaluate and consume social work research. These areas of social work research are fundamental components of generalist social work practice with individuals, families, groups, organizations, and communities. 3 semester hours

SW 351 SOCIAL WORK RESEARCH METHODS II

This is the second of a two-semester research methods course. The courses are designed to prepare students to be critical consumers of research. This course covers quantitative data analysis methods, SPSS, questionnaire construction, sampling, and research writing. Prerequisite: SW 350. 3 semester hours

SW 409 SOCIAL WORK CAPSTONE I

This is the first half of a two-semester capstone course incorporating all areas of curricular content experienced thus far. Students collectively and individually initiate a year-long community social problem analysis, including (1) identification and integrated micro and macro assessment of social problems of clients and communities; (2) narrative needs assessment of a specific community social problem; (3) qualitative inquiry of members of said community regarding the social problem; (4) risk and resiliency assessment of the community and individual members; (5) social policy and diversity assessment of community and individual members; and, (6) identification and relevance of community and organizational contexts. Students develop interview protocols, conduct interviews with community members, identify community and organizational social supports, and explore policy implications and relevant sociocultural dimensions. The culmination of this community social problem analysis is the preparation of either a poster or presentation for Undergraduate Student Project Day in the spring semester. Prerequisite: SW 321. 3 semester hours

SW 410 SOCIAL WORK CAPSTONE II

This is the second half of a two-semester capstone course incorporating all areas of curricular content experienced thus far. Students collectively and individually initiate a year-long community social problem analysis, including (1) identification and integrated micro and macro assessment of social problems of clients and communities; (2) narrative needs assessment of a specific community social problem; (3) qualitative inquiry of members of said community regarding the social problem; (4) risk and resiliency assessment of the community and individual members; (5) social policy and diversity assessment of community and individual members; and, (6) identification and relevance of community and organizational contexts. Students develop interview protocols, conduct interviews with community members, identify community and organizational social supports, and explore policy implications and relevant sociocultural dimensions. The culmination of this community social problem analysis is the preparation of either a poster or presentation for Undergraduate Student Project Day in the spring semester. Prerequisite: SW 409. 3 semester hours

SW 420 SOCIAL WORK PRACTICE WITH INDIVIDUALS, FAMILIES, AND GROUPS I

Building on SW 320 and SW 321, this course provides students with the knowledge, skills, and values of generalist social work practice with individuals, families, and groups. It provides students with a multi-theoretical, strength-based, and empowerment approach to engagement, assessment, contracting, intervention, and termination of clients in agency-based practice. The course focuses on social work values and ethics and the needed knowledge and skills to work with micro client systems. Students develop critical thinking skills to understand and begin to integrate the theoretical framework that informs generalist social work practice. Students cultivate cultural sensitivity and the ability to work with diverse populations. Class and field discussions, case presentations, exercises, role-plays, readings, and assignments help students identify with the values and ethics of and become socialized into the social work profession. Students develop the helping relationship skills and purposeful use of self throughout the stages of change and promote critical thinking

and the ability to work with diverse populations. Prerequisites: SW 320 and SW 321. Corequisite: SW 423. 3 semester hours

SW 421 SOCIAL WORK PRACTICE WITH INDIVIDUALS, FAMILIES, AND GROUPS II

This course builds upon the generalist social work foundation provided in SW 420. It provides students with increased knowledge and skills to work with families and groups in agency-based practice. Students focus on case management skills, including related assessment, advocacy, and collaboration with others to obtain needed and at times scarce resources for clients. Students integrate relevant theories and literature into practice and select and use a variety of social work roles and skills in the work with the client. Strategies and techniques for monitoring and evaluating practice interventions are addressed and implemented. Various service systems are explored to give students exposure to a wide variety of populations and agency setting. Critical thinking and experiential learning are paramount throughout the course. Class and field discussions, exercises, readings, professional career and educational presentations, and assignments are directed at increased self-awareness; skill development with individuals, families, and groups; critical analysis to inform practice; effective work with a diverse population; and socialization into the social work profession. Prerequisite: SW 420. Corequisite: SW 424. 3 semester hours

SW 423 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. Students are placed in an agency that allows a range of social work roles and tasks of the generalist social worker. Emphasis is placed on the development of professional abilities and attitudes. May be taken on a pass/no pass basis only. Social work majors only. Prerequisite: Permission of the instructor. Corequisite: SW 420. 3 semester hours

SW 424 SOCIAL WORK FIELD PRACTICUM II

The final practicum continues the experience of SW 423. Students are expected to develop a strong professional commitment and identity and the skills necessary to function effectively as a professional social worker. These skills include the ability to develop and maintain a helping professional relationship with clients, understand social welfare policy as it relates to individual practice, identify and use existing resources, and function efficiently within a social work setting. May be taken on a pass/no pass basis only. Social work majors only. Prerequisite: Permission of the instructor. Corequisite: SW 421. 3 semester hours

SW 440 SOCIAL WORK PRACTICE WITH ORGANIZATIONS

This course helps students better understand social service delivery within the context of human service organizations, communities, and the societal environment. Organizational and community theories are used to help beginning generalist practitioners interpret the context in which they will be working as direct service providers. Issues in service delivery include client and community empowerment and strategies designed to meet the needs of vulnerable and diverse populations. Students are also introduced to administrative roles in social work. Key concepts in this area include grants and development, supervision, leadership, and program evaluation. This is a writing enriched and service learning course. Prerequisite: SW 351. 3 semester hours

SW 441 SOCIAL WORK PRACTICE WITH COMMUNITIES

This course prepares students for generalist social work practice with organizations and communities. The course builds upon the students' conceptual base and skills developed in SW 320 and SW 321 by applying practice skill sets and knowledge base 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 and capacity assessments, community organizing, and community development. Students examine the influence of diversity on the helping process with regard to 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. Students are introduced to various technologies including Geographic Information Systems mapping and online advocacy. The objectives of this course are achieved through field experiences, lecture, class presentations and discussions, guest speakers, reading and writing assignments, and experiential exercises. This is a service learning course. Prerequisite: SW 320 and SW 321. 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 202 SOCIAL ACTIVISM

This course is a service learning course that includes some form of civic/political engagement in the form of social activism. Students learn about social activism by doing it, reflecting on their experiences and doing research related to the activism in which they engage. Experiential learning sites can be found in multiple settings that provide service or take action on behalf of groups or issues where action committees are organized. Social activism offers opportunities to develop leadership skills and work within political/activist organizations. No prerequisites. 3 semester hours

SOC 203 SOCIOLOGY OF YOUTH (SAME AS GWS 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.

SOC 204 SOCIAL PROBLEMS (SAME AS GWS 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. No prerequisite. 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 210 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 215 THE FAMILY (SAME AS GWS 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. 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 GWS 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 245 RAP, HIP HOP, AND SOCIETY

This course explores the contemporary emergence of rap and hip hop culture. The course engages students in listening to music, viewing DVDs, and reading books and articles related to rap, hip hop, and cultural values. Societal issues of social control and freedom of speech are examined. Students explore these issues with the intent to broaden their sociological imaginations. Prerequisite: SOC 105. 3 semester hours

SOC 266 CLASS SOCIETY

This course traces 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 GWS 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 304 FILM AND SOCIETY

Films allow us to understand a little of what it would be like to be someone else—a different race, gender, sexual orientation, class, ethnic group—and to imagine living in another place or time. This class is intended to engage students in social issues through the lens of an art form most of us enjoy but often do not analyze. The goal is to sharpen observations and develop perceptive viewing through the difficult task of total immersion in the film while, at the same time, maintaining objectivity and critical detachment. No prerequisites. 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 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 312 SEXUALITIES (SAME AS GWS 312)

This course looks at sexuality in the broadest sense, which means diversity of sexual practices, behavior, orientation, identity, disease, violence, comparative studies, and research. In covering these topics, students look at sex-related controversies such as birth control, abortion, procreation, symbolic meaning and language usage, school education programs, social control, rape, traffic in women, sex tourism, and commercialization. Through the use of readings, films, and guest speakers, the class applies a historical, transnational, and sociological perspective on sexualities from the past and present, and critical thinking to differences among social groups. The impact of gender, race, class, and ethnicity is integrated throughout the course. Student involvement through discussion, research, and presentations ensure an active and meaningful learning environment. Prerequisites/corequisites: SOC 105 or SOC 204 or junior standing. 3 semester hours

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 GWS 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 modern 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 GWS 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 sociology majors in the social research track. Prerequisites: PSY 385 and SOC 382. 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. Prerequisites: PSY 385 and SOC 382. 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 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

SSCI M906 WORLD GEOGRAPHY

The World Geography module is an introductory survey that examines the relationship between the physical features of the Earth and the various human societies that reside on it. The module introduces the study of geography, the problems geographers encounter, and the methods and tools used to solve these problems. 1.5 semester hours

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 each 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 is studied in terms of its mission, planning and decision-making process, 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. Teams of students will carry out case studies. 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 SENIOR PROJECT (SAME AS MGT 451)

This course helps integrate and reinforce concepts, theories, and practices studied in previous coursework and apply them to complex business problems. Successful completion of the course requires students to demonstrate effective communication, project management, and collaborative skills. The class operates in a seminar mode providing opportunities to examine key business, economic, ethical, and environmental issues confronting managers of contemporary organizations. Students complete individual research assignments and report their findings through presentations, papers, and blogs. Student teams complete projects involving complex "real world" business problems or opportunities. They work with local businesses or nonprofit organizations in coordination with the Small Business Development Center (SBDC) to perform a variety of business tasks, including market research, financial projections and feasibility studies, and strategic business plans. Through project teams, students learn about contemporary business issues, develop critical technical and leadership skills, and make a meaningful contribution to the local business community. Prerequisite: Senior standing and completion of all SBA core business 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/no pass 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 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 the humanities distribution requirement. 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 analyzing 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 the humanities distribution requirement. 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 the humanities distribution requirement. 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 the humanities distribution requirement. 3 semester hours

THTR 121 THEATER FOR YOUNG AUDIENCES II

A continuation of THTR 021. Does not satisfy the humanities distribution requirement. Prerequisites: 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. Prerequisites: THTR 121 and permission of instructor. Students may enroll in the course up to four times. 0.5 semester hours

WIDENER UNIVERSITY

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FACULTY

COLLEGE OF ARTS AND SCIENCES
SCHOOL OF BUSINESS ADMINISTRATION
SCHOOL OF EDUCATION, INNOVATION, AND
CONTINUING STUDIES
SCHOOL OF ENGINEERING
SCHOOL OF HOSPITALITY MANAGEMENT
SCHOOL OF HUMAN SERVICE PROFESSIONS
SCHOOL OF NURSING

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