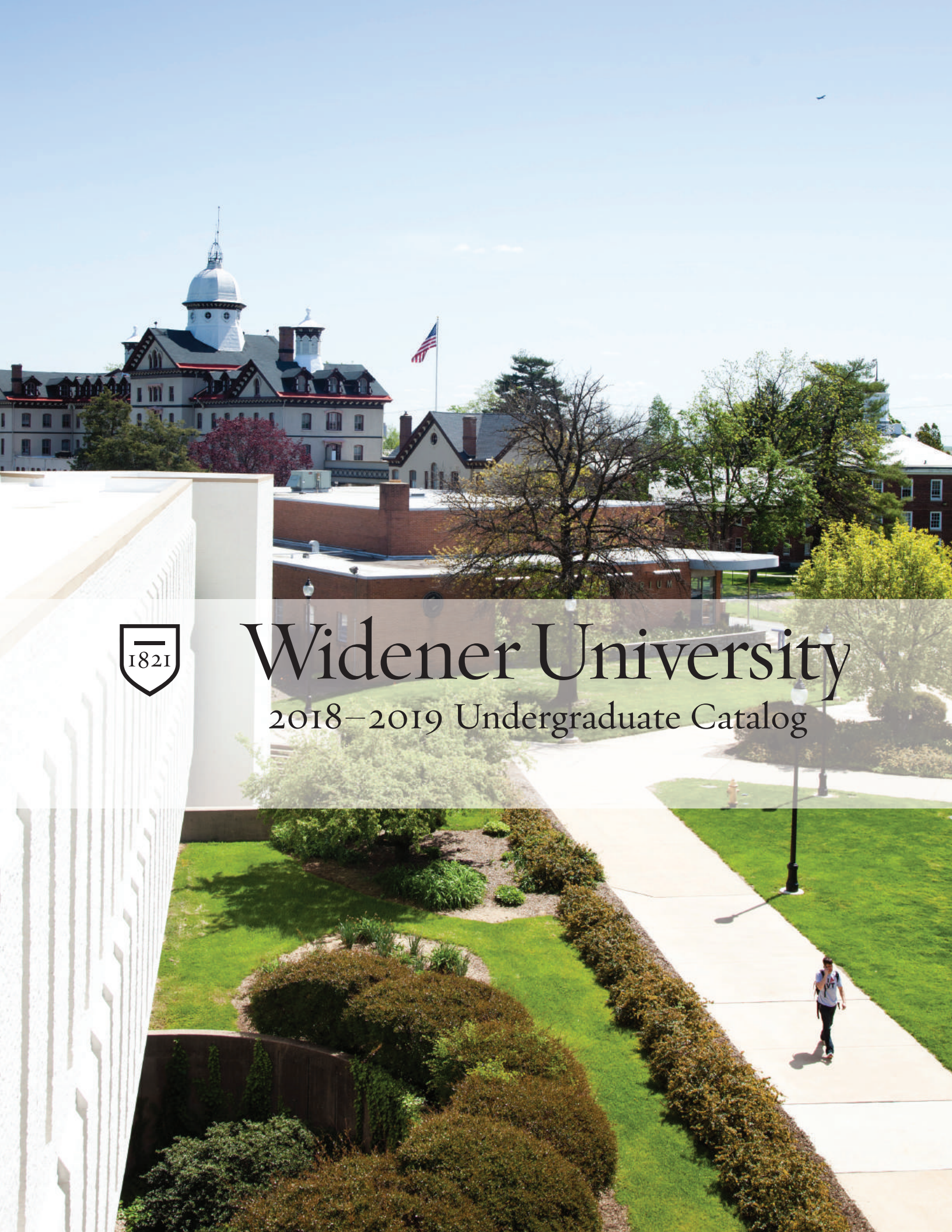




# Widener University

2018–2019 Undergraduate Catalog



# Widener University

## 2018–2019 Undergraduate Catalog

### MAJORS

#### College of Arts and Sciences

- anthropology\*\*\*
- biochemistry
- biology\*,\*\*\*
- chemistry\*
- communication studies (several concentrations available)
- computer information systems
- computer science
- creative writing
- criminal justice
- digital media informatics
- Earth and space science\*
- English\*
- environmental science
- fine arts\*\*\*
- French\*
- gender, women, & sexuality studies
- history\*
- international relations
- mathematics\*
- physics\*
- political science
- psychology\*\*\*
- sociology\*\*\*
- Spanish\*

#### School of Business Administration

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

#### School of Engineering

- biomedical engineering\*\*
- chemical engineering\*\*
- civil engineering\*\*
- electrical engineering\*\*
- mechanical engineering\*\*
- robotics engineering\*\*

#### School of Human Service Professions

- elementary education: the early years/special education
- secondary education (several concentrations available)
- social work

#### School of Nursing

- nursing

#### Sampling of Dual Degree<sup>†</sup> & Double Major<sup>††</sup> Programs

- chemical engineering/chemistry<sup>†</sup>
- creative writing/English<sup>††</sup>
- criminal justice/political science<sup>††</sup>
- environmental science/biology<sup>††</sup>
- fine arts/social work<sup>†</sup>
- mathematics/computer science<sup>††</sup>
- mechanical engineering/physics<sup>†</sup>
- social work/social studies<sup>†</sup>

\*Secondary education certification available

\*\*Cooperative education available

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

<sup>†</sup>&<sup>††</sup> With a dual degree program, the student is matriculated in two different schools/colleges and earns two degrees. With a double major, the student is matriculated in one school/college and earns one degree with two majors.

### 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

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# 2018–2019 Academic Calendar

## FALL SEMESTER

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### AUGUST 2018

- 21 TUE—New student move-in.  
First day of new student orientation.
- 22 WED—Second day of new student orientation.
- 23 THU—Opening faculty meeting.  
Third day of new student orientation.
- 24 FRI—Freshman Advising Day; Convocation  
Fourth day of new student orientation.
- 26 SUN—Check-in for upperclassmen and re-entry students.
- 27 MON—All Main Campus day classes begin.  
Extended Learning classes begin.  
Official start of fall semester.

### SEPTEMBER 2018

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

### OCTOBER 2018

- 8 MON—Freshman pre-advising day.
- 11–12 THU–FRI—Final exams Module I.
- 12–13 FRI–SUN—Homecoming weekend.
- 17 WED—Midterm.  
Deadline for finishing Incompletes from summer 2018.
- 22 MON—Module II begins.
- 22–23 MON–TUE—Fall break (undergraduate classes only).
- 27 SAT—Widener Day I.
- 30 TUE—Last day to drop/add Module II courses.

### NOVEMBER 2018

- 3–9 SAT–FRI—Non-traditional student week.
- 5–9 MON–FRI—International Week.
- 5–23 MON–FRI—Registration for spring 2019 courses.
- 6 TUE—Deadline for withdrawal without academic penalty.
- 17 SAT—Widener Day II.
- 20 TUE—Last day to withdraw from Module II courses.
- 22–23 THU–FRI—Thanksgiving holiday.

### DECEMBER 2018

- 6–7 THU–FRI—Final exams Module II.
- 7 FRI—Last day of classes.
- 8–9 SAT–SUN—Reading Days.
- 10–14 MON–FRI—Final exams for undergraduate day courses.
- 14 FRI—Official end of fall semester.
- 18 TUE—Final deadline for grades.

## SUMMER I & II SESSIONS

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- |                  |   |
|------------------|---|
| May 20–June 2    | Summer Day I—Undergraduate day, Undergraduate Extended Learning, and graduate courses offered.  |
| May 23           | Last day to add/drop classes.   |
| June 17          | Deadline for class withdrawal.  |
| July 1–August 11 | Summer Day II—Undergraduate day, Undergraduate Extended Learning, and graduate courses offered. |
| July 8           | Last day to add/drop classes.   |
| July 29          | Deadline for class withdrawal.  |

## SPRING SEMESTER

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### JANUARY 2019

- 13 SUN—New student check-in.
- 14 MON—No classes; Martin Luther King Jr. Day.
- 15 TUE—Official start of spring semester.  
All Main Campus day classes begin.
- 19 SAT—Widener Day III.
- 22 TUE—Last day for dropping and adding classes.
- 28 MON—Census Day.

### FEBRUARY 2019

- 8 FRI—Last day to petition to graduate for May 2019.
- 15 FRI—Last day to withdraw from Module I courses.

### MARCH 2019

- 1–2 THU–FRI—Module I final exams.
- 1 FRI—Midterm.  
Deadline for finishing Incompletes from fall 2018.
- 4–8 MON–FRI—Midterm break. Network upgrade period.
- 11 MON—Classes resume; Module II begins.
- 18–22 MON–FRI—Honors Week.
- 19 TUE—Last day to drop/add Module II courses.
- 23 SAT—Accepted Student Day I.
- 29 FRI—Spring Holiday.

### APRIL 2019

- 1–19 MON–FRI—Registration for summer and fall 2019 courses.
- 3 WED—Deadline for withdrawal without academic penalty.
- 13 SAT—Accepted Student Day II.
- 17 WED—Last day to withdraw from Module II courses.
- 26 FRI—Student Project Day (no classes).

### MAY 2019

- 1–2 TUE–WED—Module II final exams.
- 3 FRI—Last day of classes.
- 4–5 SAT–SUN—Reading Days.
- 6–10 MON–FRI—Final exams for regular semester courses.
- 10 FRI—Official end of spring semester.
- 14 TUE—Final deadline for grades.
- 17 FRI—Commencement—graduate students.
- 18 SAT—Commencement—undergraduate students.

## SUMMER CO-OP SESSION

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### MAY 20 – AUGUST 11, 2019

- May 20 MON—All co-op classes begin, 8 a.m.
- May 27 MON—Memorial Day holiday.
- May 28 TUE—Last day for dropping and adding classes.
- June 28 FRI—Midterm.  
Deadline for finishing Incomplete grades from spring 2019.
- July 3 WED—Independence Day holiday.
- July 17 TUE—Deadline for withdrawal without academic penalty.
- Aug. 19 FRI—Last day of classes.
- Aug. 10–11 SAT–SUN—Optional final exam period.
- Aug. 14 WED—Final deadline for grades.

## ABOUT WIDENER UNIVERSITY

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### 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 seven 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 and Harrisburg, PA, and Wilmington, DE, serve more than 6,000 students. For more information, go to [www.widener.edu](http://www.widener.edu).

#### 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 three-campus university offering more than 150 programs of study.

#### ACCREDITATIONS

Widener University's graduate programs are additionally accredited by the following: AACSB International—The Association to Advance Collegiate Schools of Business (School of Business Administration), American 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 Collegiate Nursing Education (School of Nursing), Commission on Continuing Legal Education of the Supreme Court of Delaware (Delaware Law School), 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 (Center for Education), Pennsylvania State Board of Nursing (School of Nursing), Pennsylvania Continuing Legal Education Board of the Supreme Court (Commonwealth Law School), Pennsylvania Department of Education (Center for Education), Pennsylvania Department of Welfare (Child Development Center), Pennsylvania Private School Board (Center for Education).

#### 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; Gamma

Eta Rho, human sexuality; Iota Iota Iota, gender and women's studies; Kappa Theta Epsilon, cooperative education; Lambda Pi Eta, communication studies; Omega Chi Epsilon, chemical engineering; Omicron Delta Epsilon, economics; Omicron Delta Kappa, leadership; Phi Alpha, social work; Phi Alpha Theta, history; Phi Beta Delta, international scholars; Phi Eta Sigma, freshman honor society; Phi Kappa Phi, scholastic honor society; Phi Lambda Upsilon, chemistry; Pi Gamma Mu, social science; Pi Sigma Alpha, political science; Psi Chi, psychology; Sigma Pi Sigma, physics; Sigma Tau Delta, English; Sigma Theta Tau, nursing; Tau Beta Pi, engineering; School of Business Administration Honors Program; School of Nursing Honors Program; and Widener University Honors Program in General Education.

## ADMISSIONS

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#### REQUIREMENTS

Applicants undergo individual evaluation to determine their potential for academic success. The university bases its decision on the strength of academic preparation, achievement, 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. Complete the free online application at [www.widener.edu/apply](http://www.widener.edu/apply) and click submit.
2. To access the application, schedule a visit, or request information, visit our website at [www.widener.edu](http://www.widener.edu).
3. Give the Secondary School Report (which you can print) to the principal or guidance counselor at your school. The optional 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. The SAT Subject Tests are not required.

#### 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 or by e-mail at [admissions.office@widener.edu](mailto:admissions.office@widener.edu). Our Widener Day Open Houses are a great way to learn more about Widener.

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](http://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 advised to complete their senior year of secondary school rather than bypassing it in favor of early admission into college. However, there are exceptions, and those students who are clearly ready for college without having completed secondary school are welcome at Widener and may be 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)	
<b>Total .....</b>	<b>13</b>

*Note: Engineering students should at minimum have 4 units of math and science including chemistry and pre-calculus.*

*Note: 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 at [www.widener.edu/apib](http://www.widener.edu/apib).

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 college 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. Applicants for the School of Engineering must achieve a minimum cumulative GPA of 2.50 for consideration. Visit [www.widener.edu/transfer](http://www.widener.edu/transfer) for more information.

After completing the admission application and sending all official 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. If courses are in progress at the time of admission decision, a final official transcript must be submitted prior to matriculation in courses.

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. Students must earn a grade of C or better for credit to be transferred into Widener.

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 21, “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 electronically 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 80, 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 6.5. Official score reports can be forwarded to Widener University using the school code 2642.

SAT or ACT scores are not required if the student is submitting TOEFL/IELTS scores. Merit-based scholarships are awarded based on academic record and SAT/ACT or TOEFL/IELTS

scores. Applicants who are exempt from English proficiency must submit one of the listed test scores for scholarship consideration.

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.

International students who are applying to the School of Engineering or the School of Nursing should go online to [www.widener.edu/international](http://www.widener.edu/international) for additional requirements.

For more information, contact the Office of Admissions.

### **ALTERNATIVE ENROLLMENT PROGRAM FOR NON-DEGREE SEEKING 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, commuter 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. 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.*

### **Financial Aid Services Office**

Lipka Hall: 9:00 a.m. – 5:00 p.m.

Phone: 610-499-4161 Fax: 610-499-4687

E-mail: [finaidmc@widener.edu](mailto:finaidmc@widener.edu)

### **OVERVIEW**

Widener University participates in a wide variety of financial aid programs to assist students and their families in paying for 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. More than 89 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 scholarships based on academic achievement and 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 the selection process which typically occurs in March. To retain 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.

### **NEED-BASED ASSISTANCE**

Financial Aid 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, Financial 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 *Expected 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 Financial Aid 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. Undergraduate applicants for need-based aid are expected to apply for their state's grant program (some 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, Financial Aid 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**

In order 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 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 Financial Aid Services Office.

### **QUALITATIVE MEASUREMENT**

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

<b>Credit Hours Completed</b>	<b>Minimum GPA</b>
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 or more 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 Widener e-mail account. 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 any type of 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. In order 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 Financial Aid 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 beginning October 1, 2017 for the 2018–2019 award year and beginning October 1, 2018 for the 2019–2020 award year. Priority is given to completed applications received by the Financial Aid Services Office by December 15. If requested, students must submit supporting documents necessary to complete their application requests.

Students can access the FAFSA at <https://fafsa.ed.gov>. The student and at least one parent will need to obtain an FSA ID online at <https://fsaid.ed.gov> to electronically sign the FAFSA. More information on applying for aid can be found in the financial aid section of Widener's website at [widener.edu/financialaidoffice](http://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 Financial Aid 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 Federal Pell Grant for 12 semesters or the equivalent the student will no longer be eligible for Federal 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 Federal 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 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 the maximum eligibility for which a student may work and earn as part of the student's aid package. Students may work up to 15 hours per week during any week in which classes are held and up to 25 hours per week during break 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 Financial Aid 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.

### 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. Visit the Financial Aid Services section of Enrollment Services for current loan rates. Interest begins to accrue immediately upon graduating or when the student ceases to be enrolled at least half time.

Effective July 1, 2013, first-time Federal Direct Subsidized Loan borrowers are limited in the amount of time they can receive Federal Direct Subsidized Loans. (First-time borrowers are students with no outstanding federal loan balance as of July 1, 2013.) Borrowers may receive Federal Direct Subsidized Loans for no more than 150% of the length of the student's current academic program (e.g., 6 years for a 4-year program). Once students reach the 150% time limit, they will not be eligible for any further subsidized loans. If students reach the 150% time limit and continue to enroll, they will lose the interest subsidy on the subsidized loans they borrowed in the past. Students who have reached the 150% limit remain eligible for Federal Direct Unsubsidized Loans. The time limit for borrowing subsidized loans will be adjusted to reflect part-time attendance and attendance for only one semester.

### 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. Visit the Financial Aid Services section of Enrollment Services for current loan rates. 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.

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

To apply for a Federal Direct Loan, you must complete the FAFSA. In order 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 FSA ID to sign your MPN electronically. The FSA ID 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.

Entrance counseling can be completed at <https://student-loans.gov>. You will need your FSA ID 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, minus a small origination fee, will automatically be credited to your student account once classes have begun, 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 Financial Aid 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 who are not in default of a federal loan 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 (some 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 25 hours per week during vacation periods. (Contact Financial Aid Services for information.)

**WIDENER SCHOLARSHIPS**—Each year, Widener offers a number of scholarships to academically talented students. These scholarships, ranging from \$9,500 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 combined score of 1410, ACT of at least 30, a grade point average of 3.5, 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**—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 College of Arts and Sciences, with strong preference given to a declared science major. 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 Sheilagh Karl in memory of Laila Al-Saleh, this partial scholarship is awarded annually to a rising senior undergraduate in the School of Nursing. The recipient must demonstrate financial need and a commitment to community service.

**Alumni Engineering Scholarship**—This partial scholarship, created by an anonymous alumnus, is awarded to a second semester or above engineering student making meaningful contribution to college life with at least a 2.5 GPA who demonstrates financial need. This scholarship is renewable.

**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.

### 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.*

**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.

**Leo and Julia 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.

**Boeing Engineering Scholarship**—Established and funded by The Boeing Company, this scholarship is awarded to a student in the School of Engineering based on recommendations from engineering faculty. Boeing has been a steadfast supporter of higher education at Widener for several decades.

**Boeing School of Business Scholarship**—Established and funded by The Boeing Company, this scholarship is awarded to a student in the School of Business Administration based on faculty recommendations. Boeing has supported higher education at Widener for many decades.

**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. Requires a GPA of 3.0.

**Dermatological Nurses' Association Gil and Carol Cacciutti Nursing Scholarship**—Established in honor of Mr. Gilbert Cacciutti, a '67 PMC alumnus, and his wife Carol, by Mr. Anthony J. DelVacchio Jr. '67 and Ms. Bonita Weyrauch, then President of the Dermatology Nurses' Association, this partial scholarship is awarded to a student pursuing a degree within the School of Nursing. The recipient must demonstrate both academic merit as well as financial need.

**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. Must maintain a GPA of 2.5.

**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.

**Walker Carter Memorial Scholarship**—Created in memory of Walker L. Carter '78, this partial scholarship is awarded to an incoming freshman student who is a resident of the city of Chester, Delaware County at the time of application, is active in student activities and demonstrates financial need.

**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 (minimum 3.25 GPA) and financial need. This scholarship is renewable. If conditions cannot be met, faculty may award to the most deserving student closest to the outlined criteria.

**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.

**Cristo Rey Philadelphia High School Scholarship**—This partial scholarship is awarded to a graduate of Cristo Rey Philadelphia High School who is a full time student maintaining satisfactory academic record and demonstrating financial need.

**Kenneth and Mary Dale Scholarship**—This scholarship was established by the late Mary E. Dale in honor of her husband, the late Kenneth S. Dale '76H. During his career, Mr. Dale was very connected to Chester, working with the Chester YMCA and the Crozer-Chester Medical Center. Mrs. Dale was an active community volunteer. This scholarship provides tuition assistance to deserving undergraduates who exhibit outstanding academic merit and demonstrate financial need. The scholarship is renewable with a minimum 3.0 GPA.

**Donald J. Daley Scholarship**—This renewable 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 who was a 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.

**The John A. and Hugh-Leene Dornsife Endowed Scholarship Fund**—This renewable 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 (minimum 3.0 GPA).

**Eleanore Dower Nursing Award**—An anonymous donor created this scholarship to honor Professor Eleanore O. Dower, a former nursing professor. This scholarship is awarded to a senior nursing student with a high academic average and financial need. Must maintain a GPA of 2.5.

**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. Requires a 3.0 GPA.

**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 (minimum 3.0 GPA), 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.

**Andrew D. Field '77 Endowed Scholarship**—Established by Mr. Andrew D. Field '77, this partial scholarship is awarded to a student who demonstrates financial need.

**Albie Filoreto Scholarship**—Created by John D. '63 and Maryann '63 Dishaw in memory of classmate Albie Filoreto '63, this partial scholarship is awarded to an incoming freshman who has a minimum 2.5 GPA pursuing a course of study in the College of Arts and Sciences and demonstrating 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 Jeanne Gelman Endowed Scholarship**—Established by Professor Emerita Jeanne Gelman, this partial scholarship is awarded to a nursing student demonstrating financial need.

**General Adult Scholarship**—This partial scholarship is awarded to an undergraduate, non-traditional student. The scholarship was created in the early 1990s through the generous contributions of alumni from University College, and donations from the college's own staff and faculty members.

**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 or is a veteran of the Armed Forces and participate in university-sponsored extracurricular activities or be active in community service projects. The student shall demonstrate leadership skills and financial need.

**John L. Geoghegan '63 Social Work Scholarship**—Established by the parents of John L. Geoghegan '63, this partial scholarship is to be awarded to an undergraduate student majoring in social work who demonstrates 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.

**George W. Graner Scholarship**—Established by Mr. George W. Graner, a '66 PMC alumnus and Vietnam veteran, this partial scholarship will be awarded to a student pursuing a degree within the School of Business Administration demonstrating financial need. The scholarship is renewable annually throughout the student's uninterrupted study at Widener pending satisfactory academic performance as determined by the university's academic policy.

**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**—The Edith Hannum Scholarship was created through an estate gift by the late Edith P. Hannum, a

Haverford Township commissioner who served that community for over 45 years and tireless public library advocate. Preference for the scholarship is given to adult female students, 24 years of age or older. Applicants are judged on financial need, educational and professional goals, and academic potential. The scholarship may be renewed with a minimum 3.0 GPA.

**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.

**The James Thomas and Carolyn Sue Harris Scholarship**—This partial scholarship is to support a sophomore or higher student who exhibits active commitment to community service and appropriate academic progress. Preference is given to students demonstrating financial need.

**George '92 and Nancy Hassel Endowed Scholarship**—At least one partial scholarship awarded to a student with demonstrated financial need. Renewable if student remains in good academic standing.

**The Leona Hayman Nursing Scholarship Fund**—Established by Ms. Charmane Hayman Sellers in honor of her late mother Ms. Leona Hayman, this partial scholarship is awarded to upperclassmen in the School of Nursing who demonstrate academic merit (minimum 3.0 GPA) and financial need. Preference is given to a single parent; a graduate of Chester High or a surrounding region of Delaware County, PA; a resident of the City of Chester, PA; or an adult student 25 years of age or older. The recipient is chosen with input from the dean or the dean's designees.

**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.

**Robert L. Hoffman '49 Endowed Scholarship**—At least one partial scholarship for an engineering student who has maintained a satisfactory academic record and demonstrates financial need.

**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.

**Isobel O. Jones Endowed Nursing Scholarship**—Inspired by a Widener University nursing student, Mrs. Isobel O. Jones established this scholarship to demonstrate respect for the work that nurses do. This scholarship is awarded to a student in the School of Nursing.

**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.

**The Lenore and Howard Klein Endowed Scholarship**—Partial scholarship awarded to an adult parent pursuing an undergraduate degree demonstrating financial need. Preference given to a parent.

**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, without judicial sanctions, who is active in service to the community and demonstrates financial need. This scholarship is renewable if good academic standing is maintained.

**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.

**Nathaniel and Shirley Kornfield Scholarship**—This scholarship was established by Dr. Nathaniel Kornfield, a former Widener faculty member and his wife Mrs. Shirley Kornfield. This partial scholarship is awarded to an undergraduate student in good academic standing in the School of Engineering. The scholarship may be renewed if the student continues to meet the criteria.

**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.

**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, Cape May, or Cumberland 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 Thomas E. Leet, class of 1917 and former faculty member, 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. If no ROTC student is identified, it may be awarded to a non-ROTC student. 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 rising juniors 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 aspects of commerce. The recipient shall provide evidence of financial need.

**The Maguire Scholars Endowed Scholarship**—Established by the The Maguire Foundation, this scholarship will support 3-5 undergraduate students who are a graduate of one of the Maguire Scholars high schools in the Philadelphia area who have a cumulative 3.0 GPA, an active commitment to community service or civic engagement and an Expected Family Contribution (EFC) of \$5,000 or less.

**The J. Willard and Alice S. Marriott Foundation Scholarship**—This partial scholarship is support students in the Center for Hospitality Management who demonstrate financial need.

**MBNA Scholarships**—Funded by MBNA America, partial scholarships are awarded annually to residents from Wilmington or elsewhere in the state of Delaware who demonstrate financial need.

**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 (minimum 2.5 GPA).

**George William and Ruth Axtmeyer Miller Scholarship**—Created by Winton A. Miller '55 to honor his parents, George William and Ruth Axtmeyer Miller, this partial scholarship is awarded to a female student who has successfully completed her sophomore year with a minimum 3.0 GPA toward a degree in electrical 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 health professions 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 health professions program committee.

**Ralph P. Muller and Alice B. Muller Endowed Scholarship**—Created by Ralph '62 and Alice Muller, this renewable partial scholarship is awarded to a student pursuing an undergraduate degree who has been impacted by an immediate family crisis and demonstrates financial need.

**General Carl E. Mundy Jr., USMC (Ret.) and Linda Sloan Mundy Marine Scholarship**—Established by '67 PMC alumnus and Trustee Thomas H. Bown II and Bonnie Bown, the General Carl E. Mundy Jr., USMC (Ret.) and Linda Sloan Mundy Marine Scholarship will match the amount students receive from the Marine Corps Scholarship Foundation up to \$5,000 per year for four years. The scholarship shall also provide \$5,000 per year to any direct descendant of General and Mrs. Mundy for up to a maximum of four years as a Widener University student in good standing. The scholarship is named in honor of General Mundy, a Vietnam veteran, retired Marine Corps Commandant, and former USO executive.

**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. Requires a minimum 3.5 GPA. 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**—The Charlotte W. Newcombe Foundation Scholarship supports the completion of bachelor's degrees for mature female students 25 years of age or older who are in need of financial assistance. The scholarships

reduce dependence on loans and recognize the challenges faced by mature women who seek higher education while juggling family and work commitments. For more than four decades, the foundation has generously supported higher education opportunities for female students at Widener. The Charlotte W. Newcombe Foundation was created through a bequest by the late Mrs. Charlotte W. Newcombe, a notable Philadelphia philanthropist. The foundation supports students in their pursuit of higher education. Through grants to colleges and universities, the foundation's scholarships and fellowships assist mature female students, students with disabilities, economically disadvantaged students, and doctoral students researching ethical and religious views.

**Leo A. Orlowsky Scholarship**—This award was established by the late '79 Brandywine College alumna Mrs. Marlene A. Orlowsky in memory of her late husband, Mr. Leo A. Orlowsky, a '59 PMC alumnus. The fund provides scholarship(s) of at least \$1,000 each to Widener University students who display exceptional service and dedication to the university's athletic program as non-players.

**Osher Reentry Scholarship**—Established by The Bernard Osher Foundation, this tuition-only scholarship is awarded to undergraduate, non-traditional students who have experienced a cumulative gap in their education of at least five years. Preference may be given to students between 25-50 years of age. The award is based on financial need and academic merit. Students who receive this scholarship are referred to as Osher Reentry Scholars. The Bernard Osher Foundation provides post-secondary scholarship funding to colleges and universities across the nation, with special attention to reentry students. In addition, the Foundation supports a national lifelong learning network for seasoned adults. Widener University is proud to have an Osher Lifelong Learning Institute, along with 115 other institutions of higher education throughout the United States.

**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.

**The Savas and Mary Elizabeth Özatalay Scholarship**—This scholarship was established by Dr. Savas Özatalay, dean of the School of Business Administration, and his wife Mrs. Mary Elizabeth Özatalay. This scholarship is awarded to a freshman majoring in economics or finance who demonstrates academic merit and financial need. The scholarship must be used toward tuition costs and can be renewed for an additional three years as long as the recipient maintains eligibility.

**Aram S. Papazian Scholarship**—Established by family, fellow alumni, and friends of Aram S. Papazian '58, at least one partial renewable 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.

**Louis Pellegrini Family Annual Scholarship in Accounting**—Established by Mr. Frank L. Pellegrini, a '66 PMC alumnus, this partial scholarship is awarded to a School of Business Administration student majoring in accounting who demonstrates financial need.

**PMC 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.

**John and Anne Poulin Endowed Scholarship for the Center of Social Work**—Established by Dr. John Poulin, professor and associate dean of the School of Human Service Professions, and his wife Mrs. Anne Poulin, this scholarship is awarded to a bachelor of social work (BSW) or master of social work (MSW) student (an MSW student must have a 3.5 GPA). The recipient must have an interest in community service.

**Rotary Club of Chester Scholarships**—The Rotary Club of Chester provides 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.

**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.

**Sartomer CEO Scholarship**—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.

**The Herman M. Saunders Memorial Scholarship**—Created in memory of Herman M. Saunders '97 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 (minimum 3.0 GPA) 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 demonstrate financial need.

**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. If no electrical engineering student is identified, other engineering majors may be considered.

**Sons and Daughters of Italy Scholarship**—Established by the Historic XII October Lodge #486 of Chester, PA Sons and Daughters of Italy of PA and the Former Columbus Center Association in remembrance of the Italian Immigration of the City of Chester at the turn of the 20th century, this partial scholarship is awarded to a full-time student in good academic standing with a demonstrated appreciation for the study of the Italian language and/or the Italian culture. Preference will be given to a student who is minoring in Italian studies, engaged in the Italian studies program activities, and enrolled in Italian courses at Widener.

**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.

**Ron and Rita Stead Endowed Scholarship**—This endowed scholarship, established by Dr. Ronald S. and Mrs. Rita C. Stead, supports an incoming freshman or transfer student who is in good academic standing and is seriously interested in a career in education or public service. The student must demonstrate humane values and a service orientation in his or her high school or other activities.

**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 Dauntless 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.

**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.

**Ukrainian Scholarship Fund**—This endowed scholarship, established by Mr. Peter B. Zacharkiw '72, '77M, and his friends, supports a full-time undergraduate student of Ukrainian decent. An essay is required that describes how the student's education at Widener can help the Ukraine. The recipient must

also be willing to volunteer at the Ukrainian Cultural Center in Philadelphia.

**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.

**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 gold 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](http://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 gold 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 \$2,500 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 Dauntless 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.

**Tri-State Training Scholarship**—Established by the Tri-State Training & Safety Consulting LLC, this partial scholarship is to be awarded to a nursing student with an outstanding academic record and GPA of 3.0 or higher who demonstrates financial need. Preference will be given to any student who can demonstrate proof of good samaritanism through the use of CPR and/or experience in administering other first aid techniques in real world situations.

## 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](http://www.widener.edu/vets) or contact the coordinator of Veterans Affairs in Enrollment Services at 610-499-4414. The coordinator's office is open Monday–Friday, 9 a.m. to 5 p.m.

## BILLING INFORMATION

A complete listing of tuition rates, mandatory fees, dining and meal plans, residence hall rates, and more can be found on the Office of the Bursar's webpage: Go to [widener.edu/bursaroffice](http://widener.edu/bursaroffice) and click on the [2018-2019 Undergraduate Programs.pdf](#) link in the "2018-2019 Tuition Rate and Payment Guides" section.

### BILLING AND STUDENT ACCOUNT STATEMENTS

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](mailto: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 2018: Due May 22, 2018**

*Note: Due date may vary. Tuition and fees are due on the first day of classes. For most students, this date will be May 23, 2016. 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 2018: Due August 10, 2018**

**Spring Semester 2019: Due January 16, 2019**

### 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 (Visa, 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](mailto:enrollmentservices@widener.edu).*

*\* Credit card payments are charged a 2.75% service 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' web page [widener.edu/bursaroffice](http://widener.edu/bursaroffice), e-mail [enrollmentservices@widener.edu](mailto: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 date. Refer to [widener.edu/bursaroffice](http://widener.edu/bursaroffice) and click on the [2018-2019 Undergraduate Programs.pdf](#) link in the "2018-2019 Tuition Rate and Payment Guides" section. 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 direct deposit 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](mailto:enrollmentservices@widener.edu).

## 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 Safety 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 Safety Reports contain 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 annual Campus Security and Fire Safety Reports are available online:

**Main Campus:** [www.widener.edu/campusafety](http://www.widener.edu/campusafety)

**Delaware Campus:** [delawarelaw.widener.edu](http://delawarelaw.widener.edu) and click on Current Students then Campus Safety.

**Harrisburg Campus:** [commonwealthlaw.widener.edu](http://commonwealthlaw.widener.edu) and click on Current Students 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.

## 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.*

\*\**In courses designed with coursework that spans beyond a single semester, faculty have the option to assign an IP grade. The intent to use an IP grade for a course should be indicated in the grading policy of the course syllabus, and the faculty should specify when the final grade will be issued to the student. A final grade for a course that could not be completed during the timeframe of the semester must be issued by the end of the following semester. A final grade for the first semester of a two-semester course must be issued by the end of the second course.*

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. Forms are available from advisors. Forms must be completed and submitted to the Registrar prior to the end of the drop-add period at the start of the semester in which the course is taken with this option. Whether they receive a grade of pass or no pass, the 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").
- 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 grade point 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. 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 has no probationary status, each school/college may place specific requirements and conditions upon students to promote academic success. Students should follow the guidelines outlined in the "Standards for Academic Progress and Conditions for Reduced Load and Overload."

### 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 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](http://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  
theater

### Science and Mathematics

astronomy  
biology  
chemistry  
computer science (excluding CSCI 101–124)  
earth and space science  
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 (excluding COMS 217, 260, 262, 264, 265, 266, 309, 317, 360, 362, 364, 367, 368, 384, 395)  
political science  
psychology (excluding PSY 381, 382, 383, 384, 385, 395, 409, 410, 419, 423)  
sociology

### Gender, Sexuality, and Women's Studies

GWS 101 (humanities or social science), 355

## 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	SCI 088

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

## DUAL DEGREES AND DOUBLE MAJORS

Students may take two majors at Widener. To do so, students must be accepted in both and are required to complete all of the requirements for each major. This is done by choosing courses that apply to both and using electives toward fulfilling the remaining requirements of the other major. Students who choose majors in separate schools/colleges will earn two degrees, known as a dual degree. An example is the physics/mechanical engineering dual degree program within the College of Arts and Sciences and School of Engineering. Students who choose two majors within the same college/school, except the School of Engineering, will earn one degree that lists both majors. An example is the criminal justice/sociology double major within the College of Arts and Sciences. The School of Engineering awards dual degrees if students choose two engineering majors. An example is the biomedical/mechanical engineering dual degree program.

## 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:

### FIRST-YEAR WRITING

All students complete the first-year writing course ENGL 101 Reading, Thinking, and Writing, except honors students who complete ENGL 103 Freshman Honors English. Students are placed into ENGL 101 based on their reading and writing SAT scores. Students scoring 450 and above are placed into ENGL 101. Students scoring below 450 are placed in a “double-letter” section (101AA, 101BB, etc.); these require an additional contact hour per week for more intensive skill-building and individualized attention from instructors. Sections of ENGL 101 and 103 share a common theme every fall, including a selection of common texts and complementary activities.

### WRITING ENRICHED COURSES

In addition to ENGL 101, all undergraduate students must complete at least four courses (preferably one per year) that are designated as writing enriched. Writing enriched courses employ a “writing to learn” approach: Students engage more deeply with course material through the writing process while also strengthening their writing skills. Therefore, students should choose courses intentionally in close and informed consultation with their advisers to supplement and complement the major.

### Goals

- To facilitate students' ability to communicate effectively through writing.
- To provide sustained focus on writing via multiple drafts and assignments as a way to develop both writing and critical thinking skills.
- To facilitate the discovery of and the development of mastery in a field of study.

### Writing Enriched Criteria

- The course includes a sustained focus on writing as demonstrated through the syllabus, requiring multiple drafts and assignments.
- Students receive actionable feedback on their writing from the course instructor.
- Students substantially revise using critical thought and feedback to improve their writing.
- Students incorporate the feedback from the course instructor in a critical way in subsequent writing.

### 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, Nursing.

### 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 more information on the undergraduate writing program, students should check with their dean's office.

### 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. Many of Widener's co-op (intern) programs enable 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.

### 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 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 Center for Extended Learning, 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 an "Application for Change in Major/Minor" form.
2. Obtain approval and signature from the dean of the college/school whose area the student wishes to enter and from the dean whose area the student plans to leave.
3. Take the "Application for Change in Major/Minor" 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 associate provost.

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, 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**

Students can change their class schedule during the drop/add period by dropping and adding classes online. Semester charges will be adjusted to reflect full- 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 "Registration" 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 a record.

Any student desiring to withdraw from a course after the first six days must submit to Enrollment Services a "Registration" 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 "Registration" form that the student must submit to 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 "Registration" form, which the student must return to 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**

All students withdrawing from the university must visit Enrollment Services and complete a "Withdrawal Clearance" form. In some circumstances, a meeting with the associate provost for undergraduate academic affairs may also be necessary when a student has a medical or personal hardship issue. When a resident student withdraws from the university, he or she is to vacate his or her room in good order within 24 hours.

### **RE-ENROLLMENT POLICY FOR WITHDRAWN STUDENTS**

To return to Widener, students in good academic standing should contact Enrollment Services in Lipka Hall at 610-499-4161.

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. Before returning, students must first determine if there are any holds on their account by referencing CampusCruiser or asking Enrollment Services. 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 Registrar's Office 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 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 are 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.

In the case of adjustment due to 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 Financial Aid 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**

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### **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 FOR ACADEMIC FRAUD OCCURRING IN A COURSE

#### Process and Reporting

A faculty member who becomes aware of possible academic fraud in a course will:

1. Collect and preserve all evidence of the suspected fraud.
2. Inform the suspected student(s) in writing. The faculty member may contact the associate provost for undergraduate academic affairs for additional support and guidance.
3. Provide the student with the opportunity to respond to the charges within five business days of his/her receipt of, or refusal to accept, notice of the suspected fraud. 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.

4. Discuss the academic fraud with the student and agree to pursue student/faculty resolution. If no such agreement is reached, the faculty member refers the matter to the dean of the school or college level where the course is taught and will be processed at the school/college level.
5. 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. Please contact the associate provost for undergraduate academic affairs for guidelines and templates for constructing the reports.

If the faculty member is not satisfied with the sanctions available, he or she may refer the case to 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 according to the process stipulated in the bylaws or student handbook of the school or college where the course is taught.

#### 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).

#### Offenses Subject to Expulsion

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 for which the student has received a failing grade (F or XF) in a course for each offense or a case in which 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 and Reporting

When a faculty member or any other employee of the university becomes aware of possible academic fraud occurring outside a course, the faculty member or employee will:

1. Collect and preserve all evidence of the suspected fraud.
2. Refer the matter to the dean of the school or college where the student is enrolled.

When a case of academic fraud occurring in a course is referred to the dean of the school or college where the course is taught or when a case of academic fraud occurring outside a course is referred to the dean of the school or college where the student is enrolled:

1. The dean will 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 any.



2. If a student wishes to contest the charge of academic fraud or disagrees with the sanction imposed, 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.
3. 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 to the Academic Review Board via 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.

### Offenses Subject to Expulsion

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— REPEAT OFFENSES / THEFT OF EXAMINATION MATERIALS

#### Process

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

1. 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.
2. 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.
3. 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.

### STUDENT APPEALS/DECISIONS— EXPULSION/DISMISSAL

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 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, 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 will be decided in a timely manner and the parties will 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 will in no way operate as a waiver of the university's right to assess any or

all of the sanctions permitted hereunder. References to the associate provost for undergraduate academic affairs also includes his/her designee, except with respect to membership on the Academic Review Board.

### **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 cannot 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 a make-up 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**

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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 eligible students certain rights with respect to their education records. (An “eligible student” under FERPA is a student who is 18 years of age or older or who attends a postsecondary institution.) These rights include:

- The right to inspect and review the student’s education records within 45 days after 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.

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

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

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

- 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 prior 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, 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. 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, or a student volunteering to assist another university official in performing his or her tasks. A university official has a legitimate educational interest if the official needs to review an education record in order to fulfill his or her professional responsibilities for the university.

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

- The right to file a complaint with the U.S. Department of Education concerning alleged failures by the university to comply with the requirements of FERPA. The name and address of the Office that administers FERPA is:  
Family Policy Compliance Office  
U.S. Department of Education  
400 Maryland Avenue, SW  
Washington, DC 20202
- 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, photograph, 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, degrees, honors, and awards received, and the most recent educational agency or institution attended.

## **GRADUATION INFORMATION**

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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 petition 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, the registrar will advance the petition to the next available term.

## **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 Extended Learning 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**

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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 May graduates, honors are calculated at the end of the final fall semester.

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 end of the fall semester before graduation in May, the salutatorian is the student with the second highest GPA, 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 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 Thomas R. and Frances M. Benedetti Award for Excellence in Italian** is presented to an undergraduate student enrolled as an Italian minor at Widener University, exhibit a high level of achievement and shall demonstrate scholarly potential through his or her participation and performance in the campus based Italian courses, have a cumulative grade point average of Italian of 3.6 or higher, or have demonstrated academic progress.

**The Marc and Antoinette Brodtkin 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 Drs. 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 School of Business Administration Dean's Award** is awarded to the senior who most exemplifies the values and mission of the School of Business Administration.

**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 Professor Jeanne Gelman Award** is presented to a senior, nursing student with professional expertise, who has demonstrated caring and compassion in clinicals with a minimum 2.5 GPA. The award will be presented at the annual Nursing Recognition Day ceremony.

**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 and Sis 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 a School of Business Administration undergraduate student graduating in May with a major of Accounting or Finance with an excellent academic record and active in student groups, co-op or athletics. Preference given to residents of Delaware County, PA prior to enrolling at Widener.

**Kelli Deanne Hargadon Memorial Prize** is awarded to the senior deemed most outstanding in the international business program.

**The E. Christopher Harris Prize** is given annually, for an undergraduate student majoring in Engineering, preference for Chemical Engineering, with demonstrated academic success and record of campus and/or community involvement, demonstrated by volunteering in the community or on campus or membership in a student group with a stated mission of enhancing the lives of students and/or members of the Chester or Delaware County communities. If no suitable student meeting criteria, a student who is employed on campus by Widener University is acceptable.

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

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

**The Geoffrey Nearing Prize** is awarded annually to a School of Business Administration senior who has demonstrated high

scholastic achievement and who has contributed significantly to student activities.

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

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

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

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

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

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

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

**The 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 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 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.

**Captain Nathan R. Raudenbush Commencement Award** is awarded to a student who is a senior (MSIV) cadet in Widener University's Army ROTC Battalion majoring in Computer Science with a 3.0 GPA and ranked in the top 25% of his/her ROTC class, participate in University sponsored extra-curricular activities or be active in community service projects, and a graduate of the Leadership Development and Assessment Course and selected for active duty, preferably in a Maneuver, Fires, and Effects (MFE) Branch. Preference will also be given to students that have participated in the Ranger Challenge Competition and I or the Army 10-Miler Race. If no student meets criteria, preference will be given to a senior (MSIV) cadet in Widener's Army ROTC Battalion.

**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.

**Saad Outstanding International Student of Business Award** is awarded to an international senior student in the School of Business Administration who has achieved the highest GPA among all international students with at least an "A" grade in Operations Management at the conclusion of the junior year.

**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 student majoring in Social Work 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 senior 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 academic coaching for any level student through the **Office of Academic Support Services**; the **Office of Student Success and Retention** that targets and reaches out to freshmen who are not on the path to first-year success; **Tutoring Services** for content area tutoring and assistance with study skills; **Career Services** for all aspects of career planning, including co-ops and internships; the **Counseling Center** for advice and help with coping; 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.

### 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 have an overall grade-point average of 3.25 at the time of graduation.

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 an academic advisor; students are also 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.

### HEALTH PROFESSIONS (FORMERLY 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, computer science, mechanical engineering, and psychology are examples of majors that have been pursued by Widener students who have competed successfully to enter medical school. Students should contact the chair of the Health Professions Committee for more 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 the

physician assistant field, optometry, podiatric medicine, occupational therapy, physical therapy, dentistry, veterinary medicine, or chiropractics are also personally guided by the health professions advisor. A library of pertinent references 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 extra-curricular 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 DMD, the doctor of optometry, the doctor of podiatric medicine, or the doctor of osteopathy exist between Widener University and the Kornberg School of Dentistry at Temple University, Salus 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 and in the College of Arts and Sciences section under the degree programs for fine arts, social science, and science.

## 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 international affairs, multinational enterprises, urban affairs, management, and others.

Because of the nature of such programs, the advising relationship between the student and the faculty is important.

## 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.

## STUDY ABROAD

Widener offers you many options for a life-changing experience in another country. You can travel abroad for academic studies, service-learning, volunteer, or work opportunities. You can pursue these opportunities during the summer, winter, or spring break, a semester, or a full academic year. Living in a different country and experiencing another culture will broaden your horizons and contribute to your understanding of the world while giving you career-building international experience.

Widener faculty members have organized study abroad experiences in countries such as Bolivia, Ecuador, France, Italy, Mexico, and Peru. Widener also has formal exchange programs with the University of Greifswald in Germany and Chongqing Technology and Business University in China. In recent years, Widener students have participated in service-learning projects in Argentina, Panama, and Costa Rica, and studied in Australia, China, France, Germany, Ireland, and Italy.

## INTERNATIONAL FOCUS ON CAMPUS

Widener's curriculum incorporates international experiences:

- Widener has a robust study-abroad program.
- Many courses have a focus beyond the United States.
- Students can take French, Chinese, Italian, and Spanish courses.
- Majors and minors are offered in French and Spanish; a minor is offered in Italian.
- Majors are offered in international business and international relations.
- Extra and co-curricular activities and student organizations offer international-themed events.

## CONTACT

For more information, contact the Office of Global Engagement at 610-499-4372 or e-mail [globalengagement@widener.edu](mailto:globalengagement@widener.edu).

## 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 Office of Extended Learning and Graduate Studies.

## ROTC PROGRAMS

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### ARMY ROTC

The Department of Military Science offers a program of leadership development through study and practical application open to all full-time 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 (MS 101 and MS 202). Because 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 leadership 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 leadership training. Enrolled cadets are covered by the government for any injuries occurring during ROTC sanctioned training. They wear the Army uniform (if issued) 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. Students who volunteer for and are selected to move forward into the ROTC Advanced Course must also complete Cadet Basic Camp (BC) at Fort Knox, KY the summer after the freshman or sophomore year. Students who have completed Basic Combat Training (BCT) as enlisted soldiers may be exempt from BC.

### ADVANCED COURSE (JUNIORS/SENIORS)

Students who have either completed or received completion credit for the Basic Course are eligible to apply for the Advanced Course. Basic Course completion credit may be awarded by attendance at BC, or completion of Army BCT. Enrollment in the Advanced Course is dependent upon availability of positions within each year group, and ability to meet Army officership

contracting standards. Upon acceptance, students must sign a contract for future officer service. Advanced course cadets 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 leadership 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 ROTC Cadet Advanced Camp (AC) at Fort Knox, KY the summer after the junior (or senior) year. Students are paid approximately \$1,000 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 complete BC or Army BCT prior to the start of the junior year. Students interested in entering the two-year ROTC program must apply through 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. Entry into the two-year program is also dependent upon availability of positions within each year group, and ability to meet Army officership contracting standards.

### 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 Cadet (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

Once under contract, students incur a service obligation. Cadets 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 apply for campus-based Army ROTC Scholarships for up to 3.5 years of tuition, fees, and books. All scholarships are very competitive and contingent on available funding per year group. See the “Financial Aid” section of this catalog for details on ROTC scholarships.

# College of Arts and Sciences

The College of Arts and Sciences consists of the Divisions of Humanities, Social Science, and 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

Students in the College of Arts and Sciences complete their general education requirements as part of the university distribution requirements. Distribution requirements require students to take 12 credits in each of the areas of humanities, science, and social science. The general education requirements of the college provide more direction to help students master important skills and knowledge areas. The 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 be able to give a presentation before a group.
  - 1.2 Students will be able to write papers that require locating, analyzing, and formally referencing information sources to support conclusions.
2. A liberally educated person will be able to think, read, and communicate critically, and will understand and be able to use frameworks of ethical judgment.
  - 2.1 Students will examine, evaluate, and refine their habits of thinking, and accept ambiguity while questioning assumptions and ideas.
  - 2.2 Students will be able to make claims and draw conclusions supported by the marshalling and evaluation of evidence.
  - 2.3 Students will synthesize divergent contents, methodologies, and models as reflective learners and thinkers across and within disciplines.
  - 2.4 Students will develop the theoretical tools and imaginative capacity to make ethical judgments and effectively empathize with others.
  - 2.5 Students will demonstrate an awareness of different points of view and analyze 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 person uses quantitative methods effectively.
  - 3.1 Students will be able to use mathematical methods to solve problems.
  - 3.2 Students will be able to interpret, make inferences, and draw conclusions from data presented in tabular or graphical form.
  - 3.3 Students will be able to determine if numerical results are reasonable.
4. A liberally educated person 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 background to the theories and models of those disciplines.
  - 4.1 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.

4.2 Students will understand and apply social science theories and qualitative and quantitative methods to questions of individual and group behavior.

4.3 Students will acquire historical and aesthetic knowledge, and use analysis and interpretation to evaluate and critique historical and aesthetic context, evidence, artifacts, and arguments.

## 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 115 or above, or 300-level modern language), art history, dance, creative writing, fine arts, music (excluding performance), philosophy, studio art, or theater (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)

### INTERDISCIPLINARY COURSE OPTION (FLEXIBLE CREDITS)

Students who successfully complete a designated Arts and Sciences interdisciplinary course (ASC prefix) have the option to apply the credits toward fulfillment of coursework in any one of the distribution areas associated with the course (humanities, science, or social science). Students may not apply the credits to replace the math and lab science requirements from the sciences, the history or aesthetics/philosophy requirement from the humanities, the 200-level social science requirement, or 300-level humanities requirement unless the course is clearly specified as applicable by the Arts and Sciences Curriculum and Planning Committee.

### 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.

### HEALTH PROFESSIONS (FORMERLY PRE-MEDICAL) CONCENTRATION

The Health Professions Committee 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 health professions 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 one course in mathematics.

#### 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 Reading, Thinking, & Writing

ENGL 102 Literature & Critical Writing **or**

ENGL 103 Freshman Honors English *and*

ENGL 300-level literature course

Mathematics—6 or 8 credits

MATH 141 Calculus I **or**

MATH 131 Calculus I 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 COURSES—20 CREDITS

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

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

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

## SECONDARY EDUCATION CERTIFICATION PATHWAY

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In collaboration with the teacher education program in the School of Human Service Professions students majoring in the College of Arts and Sciences can obtain secondary education teaching certification. Majors in English, history, French, Spanish, biology, chemistry, and mathematics all include pathways for secondary education. In addition, the science division offers a major that includes certification in Secondary Education Earth and Space.

Details for these programs are listed with the specific majors. Students in this pathway must have current criminal record checks, FBI clearances, and child abuse clearances. All students must complete the following coursework for secondary education certification. Additional requirements for admission to teacher candidacy, student teaching, and certification are listed under the Center for Education section.

### English Literature (one of the following)

ENGL 131, 132, 133, 134, 135 (literary history surveys)  
ENGL 115–124 (intro-level literature courses that focus on genre)  
ENGL 335–363 (upper-level British literature courses)  
ENGL 365–376 (upper-level American literature courses)

### Education Courses (6 courses)

ED 101 Introduction to Teaching  
ED 202/PSY 202 Educational Psychology  
ED 250 Introduction to Special Education  
ED 1405 Collaboration  
ED 1421 Literacy Disabilities  
ED 1422 Teaching English Language Learners

### Secondary Education Teaching Methods (one of the following)\*

ED 306 Social Studies  
ED 307 English  
ED 308 Mathematics  
ED 309 Science  
ED 310 Modern Language

### Student Teaching (12 credits)

ED 1410

*\*Prior to registering for teaching methods, students must complete the following requirements. Details are available from the director of undergraduate education.*

1. Satisfactory score on the SAT, ACT, or Basic Skills Test.
2. Complete an Application to Teacher Certification, this includes a background check.
3. Complete Portfolio Transition Point 2

Changes may occur via the Pennsylvania Department of Education and will be communicated to you through your advisor. Education students must receive a grade of B (3.0) or better in the majority of education classes. Students must have a 2.9 overall GPA and pass PAPA or CORE, or have SAT or ACT scores that are high enough to offer exemption from these assessments to be admitted to teacher candidacy. Please see the Office of Certification for more information on testing. Students must have current criminal record checks, FBI clearances, and child abuse clearances.

## PRE-OCCUPATIONAL THERAPY PATHWAY

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The College of Arts and Sciences has approved the following pathway to prepare students for graduate occupational therapy programs. Students who complete this pathway will have completed all the courses required for entry to Widener's graduate occupational therapy program. This pathway is compatible with a wide range of majors, and specific curricula are available in anthropology; biology; chemistry; fine arts; French; gender, women, and sexuality studies; history; mathematics; psychology; sociology; and Spanish.

### Course Requirements

Anatomy and physiology (2 semester sequence with lab)  
Physics (1 course with lab)  
Psychology (PSY 105, PSY 211, PSY 212, PSY 225)  
Social science (1 course in sociology OR anthropology)  
Statistics (1 course)

## PRE-PHYSICAL THERAPY PATHWAY

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The College of Arts and Sciences has approved the following pathway to prepare students for graduate physical therapy programs. Students who complete this pathway will have completed all the courses required for entry to Widener's graduate physical therapy program. Students with a reserved seat in the graduate physical therapy program must meet additional requirements specified in their agreement. This pathway is compatible with a wide range of majors and specific curricula are available in anthropology; biology; chemistry; fine arts; French; gender, women, and sexuality studies; history; mathematics; psychology; sociology; and Spanish. Specific details are included in the Pre-Physical Therapy section for these majors.

### Course Requirements

Anatomy and physiology (2 semester sequence with lab)  
Biology (BIOL 230 or upper-level BIOL elective)  
Chemistry (2 semester sequence with lab)  
Physics (2 semester sequence with lab)  
Psychology (2 courses)  
Social Science (1 course in sociology OR anthropology)  
Statistics (1 course)

## 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 five-week Army ROTC Cadet Basic Camp 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 Introduction to the Army & Critical Thinking . . . . .	1
MS 102 Introduction to the Profession of Arms . . . . .	1
Enroll in PE 107B . . . . .	0.5
MS 100 Leadership Lab* . . . . .	0

#### Sophomore Year

MS 201 Leadership & Decision Making . . . . .	2
MS 202 Army Doctrine & Team Development . . . . .	2
MS 100 Leadership Lab* . . . . .	0

### TOTAL CREDITS 6.5

*\*Restricted to enrolled/contracted cadets.*

### ADVANCED COURSE Credits

#### Junior Year

MS 301 Training Management & the Warfighting Functions . . .	3
MS 302 Applied Leadership in Small Unit Operations . . . . .	3

Attend five-week Advanced Camp at Fort Knox, Kentucky  
 Nursing students can also volunteer for a three-week clinical at an Army hospital.  
 Participate in leadership development program.

#### Senior Year

MS 401 The Army Officer . . . . .	3
MS 402 Company Grade Leadership . . . . .	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 Advanced Camp, as well as academic courses required by Widener and the U.S. Army. The required Professional Military Education (PME) courses are MS 301, 302, 401, 402, and a U.S. military HIST course approved by the professor of military science.

## MAJORS

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

Besides courses within the major programs of Arts and Sciences, students can also pursue studies in art, music, and philosophy.

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 Majors

creative writing  
English\*  
fine arts  
French\*  
history\*  
Spanish\*

### Social Science Majors

anthropology  
communication studies  
criminal justice  
international relations  
political science  
psychology  
sociology\*

### Science Majors

biochemistry  
biology\*  
chemistry\*  
computer information systems  
computer science  
Earth and space science\*  
environmental science  
mathematics\*  
physics\*

### Interdisciplinary Majors

digital media informatics  
gender, women, & sexuality studies

### Double Majors

creative writing/English  
criminal justice/political science  
criminal justice/psychology  
criminal justice/sociology  
environmental science/biology  
mathematics/computer science

### Dual Degrees

chemistry/chemical engineering  
criminal justice/social work  
fine arts/social work  
gender, women, & sexuality  
studies/social work  
physics/mechanical engineering  
physics/electrical engineering  
psychology/social work  
sociology/social work

## 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.

### Humanities Minors

creative writing  
dance  
English  
French  
history  
Italian  
music  
Spanish  
visual art

### Social Science Minors

anthropology  
communication studies  
criminal justice  
international relations  
political science  
psychology  
sociology

### Pre-Law Minor

legal studies and analysis

### Science Minors

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

### Interdisciplinary Minors

African & African American studies  
environmental studies  
computer forensics  
leadership studies  
gender, women, & sexuality studies

\*Secondary education certification available



## INTERDISCIPLINARY MAJORS

### DIGITAL MEDIA INFORMATICS

Digital 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 digital 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 digital media informatics core, students pursue a specialized concentration or cognate of courses to meet their interests and needs. Finally, digital media informatics students take part in a two-semester digital media informatics capstone experience during the senior year.

### APPLIED CONCENTRATIONS

Digital media informatics students will:

- Choose one concentration and complete four courses from the selected concentration.
- Complete four additional courses from any concentration.

#### Audio-Visual (select four courses)

COMS 260 Video Production I  
 COMS 265 Radio & Audio Production  
 COMS 360 Video Production II  
 COMS 384 Visual Effects in Film & TV  
 COMS 395 Editing Film and Video  
 MUS 308 Music of the 20th Century or MUS 120 Music Theory I

#### Graphics, Mobile, & Web Development (select four courses)

AS 111 Drawing I or AS 121 Painting I  
 COMS 266 Basic Web Design  
 COMS 264 Layout & Design  
 COMS 364 Digital Imaging  
 COMS 368 Interactive Media  
 CSCI 311 Mobile App Development  
 CSCI 371 Computer Graphics I\*

#### Gaming & Artificial Intelligence (select four courses)

CSCI 175 Introduction to Game Design **OR** CSCI 125 Animation and Virtual Worlds with Alice  
 CSCI 355 Artificial Intelligence I\*\*  
 CSCI 371 Computer Graphics I\*  
 CSCI 372 Computer Graphics II\*  
 CSCI 375 Game Design & Programming\*

#### Digital Writing (four courses)

PRWR 100 Fundamentals of Professional Writing  
 COMS 217 Broadcast Newswriting  
 COMS 285 Screenwriting  
 PRWR 300 Techniques in Professional Writing

\*Required prerequisites: MATH 151, CSCI 257, and CSCI 258.

\*\*Required prerequisites: MATH 151, CSCI 257, CSCI 258, and PHIL 120.

## CURRICULUM—DIGITAL MEDIA INFORMATICS Credits

<b>Freshman Fall</b> .....	<b>16.5</b>
DMI 101 Introduction to Informatics .....	3
COMS 130 Media & Society .....	3
ENGL 101 Reading, Thinking, & Writing .....	3
Free Elective .....	3
HUM/SSCI Elective* .....	3
FRS 101 Freshman Seminar .....	1
Physical Education Elective .....	0.5

<b>Freshman Spring</b> .....	<b>15.5</b>
DMI 201 Social Media Informatics .....	3
COMS 213 Visual Literacy .....	3
CSCI 131 Introduction to Programming** .....	3
ENGL 102 Literature & Critical Writing .....	3
MATH 117 Elementary Functions .....	3
Physical Education Elective .....	0.5

<b>Sophomore Fall</b> .....	<b>16</b>
COMS 220 Media Ethics & Contemporary Issues .....	3
DMI 200 Data Mining .....	3
Science Elective* .....	4
Free Electives .....	6

<b>Sophomore Spring</b> .....	<b>15</b>
COMS 230 Media Theory .....	3
COMS 277 Integrated Marketing Communications Writing or PRWR 215 Effective Business Communication .....	3
Applied Concentration Course .....	3
HUM/SSCI Elective* .....	3
Free Elective .....	3

<b>Junior Fall</b> .....	<b>15</b>
PHIL 352 Business Ethics .....	3
Applied Concentration Courses .....	9
HUM/SSCI Elective* .....	3

<b>Junior Spring</b> .....	<b>16</b>
COMS 382 Communication Research .....	4
Applied Concentration Course .....	6
Free Electives .....	6

<b>Senior Fall</b> .....	<b>15</b>
COMS 409 Senior Capstone I .....	3
ASC 400 Values Seminar .....	3
Applied Concentration Course .....	3
Free Electives .....	6

<b>Senior Spring</b> .....	<b>12</b>
COMS 410 Senior Capstone II .....	3
Applied Concentration Course .....	3
Free Electives .....	6

**TOTAL CREDITS** **121**

\*Students must take one non-COMS social science elective (3 credits) and one non-CSCI science elective with lab (4 credits).

\*\*Students may substitute CSCI 151 for CSCI 131.

\*\*\*Any CSCI course other than CSCI 101, 131 and 151.

## GENDER, WOMEN, AND SEXUALITY STUDIES

Gender, women, and sexuality 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 gender, women, and sexuality studies examine the rich and complex intersections of gender, sexuality, race, and class from a variety of cross-disciplinary perspectives.

The gender, women, and sexuality studies department 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, women, and sexuality studies; (4) understanding the diversity of women's experiences in the United States and abroad.

Students may pursue only a gender, women, and sexuality studies major, or a double major with another discipline. Students may also take advantage of the dual degree in gender, women, and sexuality studies and social work.

Students should discuss with the program director any course substitution issues, as well as how to count courses in disciplines outside the College of Arts and Sciences.

### GENDER, WOMEN, AND SEXUALITY STUDIES MINOR

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

### PRE-OCCUPATIONAL THERAPY PATHWAY

Gender, women, and sexuality studies majors who wish to apply for admission to Widener's graduate occupational therapy program should take the following courses (note the most recent courses are factored into the prerequisite requirements):

- BIOL 121 & 123, BIOL 122 & 124
- CHEM 105 & 106
- PHYS 121 & 143
- PSY 105, 211, 212, 225, and 385
- SOC or ANTH elective (1 course)

### PRE-PHYSICAL THERAPY PATHWAY

Gender, women, and sexuality studies majors who wish to apply for admission to Widener's graduate physical therapy program should take the following additional courses (note the most recent courses are factored into the prerequisite requirements):

- BIOL 121 & 123, BIOL 122 & 124, BIOL 230
- CHEM 101 & 103, CHEM 102 & 104
- PHYS 121 & 143, PHYS 122 & 144
- PSY 105, 385 & one other PSY elective
- SOC or ANTH elective

## REQUIREMENTS—GENDER, WOMEN, & SEXUALITY STUDIES MAJOR

Credits

### Required Courses (9 credits)

GWS 101 Introduction to Gender, Women, & Sexuality Studies*	3
SOC 257 Sex & Gender in Society	3
GWS 355 Feminist Theories & Methodology or a course with a significant feminist theory component, chosen in consultation with the program director	3

### Electives (18 credits)

Students select six courses from the following alpha-numeric course list. At least three courses must be from humanities, and two courses must be from the social sciences; two of the courses from humanities and all courses from social sciences must be upper-level courses.

AH 350 Women & Art
CJ 230 Domestic Violence & the Justice System
CJ 245 Women & Criminal Justice
CJ 260 Victimology
COMS 345 Gender & Communication
CSCI 126 Women in Computing
EC 315 Women, Men, & Work
ENGL 122 Gender & Genre
ENGL 123 Literature & Critical Writing: Literature of the Gay & Lesbian Experience
ENGL 125 Literature & Critical Writing: Identities & Voices in American Literature
ENGL 145/HUM 200 World Literature
ENGL 314 Graphic Narrative
ENGL 356 Victorian Literature
GWS 188 Special Topics in Women's Studies
GWS 239/SOC 239/ANTH 239 Women & Development in Latin America (service learning course)
GWS 288 Special Topics in Women's Studies
GWS 388 Special Topics in Women's Studies
GWS 395 Gender & Women's Studies Practicum
GWS 409 Senior Capstone
GWS 499 Independent Study
HIST 104 Women in the Western Tradition
HIST 321 Women in the World Wars
HIST 326 Sex & Gender in European History
HIST 351 History of Women in America to 1870
HIST 352 History of Women in America since 1870
HIST 371 Studies in American Women's History
HIST 386 Samurai Japan
HIST 395 Sex, Gender, and Culture in China
HUM 313 Selected Topics in Literature & Film
PSY 206 Psychology of Women
PSY 305 Psychology of Women, Men, & Work
SOC 204 Social Problems
SOC 212 Sexualities
SOC 215 The Family
SOC 240 Gender & International Development
SOC 275 African & African American Women in Society
SOC 367 Social Movements & Social Change
SW 225 Women's Issues Across the Life Span
SW 270 Human Sexuality

### Related Fields (9 credits)

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

### TOTAL CREDITS

36

\*Counts for general education distribution credit.

## INTERDISCIPLINARY MINORS

### 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 & Resistance (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 303 Intro. to Francophone Civilization & Culture  
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)

ANTH 246 Rum, Rasta, & Revolution  
CJ 235 Diversity in Criminal 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 Race Relations 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 COMPUTER FORENSICS

The interdisciplinary computer forensics minor integrates criminal justice and computer science and combines both theoretical concepts and practical skills to prepare students for a career in computer forensics-related fields. Students study theoretical and practical foundations of computer security, forensic methodologies and processes, digital evidence gathering and preservation, criminal investigation and examination, and criminal law related to court presentation. Students gain hands-on experience using real state-of-the-art computer forensic tools employed by law enforcement.

#### REQUIREMENTS—

**COMPUTER FORENSICS MINOR** **Credits**

#### Core Courses (15 credits)

CJ 105 Introduction to Criminal Justice . . . . . 3  
CJ 268 Cybercrime . . . . . 3  
CSCI 391 Practical Cryptology . . . . . 3  
CSCI 392 Network and Computer Security . . . . . 3  
CSCI 393 Computer Forensics . . . . . 3

#### Mathematics and Logic (Select One)

MATH 151 Discrete Mathematics I . . . . . 3  
PHIL 120 Symbolic Logic . . . . . 3  
PHIL 105 Introduction to Logic . . . . . 3

#### Computer Programming (Select One)

CSCI 131 Introduction to Programming . . . . . 3  
CSCI 143 Programming in C . . . . . 4  
CSCI 151 Introduction to Computer Science I . . . . . 4

#### Criminal Justice Electives (Select Two)

CJ 210 Criminal Courts . . . . . 3  
CJ 225 Principals of Criminal Investigation . . . . . 3  
CJ 305 Criminal Evidence . . . . . 3  
CJ 320 White Collar Crime . . . . . 3

#### Ethics (Select One)

PHIL 350 Ethics . . . . . 3  
PHIL 352 Business Ethics . . . . . 3  
CJ 405 Ethics in Criminal Justice . . . . . 3

**TOTAL CREDITS** **30/31**

## 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
<b>Introduction to ENVR</b>	
ENVR 100 or ENVR 171	3
ENVR 173 Investigating Environmental Science	1
<b>Environmental Sustainability</b>	
ENVR 172 Principles of Sustainability Science	3
<b>ENVR Foundation and Elective Courses (Select Two):</b>	
ENVR 201 Environmental Geology	4
ENVR 209 Meteorology	4
ENVR 261 Geographic Information Systems	4
ENVR 301 Introductory Ecology**	4
<b>Global Perspective (Select One):</b>	
ANTH 251 Progress & Poverty	3
POLS 204 Current Issues In World Affairs	3
SOC 240 Gender and International Development	3
<b>Politics and Policy (Select One):</b>	
POLS 205 Public Policy	3
POLS 215 Environmental Politics & Policy	3
<b>Societal, Legal, &amp; Economic Context (Select One):</b>	
EC 101 Macroeconomics	3
EC 202 Microeconomics	3
POLS 218 Law & Society	3
SOC 266 Class Society	3
<b>TOTAL CREDITS</b>	<b>24</b>

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

\*\*Requires permission of the instructor.

## MINOR IN LEADERSHIP STUDIES

The leadership studies minor is open to all undergraduate students regardless of major. With this minor, students develop the skills and capacities to recognize relevant theories and styles of effective leadership. Students also develop the ability to critically assess, reflect, and learn from their own leadership experiences, inside the classroom and beyond. The minor is specifically designed to provide opportunities for students to practice and hone four key attributes of professional and civic leadership: integrity, initiative, collaboration, and decision-making skills. The minor includes the introductory course LEAD 101 and the capstone course LEAD 401, which is designed to integrate and crystallize what students have learned about leadership throughout their Widener experience. For more information contact the Oskin Leadership Institute.

## MINOR IN LEADERSHIP STUDIES CURRICULUM credits

LEAD 101	3
Leadership-in-Context Course*	3
Leadership-in-Context Course*	3
Leadership-in-Context Course*	3
LEAD 201 Module**	1.5
LEAD 202 Module**	1.5
LEAD 401***	3
<b>TOTAL CREDITS</b>	<b>18</b>

\*Leadership-in-Context courses are available through the College of Arts and Sciences and most of our schools. Professors of Leadership-in-Context courses have woven different dimensions and components of leadership into their overarching course themes and topics. Each Leadership-in-Context course has been approved by the Oskin Academic Committee. Students should speak to their advisor to discuss which of these courses best suit their needs. Contact the director of the Oskin Leadership Institute to learn more about Leadership-in-Context courses.

\*\*These modules are open only to students who have taken LEAD 101 and are on track to earn a minor in leadership studies.

\*\*\*LEAD 401 is open only to students who have taken LEAD 101 and are on track to earn a minor in leadership studies.

## 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, writing, 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. More information about the minor and the study of law is available through the university's pre-law advisor and through active participation in the Pre-Law Society. Pre-law students are urged to complete the minor as a way of acquiring requisite skills.

### MINOR IN LEGAL STUDIES AND ANALYSIS\* credits

BLAW 250 Legal & Ethical Environment of Business*†	3
POLS 101 American Government & Politics (prerequisite)	3
POLS 218 Law & Society**	3
PHIL 105 Introduction to Logic†	3
ENGL 102 Literature & Critical Writing or one from ENGL 115–124	3

#### Two courses from the following (6 credits):

POLS 319 Introduction to Constitutional Law**	(3)
POLS 320 Constitutional Rights & Liberties**	(3)
CJ 325 Criminal Law & Procedure**	(3)

### TOTAL CREDITS 21

\*All of the courses in the minor except BLAW 250 meet General Education Distribution requirements.

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

†Students take this course in the semester before taking the LSAT, usually junior spring.

## 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.

### CONCENTRATION IN DIGITAL HUMANITIES

Digital humanities is a rapidly growing, interdisciplinary field that incorporates new tools and methodologies for pursuing modes of inquiry and producing forms of scholarship and engagement in the humanities. It seeks to apply humanistic reasoning and research to important questions related to technology, such as social sustainability, big data, and privacy. Work in digital humanities includes public humanities, data mining/visualization, web design, textual analysis, educational technology, and ethics and technology. The concentration in digital humanities is open to all students majoring in creative writing, English, fine arts, history, and modern languages. It requires a set curriculum of interdisciplinary courses as well as a final capstone project: HUM 405 Digital Humanities Praxis.

### REQUIREMENTS—DIGITAL HUMANITIES

#### Core Courses (12 credits)

DMI 201 Social Media Informatics	3
CSCI 131 Introduction to Programming	3
COMS 266 Basic Web Design	3
HUM 405 Praxis	3

#### Elective Courses (9 credits)

COMS 213 Visual Literacy	3
COMS 260 Video Production I	3
COMS 262 Digital Photography	3
COMS 264 Layout & Design	3
COMS 364 Digital Imaging	3
COMS 368 Interactive Media	3
CSCI 125 Animation & Virtual Worlds with Alice	3
CSCI 175 Introduction to Game Design	3
CSCI 257 Object-Oriented Programming	4
CSCI 311 Mobile App Development	3
CSCI 371 Computer Graphics	3
CSCI 375 Game Design and Programming	3
ENVR 261 Geographical Imaging Systems	4
ENVR 361 Advanced Geographical Imaging Systems	3

## CREATIVE WRITING

### REQUIREMENTS—CREATIVE WRITING MAJOR Credits

#### General Education Requirements (47 credits)

ASC 400 A&S Values Seminar	3
ENGL 101 & 102	6
PE 101 & 102	1
Humanities (12 credits)	
HIST/AH/MUS	3
AH/MUS/PHIL/ENGL 115+–130+	6
300-level humanities	3
Social Science (12 credits)	
Social science courses must be in at least two different areas. One must be 200-level or above	12
Science (13 credits)	
At least one science courses must include a lab. Take MATH 113+ if did not pass math proficiency test	13

#### Creative Writing Requirements (54 credits)

CRWR 153	3
CRWR 154	3
CRWR 305	3
CRWR 306	3
CRWR 307	3
CRWR 409	3
300-level CRWR electives	12
ENGL 131, 132, 133, 134, or 135	3
ENGL 131, 132, 133, 134, or 135	3
300-level ENGL courses (4 period-based courses & 2 electives)	18

#### Additional Requirements (6 credits)

300-level humanities electives	6
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#### Electives (15 credits)

Electives	15
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**TOTAL CREDITS** **122**

*Note: Four WE courses and one QR course required.*

### REQUIREMENTS—CREATIVE WRITING MINOR

CRWR 153, CRWR 154	6
CRWR 305, 306, 307	9
CRWR 361, 379	6
300-level English course	3

**TOTAL CREDITS** **24**

<b>CURRICULUM—CREATIVE WRITING</b>	<b>Credits</b>
<b>Freshman Fall</b> .....	<b>15.5</b>
ENGL 101 .....	3
Humanities requirement .....	3
Math requirement .....	3
Social science requirement .....	3
CRWR 153 .....	3
Physical Education Elective .....	0.5
<b>Freshman Spring</b> .....	<b>15.5/16.5</b>
ENGL 115–124 .....	3
CRWR 154 .....	3
Science requirement .....	3/4
Social science requirement .....	3
ENGL 131, 132, 133, 134, or 135 .....	3
Physical Education Elective .....	0.5
<b>Sophomore Fall</b> .....	<b>18/19</b>
ENGL 131, 132, 133, 134, or 135 .....	3
Humanities requirement .....	3
Science requirement .....	3/4
Social science requirement .....	3
Electives .....	6
<b>Sophomore Spring</b> .....	<b>15/16</b>
Humanities requirements .....	6
Science requirement .....	3/4
Social science requirement .....	3
Elective .....	3
<b>Junior Fall</b> .....	<b>15</b>
CRWR 305, 306, or 307 .....	3
Advanced English courses .....	6
Advanced humanities course .....	3
Advanced creative writing course .....	3
<b>Junior Spring</b> .....	<b>15</b>
CRWR 305, 306, or 307 .....	3
Advanced English courses .....	6
Advanced creative writing course .....	3
Elective .....	3
<b>Senior Fall</b> .....	<b>15</b>
CRWR 305, 306, or 307 .....	3
Advanced English course .....	3
Advanced creative writing course .....	3
ASC 400 Values Seminar .....	3
Elective .....	3
<b>Senior Spring</b> .....	<b>15</b>
CRWR 409 .....	3
Advanced creative writing course .....	3
Advanced English course .....	3
Electives .....	6
<b>TOTAL CREDITS</b>	<b>124-127</b>

*A minimum of 18 credits of advanced English should be in period-based courses (i.e., ENGL 335–380).*

### 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.

## ENGLISH

<b>REQUIREMENTS—ENGLISH MAJOR</b>	<b>Credits</b>
<b>General Education Requirements (47 credits)</b>	
ASC 400 A&S Values Seminar .....	3
ENGL 101 & 102 .....	6
PE 101 & 102 .....	1
Humanities (12 credits)	
HIST/AH/MUS .....	3
AH/MUS/PHIL/ENGL 115+–130+ .....	6
300-level humanities .....	3
Social Science (12 credits)	
Social science courses must be in at least two different areas. One must be 200-level or above .....	12
Science (13 credits)	
At least one science courses must include a lab. Take MATH 113+ if did not pass math proficiency test .....	13
<b>English Requirements (36 credits)</b>	
ENGL 131, 132, 133, 134, or 135 .....	3
ENGL 131, 132, 133, 134, or 135 .....	3
ENGL 409 .....	3
300-level ENGL courses (6 period-based courses & 2 electives) ...	27
<b>Additional Requirements (6 credits)</b>	
300-level humanities electives .....	6
<b>Electives (33 credits)</b>	
Electives .....	33
<b>TOTAL CREDITS</b>	<b>122</b>

*Note: Four WE courses and one QR course required.*

### CERTIFICATE IN TEXTUAL SCHOLARSHIP

Students who complete 12 semester hours of ENGL 401 Textual Scholarship will receive a certificate in textual scholarship that confirms an exceptional level of expertise in a field that is distinguished for undergraduate English majors. In addition to developing the skills and earning the experience described in the course description for ENGL 401, students who complete the requirements for the textual scholarship certificate also have demonstrated a sustained commitment to the completion of a serious scholarly project that involves both extraordinary undergraduate research and intensive experiential learning.

### PRE-LAW OPTION FOR THE ENGLISH MAJOR

English is a traditional major for pre-law students. English students considering the study of law may pursue the legal studies and analysis minor offered by the College of Arts and Sciences. Students seeking further information on this program and on preparation for law school should contact pre-law advisor Professor Suzanne Mannus.

### 3 + 3 WIDENER LAW OPTION FOR THE ENGLISH MAJOR

In addition to the pre-law option, students with a high level of academic potential interested in majoring in English with law school as their ultimate goal may be eligible for the “3 + 3” program with a Widener law school. See Professor Janine Utell, department chair, for details.

**CURRICULUM—ENGLISH** **Credits**

<b>Freshman Fall</b> .....	<b>15.5</b>
ENGL 101 .....	3
Humanities requirement .....	3
Math requirement .....	3
Social science requirement .....	3
ENGL 131, 132, 133, 134, or 135 .....	3
Physical Education Elective .....	0.5
<b>Freshman Spring</b> .....	<b>15.5/16.5</b>
ENGL 115–124 .....	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
<b>Sophomore Fall</b> .....	<b>15/16</b>
Humanities requirement .....	3
Science requirement .....	3/4
Social Science requirement .....	3
Electives .....	6
<b>Sophomore Spring</b> .....	<b>15/16</b>
Humanities requirements .....	6
Science requirement .....	3/4
Social science requirement .....	3
Elective .....	3
<b>Junior Fall</b> .....	<b>15</b>
Advanced English courses .....	6
Advanced humanities course .....	3
Electives .....	6
<b>Junior Spring</b> .....	<b>15</b>
Advanced English courses .....	6
Advanced humanities course .....	3
Electives .....	6
<b>Senior Fall</b> .....	<b>15</b>
Advanced English courses .....	6
Senior Seminar .....	3
Electives .....	6
<b>Senior Spring</b> .....	<b>15</b>
Advanced English courses .....	6
Electives .....	6
ASC 400 Values Seminar .....	3
<b>TOTAL CREDITS</b> .....	<b>121-124</b>

*A minimum of 18 credits of advanced English should be in period-based courses (i.e., ENGL 335–380).*

**REQUIREMENTS—ENGLISH MINOR** **Credits**

ONE 100-level English course selected from 115–124 .....	3
ONE 100-level English course selected from 131–135 .....	3
FIVE 300-level English courses: one pre-1800 course, one post-1800 course, and three electives .....	15
<b>TOTAL CREDITS</b> .....	<b>21</b>

**DOUBLE MAJOR: ENGLISH AND CREATIVE WRITING****REQUIREMENTS—ENGLISH AND CREATIVE WRITING DOUBLE MAJOR** **Credits**

<b>General Education Requirements (47 credits)</b>	
ASC 400 A&S Values Seminar .....	3
ENGL 101 & 102 .....	6
PE 101 & 102 .....	1
Humanities (12 credits)	
HIST/AH/MUS .....	3
AH/MUS/PHIL/ENGL 115+–130+ .....	6
300-level humanities .....	3
Social Science (12 credits)	
Social science courses must be in at least two different areas. One must be 200-level or above .....	12
Science (13 credits)	
At least one science courses must include a lab. Take MATH 113+ if did not pass math proficiency test .....	13
<b>English/Creative Writing Requirements (60 credits)</b>	
CRWR 153 .....	3
CRWR 154 .....	3
CRWR 305 .....	3
CRWR 306 .....	3
CRWR 307 .....	3
CRWR 409 .....	3
ENGL 131, 132, 133, 134, or 135 .....	3
ENGL 409 .....	3
300-level CRWR electives .....	12
300-level ENGL courses (6 period-based courses & 2 electives) ..	24
<b>Additional Requirements (6 credits)</b>	
300-level humanities electives .....	6
<b>Electives (9 credits)</b>	
Electives .....	9
<b>TOTAL CREDITS</b> .....	<b>122</b>

*Note: Four WE courses and one QR course required.*

**ENGLISH/CREATIVE WRITING DOUBLE MAJOR PORTFOLIO**

All creative writing/English double 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.

**DOUBLE MAJOR: ENGLISH AND COMMUNICATION STUDIES**

Communication studies is a natural pairing for English majors. Doing an ENGL/COMS double major gives you the chance to combine your interest in literature and writing with some real-world experience that will help position you for exciting employment opportunities after graduation. Interested? See Professor Janine Utell, department chair, for details.

**CURRICULUM—ENGLISH AND CREATIVE WRITING DOUBLE MAJOR** Credits

<b>Freshman Fall</b> .....	<b>15.5</b>
ENGL 101 .....	3
Humanities requirement .....	3
Math requirement .....	3
Social science requirement .....	3
CRWR 153 .....	3
Physical Education Elective .....	0.5
<b>Freshman Spring</b> .....	<b>15.5/16.5</b>
ENGL 115–124 .....	3
CRWR 154 .....	3
Science requirement .....	3/4
Social science requirement .....	3
ENGL 131, 132, 133, 134, or 135 .....	3
Physical Education Elective .....	0.5
<b>Sophomore Fall</b> .....	<b>15/16</b>
ENGL 131, 132, 133, 134, or 135 .....	3
Humanities requirement .....	3
Science requirement .....	3/4
Social science requirement .....	3
Elective .....	3
<b>Sophomore Spring</b> .....	<b>15/16</b>
Humanities requirements .....	6
Science requirement .....	3/4
Social science requirement .....	3
Advanced humanities course .....	3
<b>Junior Fall</b> .....	<b>15</b>
CRWR 305, 306, or 307 .....	3
Advanced English courses .....	6
Advanced humanities course .....	3
Advanced creative writing course .....	3
<b>Junior Spring</b> .....	<b>15</b>
CRWR 305, 306, or 307 .....	3
Advanced English courses .....	6
Advanced creative writing course .....	3
Elective .....	3
<b>Senior Fall</b> .....	<b>15</b>
CRWR 305, 306, or 307 .....	3
ENGL 409 .....	3
Advanced creative writing course .....	3
ASC 400 Values Seminar .....	3
Elective .....	3
<b>Senior Spring</b> .....	<b>15</b>
CRWR 305, 306, 307, or 308 .....	3
CRWR 409 .....	3
Advanced English courses .....	6
Elective .....	3
<b>TOTAL CREDITS</b> .....	<b>121-124</b>

A minimum of 18 credits of advanced English should be in period-based courses (i.e., ENGL 335–380).

**ENGLISH—SECONDARY EDUCATION CERTIFICATION**

Students majoring in English can obtain secondary certification in chemistry by completing the secondary education track. Students must also follow the instructions and requirements in the Center for Education section. 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.

**REQUIREMENTS** Credits

<b>General Education Requirements (47 credits)</b>	
ASC 400 A&S Values Seminar .....	3
ENGL 101 & 102 .....	6
PE 101 & 102 .....	1
Humanities (12 credits)	
AH .....	3
AH/MUS/PHIL/CRWR .....	6
300-level humanities .....	3
Social Science (12 credits)	
PSY 105 .....	3
ED 213 .....	3
ED 250 .....	3
COMS 180 or non-PSY elective* .....	3
Science (13 credits)	
At least one science courses must include a lab. Take	
MATH 113+ if did not pass math proficiency test .....	13
<b>English Requirements (36 credits)</b>	
ENGL 131, 132, 133, 134, or 135 .....	3
ENGL 131, 132, 133, 134, or 135 .....	3
ENGL 409 .....	3
300-level ENGL courses (6 period-based courses & 3 electives) . . .	27
<b>Additional Requirements (6 credits)</b>	
300-level humanities electives* .....	6
<b>Education Requirements (35 credits)</b>	
ED 101 .....	4
ED 307 .....	3
ED 1200 .....	3
ED 1410 .....	12
ED 1421 .....	3
ED 1422 .....	3
ED 1405 .....	3
ENGL 305, COMS 217, COMS 275, COMS 277,	
COMS 316, or PRWR 215* .....	3
Freshman Seminar .....	1
<b>TOTAL CREDITS</b> .....	<b>121–124*</b>

Note: Four WE courses, one QR course, and one theater arts course required.

\*Choosing a COMS or ENGL course also fulfills a social science or humanities elective.



**CURRICULUM—ENGLISH EDUCATION CERT.\* Credits**

<b>Freshman Fall</b> .....	<b>17.5</b>
PSY 105 Introduction to Psychology .....	3
ENGL 101 Reading, Thinking, & Writing .....	3
ENGL 131 or ENGL 133 .....	3
Art History Elective .....	3
Science Elective .....	4
Freshman Seminar .....	1
Physical Education Elective .....	0.5

<b>Freshman Spring</b> .....	<b>16.5</b>
ED 101 Introduction to Teaching .....	4
ENGL 102 Literature & Critical Writing .....	3
ENGL 132, ENGL 134, or ENGL 135 .....	3
Social Science Elective .....	3
Humanities Elective .....	3
Physical Education Elective .....	0.5
<i>Portfolio Requirement – Transition Point I</i>	

<b>Sophomore Fall</b> .....	<b>18</b>
ED 250 Effective Instructional Practices & Delivery Methods for All Levels of Special Education Support .....	3
ENGL 305, COMS 217, COMS 275, COMS 277, COMS 316, or PRWR 215† .....	3
English Major Courses** .....	6
Humanities Elective .....	3
Math Elective .....	3

<b>Sophomore Spring</b> .....	<b>15</b>
ED 213 Adolescent Psychology .....	3
Math Elective .....	3
English Major Courses .....	6
Science Elective .....	3
<i>Apply for teacher candidacy.</i>	
<i>Portfolio Requirement – Transition Point II</i>	

<b>Junior Fall</b> .....	<b>15</b>
ED 1200 Classroom Management .....	3
ED 1422 Teaching English Language Learners or ENGL 326 Languages & Cultures .....	3
English Major Courses .....	6
Advanced Humanities Elective .....	3
<i>Apply for student teaching.</i>	

<b>Junior Spring</b> .....	<b>15</b>
ED 1421 Literacy Intervention in the Content Areas for Learners with Disabilities .....	3
English Major Courses .....	6
Advanced Humanities Elective .....	3
Humanities Elective .....	3

<b>Senior Fall</b> .....	<b>15</b>
ASC 400 Values Seminar .....	3
ED 307 Methods—Secondary English .....	3
English Major Courses .....	6
Senior Seminar .....	3
<i>Portfolio Requirement – Transition Point III</i>	

<b>Senior Spring</b> .....	<b>15</b>
ED 1410 Student Teaching .....	12
ED 1405 Collaboration & Communication in MS + SE .....	3
<i>Portfolio Requirement – Transition Point IV</i>	

**TOTAL CREDITS 127**

\*Changes may occur via the Pennsylvania Department of Education and will be communicated to you through your advisor. Education students must receive a grade of B (3.0) or better in the majority of education classes. Students must have a 2.9 overall GPA and pass PAPA, CORE, or have SAT or ACT scores that are high enough to offer exemption from these assessments to be admitted to teacher candidacy. Please see the Office of Certification for more information on testing. Students must have current criminal record checks, FBI clearances, and child abuse clearances.

\*\*English major courses must be selected from ENGL 313–317 and ENGL 335–363 (British lit) or ENGL 365–376 (American lit).

† Choosing a COMS course also fulfills a social science elective.

**FINE ARTS****CURRICULUM—FINE ARTS Credits**

<b>Freshman Fall</b> .....	<b>15.5/16.5</b>
AH 101 or MUS 101 .....	3
ENGL 101 .....	3
Humanities requirement .....	3
Math requirement .....	3/4
Social science requirement .....	3
Physical Education Elective .....	0.5

<b>Freshman Spring</b> .....	<b>15.5/16.5</b>
AH 102 or MUS 102 .....	3
ENGL 102 .....	3
Humanities requirement .....	3
Science requirement .....	3/4
Social science requirement .....	3
Physical Education Elective .....	0.5

<b>Sophomore Fall</b> .....	<b>15/16</b>
AH 101 or MUS 101 .....	3
ARTS 401 or 300-level art history .....	3
Science requirement .....	3/4
Social science requirement .....	3
Practicum .....	3

<b>Sophomore Spring</b> .....	<b>15/16</b>
Humanities requirement .....	3
Science requirement .....	3/4
Social science requirement .....	3
300-level AH, 300-level ARTS, 300-level MUS, or ARTS 405 .....	3
Elective .....	3

<b>Junior Fall</b> .....	<b>15</b>
300-level art history or ARTS 401 .....	3
300-level music history .....	3
Practicum .....	3
Electives .....	6

<b>Junior Spring</b> .....	<b>15</b>
300-level art history .....	3
300-level music history .....	3
300-level AH, 300-level ARTS, 300-level MUS, or ARTS 405 .....	3
Electives .....	6

<b>Senior Fall</b> .....	<b>15</b>
300-level art history .....	3
300-level music history .....	3
ARTS 409 (Senior Seminar) .....	3
Electives .....	6

<b>Senior Spring</b> .....	<b>15</b>
ASC 400 Values Seminar .....	3
300-level humanities electives .....	6
Electives .....	6

**TOTAL CREDITS 121-125**

**DOUBLE MAJOR: FINE ARTS AND COMMUNICATION STUDIES**

Communication studies is a natural pairing for fine arts majors. An ARTS/COMS double major enables students to combine a love of visual art with graphic design.

<b>CURRICULUM—FINE ARTS AND COMMUNICATION STUDIES DOUBLE MAJOR</b>	<b>Credits</b>
<b>Freshman Fall</b> .....	<b>15.5</b>
AH 101 or MUS 101 .....	3
ENGL 101 .....	3
Humanities requirement .....	3
Math requirement .....	3
COMS 130 .....	3
Physical Education Elective .....	0.5
<b>Freshman Spring</b> .....	<b>15.5/16.5</b>
Humanities requirement .....	3
Practicum .....	3
English 102 .....	3
Science requirement .....	3/4
ANTH/PSY/SOC .....	3
Physical Education Elective .....	0.5
<b>Sophomore Fall</b> .....	<b>15/16</b>
AH 101 or MUS 101 .....	3
ARTS 401 or 300-level Art History .....	3
Science requirement .....	3/4
COMS 180 .....	3
Practicum .....	3
<b>Sophomore Spring</b> .....	<b>15/16</b>
AH 102 or MUS 102 .....	3
Science requirement .....	3/4
COMS 213 .....	3
300-level Music History .....	3
Humanities requirement .....	3
<b>Junior Fall</b> .....	<b>15</b>
300-level Art History or ARTS 401 .....	3
300-level Music History .....	3
COMS 262 .....	3
COMS 260 .....	3
Humanities requirement .....	3
<b>Junior Spring</b> .....	<b>15</b>
300-level Art History .....	3
300-level Music History .....	3
COMS 364 .....	3
COMS 368 .....	3
Elective .....	3
<b>Senior Fall</b> .....	<b>15</b>
300-level Art History .....	3
COMS 264 .....	3
ARTS 409 (Senior Seminar) .....	3
COMS 409 .....	3
COMS 360 or 384 .....	3
<b>Senior Spring</b> .....	<b>16</b>
ASC 400 Values Seminar .....	3
COMS 410 .....	3
PRWR 390 .....	3
COMS 220 .....	3
COMS 382 .....	4
<b>TOTAL CREDITS</b>	<b>123</b>

**PRE-PHYSICAL THERAPY PATHWAY**

Fine arts majors who wish to apply for admission to Widener's graduate physical therapy program should take the following courses (note the most recent courses are factored into the prerequisite requirements):

- BIOL 121 & 123, BIOL 122 & 124, BIOL 230
- CHEM 101 & 103, CHEM 102 & 104
- PHYS 121 & 143, PHYS 122 & 144
- PSY 105, 385 & one other PSY elective
- SOC or ANTH elective

**PRE-OCCUPATIONAL THERAPY PATHWAY**

Fine Arts majors who wish to apply for admission to Widener's graduate occupational therapy program should take the following courses (note the most recent courses are factored into the prerequisite requirements):

- BIOL 121 & 123, BIOL 122 & 124
- CHEM 105 & 106
- PHYS 121 & 143
- PSY 105, 211, 212, 225, and 385
- SOC or ANTH elective (1 course)

**PRE-LAW OPTIONS**

Fine arts majors wishing to pursue a career in law may want to consider the legal studies and analysis minor offered by the College of Arts and Sciences. Students with a high level of academic potential may be eligible for the "3+3" option—with this option one's first year of law school is used to complete one's last year of undergraduate work.

**ARTS MINOR**

<b>CONCENTRATION IN ART</b>	<b>Credits</b>
AH 101 and 102 .....	6
Three additional 300-level art history courses .....	9
Two from AS 111, 112, 121, 122, 131, or 301 .....	6
MUS 101 and 102 .....	6
<b>TOTAL CREDITS</b>	<b>27</b>

<b>CONCENTRATION IN DANCE PERFORMANCE</b>	<b>Credits</b>
DAN 101 (4 semesters) .....	4
DAN 102 (2 semesters) .....	2
DAN 122 (3/6 semesters) .....	3/6
AH 101 or AH 102 .....	3
Two from 300-level AH, ARTS 401, 409 .....	6
MUS 101 or MUS 102 .....	3
Two 300-level music courses .....	6
<b>TOTAL CREDITS</b>	<b>27/30</b>

<b>CONCENTRATION IN MUSIC</b>	<b>Credits</b>
MUS 101 and 102 .....	6
MUS 120 or 123 .....	3
Three additional 300-level music courses .....	9
Music ensemble/studio instruction .....	3
AH 101 and 102 .....	6
<b>TOTAL CREDITS</b>	<b>27</b>

## HISTORY

<b>CURRICULUM—HISTORY</b>	<b>Credits</b>
<b>Freshman Fall</b> .....	<b>15.5/16.5</b>
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
<b>Freshman Spring</b> .....	<b>15.5/16.5</b>
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
<b>Sophomore Fall</b> .....	<b>15/16</b>
HIST 100, 101, 102, 104, 111, 112, 121, or 122 .....	3
Humanities requirement .....	3
Science requirement .....	3/4
Social science requirement .....	3
Elective .....	3
<b>Sophomore Spring</b> .....	<b>15/16</b>
HIST 100, 101, 102, 104, 111, 112, 121, or 122 .....	3
HIST 401 Research Methods .....	3
Humanities requirement .....	3
Science requirement .....	3/4
Social science requirement .....	3
<b>Junior Fall</b> .....	<b>15</b>
Advanced history courses .....	6
Advanced humanities course .....	3
Electives .....	6
<b>Junior Spring</b> .....	<b>15</b>
Advanced history courses .....	6
Electives .....	9
<b>Senior Fall</b> .....	<b>15</b>
HIST 409 Senior Seminar .....	3
Advanced history courses .....	6
Electives .....	6
<b>Senior Spring</b> .....	<b>15</b>
Advanced history courses .....	6
Electives .....	6
ASC 400 Values Seminar .....	3
HIST 021 History Portfolio .....	0
<b>TOTAL CREDITS</b>	<b>121-125</b>

*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 3.5 GPA in upper division history courses (with no grade lower than a B) and an over-all GPA 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).

## HISTORY MINOR

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

## PRE-OCCUPATIONAL THERAPY PATHWAY

History majors who wish to apply for admission to Widener's graduate occupational therapy program should take the following courses (note the most recent courses are factored into the prerequisite requirements):

- BIOL 121 & 123, BIOL 122 & 124
- CHEM 105 & 106
- PHYS 121 & 143
- PSY 105, 211, 212, 225, and 385
- SOC or ANTH elective (1 course)

## PRE-PHYSICAL THERAPY PATHWAY

History majors who wish to apply for admission to Widener's graduate physical therapy program should take the following courses (note the most recent courses are factored into the prerequisite requirements):

- BIOL 121 & 123, BIOL 122 & 124, BIOL 230
- CHEM 101 & 103, CHEM 102 & 104
- PHYS 121 & 143, PHYS 122 & 144
- PSY 105, 385 & one other PSY elective
- SOC or ANTH elective

## PRE-LAW OPTIONS FOR THE HISTORY MAJOR

History is one of the majors traditionally chosen by students interested in pursuing a law degree. By special arrangement with the Widener's law schools, history majors may choose a "3+3" option whereby they use their first year at the law school to complete the last year of their Widener undergraduate degree in history. History students may also pursue a minor in legal studies and analysis offered by the College of Arts and Sciences.

## HISTORY—SECONDARY EDUCATION CERTIFICATION IN SOCIAL STUDIES EDUCATION

History 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—SOCIAL STUDIES EDUCATION  
CERTIFICATION (E.G., WITH HISTORY MAJOR)\* Credits**

<b>Freshman Fall</b> .....	<b>15.5</b>
ENGL 101 Reading, Thinking, & Writing .....	3
PSY 105 Introduction to Psychology .....	3
HIST Elective (100-level) .....	3
Humanities Elective .....	3
Science Elective .....	3
Physical Education Elective .....	0.5
<b>Freshman Spring</b> .....	<b>16.5</b>
ED 101 Introduction to Teaching** .....	4
ENGL 102 Literature & Critical Writing .....	3
POLS 101 American Government & Politics .....	3
HIST 112 World Civilization Since 1500 .....	3
MATH Elective .....	3
Physical Education Elective .....	0.5
<i>Portfolio Requirement – Transition Point I</i>	
<b>Sophomore Fall</b> .....	<b>16</b>
ED 250 Effective Instructional Practices & Delivery Methods ..	3
HIST 100, 101, 102, 104, or 121 .....	3
SOC 105 Introduction to Sociology .....	3
Advanced HIST Course** .....	3
Science Elective .....	4
<b>Sophomore Spring</b> .....	<b>15</b>
ED 213 Adolescent Psychology .....	3
HIST 401 Research Methods .....	3
HIST Elective (100-level) .....	3
Advanced HIST Course** .....	3
Math Elective .....	3
<i>Apply for teacher candidacy.</i>	
<i>Portfolio Requirement – Transition Point II</i>	
<b>Junior Fall</b> .....	<b>18</b>
ANTH 105 Cultural Anthropology .....	3
ED 1421 Literacy Intervention in the Content Areas for Learners with Disabilities .....	3
ED 1422 Teaching English Language Learners <i>or</i> ENGL 326 Languages & Cultures .....	3
Advanced HIST Courses** .....	6
Advanced Humanities Course .....	3
<i>Apply for student teaching.</i>	
<b>Junior Spring</b> .....	<b>16.5</b>
SSCI M 906 World Geography .....	1.5
Advanced HIST Courses** .....	9
Advanced Humanities Course .....	3
Humanities Elective† .....	3
<b>Senior Fall</b> .....	<b>18</b>
ASC 400 Values Seminar .....	3
EC 101 Principles of Macroeconomics .....	3
ED 306 Methods—Secondary Social Studies/Citizenship .....	3
ED 1200 Classroom Management .....	3
HIST 409 Senior Seminar .....	3
Advanced HIST Course** .....	3
<i>Portfolio Requirement – Transition Point III</i>	
<b>Senior Spring</b> .....	<b>15</b>
ED 1410 Student Teaching .....	12
ED 1405 Collaboration & Communication in MS + SE .....	3
<i>Portfolio Requirement – Transition Point IV</i>	
<b>TOTAL CREDITS</b> .....	<b>130.5</b>

\*Changes may occur via the Pennsylvania Department of Education and will be communicated to you through your advisor. Education students must receive a grade of B (3.0) or better in the majority of education classes. Students must have a 2.9 overall GPA and pass PAPA, CORE, or have SAT or ACT scores that are high enough to offer exemption from these assessments to be admitted to teacher candidacy. Please see the office of certification for more information on testing. Students must have current criminal record checks, FBI clearances, and child abuse clearances. For majors other than history, 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 in U.S. history, a minimum of 6 semester hours in European history, and a minimum of 6 semester hours in non-Western history.

†Any of these will fulfill the PDE literature requirement:  
ENGL 131, 132, 133, 134, 135—literary history surveys.  
ENGL 115–124—intro-level literature courses that focus on genre.  
ENGL 335–363—upper-level British literature courses.  
ENGL 365–376—upper-level American literature courses.  
115–123, 301, 305–308, 324, 326–329, 401, 405, 409.

**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**

<b>Freshman Fall</b> .....	<b>15.5/16.5</b>
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
<b>Freshman Spring</b> .....	<b>15.5/16.5</b>
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
<b>Sophomore Fall</b> .....	<b>15/16</b>
FREN 201 or SPAN 201 .....	3
Humanities requirement .....	3
Science requirement .....	3/4
Social science requirement .....	3
Elective .....	3
<b>Sophomore Spring</b> .....	<b>15/16</b>
FREN 202 or SPAN 202 .....	3
Humanities requirement .....	3
Science requirement .....	3/4
Social science requirement .....	3
Elective .....	3
<b>Junior Fall</b> .....	<b>15</b>
FREN 301 or SPAN 301 .....	3
Advanced FREN or SPAN: Civilization and culture .....	3
Advanced FREN or SPAN: Literature .....	3
Elective or second language .....	3
Elective .....	3
<b>Junior Spring</b> .....	<b>15</b>
FREN 302 or SPAN 302 .....	3
Advanced FREN or SPAN: Civilization and culture .....	3
Advanced FREN or SPAN: Literature .....	3
Elective or second language .....	3
Elective .....	3
<b>Senior Fall</b> .....	<b>15</b>
Advanced FREN or SPAN: Literature .....	3
Advanced FREN or SPAN: Literature or civilization & culture ..	3
Elective or second language .....	3
Electives .....	6
<b>Senior Spring</b> .....	<b>15</b>
FREN 409 or SPAN 409 .....	3
Elective or second language .....	3
Electives .....	6
ASC Values Seminar .....	3
<b>TOTAL CREDITS</b> .....	<b>121-125</b>

## HONORS IN FRENCH OR SPANISH

To be eligible to receive honors in French/Spanish, students must:

- Have studied, interned, or volunteered abroad in an approved program for a minimum of one week in a country in which French/Spanish is the official language or have completed an internship or volunteer project of 40 hours minimum using French/Spanish in an immigrant community setting in the United States.
- Have both a cumulative GPA and a GPA within the major of 3.0 or higher and a grade of A- or higher in FREN/SPAN 409.
- Give a public presentation about their experiences abroad during International Week, Honors Week, or Student Project Day.
- Have no record of academic integrity violations.

To be eligible to receive high honors in French or Spanish, students must:

- Have studied, interned, or volunteered abroad in an approved program for a minimum of a semester in a country in which French/Spanish is the official language.
- Have a cumulative GPA and a GPA within the major of 3.5 or higher and a grade of A- or higher in FREN/SPAN 409.
- Write a reflective paper of 3–5 pages about how the study abroad experience enhanced his/her education as a French/Spanish major.
- Give a public presentation about their experiences abroad during International Week, Honors Week, or Student Project Day.
- Have no record of academic integrity violations.

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
<b>TOTAL CREDITS</b>	<b>24</b>

*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.

## PRE-OCCUPATIONAL THERAPY PATHWAY

French or Spanish majors who wish to apply for admission to Widener's graduate occupational therapy program should take the following courses (note the most recent courses are factored into the prerequisite requirements):

- BIOL 121 & 123, BIOL 122 & 124
- CHEM 105 & 106
- PHYS 121 & 143
- PSY 105, 211, 212, 225, and 385
- SOC or ANTH elective (1 course)

## PRE-PHYSICAL THERAPY PATHWAY

French or Spanish majors who wish to apply for admission to Widener's graduate physical therapy program should take the following courses (note the most recent courses are factored into the prerequisite requirements):

- BIOL 121 & 123, BIOL 122 & 124, BIOL 230
- CHEM 101 & 103, CHEM 102 & 104
- PHYS 121 & 143, PHYS 122 & 144
- PSY 105, 385 & one other PSY elective
- SOC or ANTH elective

## MODERN LANGUAGE—SECONDARY EDUCATION CERTIFICATION

A French or Spanish major 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 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 majors is the teacher certification program in Spanish with an emphasis on bilingual education. Students who wish to teach in an 'English as a Second Language' program would complete both an English major and a minor in Spanish, as well as the education course required for certification.

## CURRICULUM—MODERN LANGUAGE EDUCATION CERTIFICATION\*

	Credits
<b>Freshman Fall</b>	<b>15.5</b>
ENGL 101 Reading, Thinking, & Writing	3
SPAN 101 Elementary Spanish I	3
PSY 105 Introduction to Psychology	3
Humanities Elective	3
Social Science Elective	3
Physical Education Elective	0.5
<b>Freshman Spring</b>	<b>15.5</b>
ED 101 Introduction to Teaching	3
ENGL 102 Literature & Critical Writing	3
SPAN 102 Elementary Spanish II	3
Humanities Elective	3
Science Elective	3
Physical Education Elective	0.5
<i>Portfolio Requirement – Transition Point I</i>	
<b>Sophomore Fall</b>	<b>16</b>
ED 250 Effective Instructional Practices & Delivery Methods	3
SPAN 201 Intermediate Spanish I	3
Humanities Elective	3
Science Elective	4
Elective	3
<b>Sophomore Spring</b>	<b>15</b>
ED 213 Adolescent Psychology	3
SPAN 202 Intermediate Spanish II	3
English Literature Elective <sup>†</sup>	3
Math Elective	3
Social Science Elective	3
<i>Apply for teacher candidacy.</i>	
<i>Portfolio Requirement – Transition Point II</i>	
<b>Junior Fall</b>	<b>18</b>
ED 1421 Literacy Intervention in the Content Areas	3
ED 1422 Teaching English Language Learners	3
SPAN 301 Conversation & Composition I	3
SPAN 304 Civilization & Culture	3
ML 330 Contrastive & Applied Linguistics	3
Advanced SPAN: Literature	3
<i>Apply for student teaching.</i>	

<b>Junior Spring</b> .....	<b>18</b>
SPAN 302 .....	3
Advanced SPAN: Literature .....	3
Advanced SPAN: Literature .....	3
Math Elective .....	3
Electives .....	6
<b>Senior Fall</b> .....	<b>15</b>
ED 310 Methods—Modern Language .....	3
SPAN 305 Civilization & Culture .....	3
SPAN 409 Senior Seminar .....	3
Advanced SPAN: Literature .....	3
ASC 400 Values Seminar .....	3
<i>Portfolio Requirement – Transition Point III</i>	
<b>Senior Spring</b> .....	<b>15</b>
ED 1410 Student Teaching .....	12
ED 1405 Collaboration & Communication in MS + SE .....	3
<i>Portfolio Requirement – Transition Point IV</i>	

**TOTAL CREDITS** **128**

*\*Changes may occur via the Pennsylvania Department of Education and will be communicated to you through your advisor. Education students must receive a grade of B (3.0) or better in the majority of education classes. Students must have a 2.9 overall GPA and pass PAPA, CORE, or have SAT or ACT scores that are high enough to offer exemption from these assessments to be admitted to teacher candidacy. Please see the Office of Certification for more information on testing. Students must have current criminal record checks, FBI clearances, and child abuse clearances.*

*†Any of these will fulfill the PDE literature requirement:  
 ENGL 131, 132, 133, 134, 135—literary history surveys.  
 ENGL 115–124—intro-level literature courses that focus on genre.  
 ENGL 335–363—upper-level British literature courses.  
 ENGL 365–376—upper-level American literature courses.*

## 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 is a major for those who want to explore the world—uncovering the workings of American culture or working in foreign countries or among ethnic groups. Anthropologists examine the cultural maps people use to make sense of their world and deal with its challenges. Anthropology investigates not only modern cultures, but also ancient cultures through archaeology. Anthropologists study the natural environments of humankind and their relation to human biology. In many ways, anthropology touches on all the other social sciences, as well as on sciences and humanities.

Anthropology prepares students for careers in international relations, education, government, healthcare, business, marketing, and cultural resource management. Anthropology majors join the foreign service, work in museums, serve as corporate consultants, join international aid organizations, and even land jobs with Microsoft—one of the biggest employers of anthropologists—helping to understand how different cultures use technology. Anthropologists put ideas into action and work with policymakers to develop solutions for some of the world’s social and economic problems.

Within the anthropology major, students can tailor a program to fit individual needs. Emphasizing cultural courses serves those who want to work in a multicultural environment, go on to graduate study, 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 students who want to pursue graduate school in anthropology, medicine, physical therapy, anatomy, forensic investigation, or the like.

**REQUIREMENTS—ANTHROPOLOGY MAJOR Credits**

<b>Introductory Course (3 credits)</b>	
ANTH 105 Cultural Anthropology	3
<b>Culture Area Course (3 credits)</b>	
Choose one from the following	3
ANTH/POLS 241 East Asian Civilization	
ANTH 245 Native Americans: Conquest and Culture	
ANTH 246 Rum, Rasta, and Revolution	
<b>Advanced Anthropology Electives (21-22 credits)</b>	
<i>All students must complete 7 elective courses approved by their advisor. Students should consult with their advisor to pick those that best fit their career goals.</i>	
Choose 7 from the following	21-22
ANTH 204 Biological/Physical Anthropology*	
ANTH 216 Digging Culture: Archaeology and Evolution	
ANTH 218 Archaeological Excavation	
ANTH/SOC/GWS 239 Women and Development in Latin America	
ANTH 248 Rum, Rasta, and Revolution Field Study	
ANTH 251 Progress and Poverty	
ANTH 252 Culture, Power, and the World System	
ANTH 254 Magic, Witchcraft, and Religion	
ANTH 255 Race and Racism	
ANTH 257 Under the Influence: Drugs and Altered States in Society	
ANTH 258 Leaders, the Led, and the Evolution of Politics	
ANTH 259 Anthropology Through the Lens	
ANTH 260 Word, Sound, Power: Language in the Human Experience	
ANTH 261 Urban Anthropology: Chester	
ANTH 262 Chasing the Dream: Latinos in America	
ANTH 288/388 Special Topics in Anthropology	
ANTH 499 Independent Study	
<b>Research Sequence (6-12 credits)</b>	
ANTH 382 Ethnographic Research Methods	3
Choose 1-3 from the following	3-9
ANTH 394/395 Anthropology Practicum	
ANTH 412 Senior Research in Anthropology	
<b>TOTAL CREDITS</b>	<b>33-40</b>

\*Fulfills lab science course and quantitative reasoning requirements for general education distribution.

**CURRICULUM—ANTHROPOLOGY Credits**

<b>Freshman Fall 15.5</b>	
ANTH 105 (W)	3
ENGL 101	3
Humanities Elective	3
Science Elective	3
Free Elective	3
Physical Education Elective	0.5
<b>Freshman Spring 15</b>	
ANTH Elective	3
Humanities Elective	3
Math Requirement	3
Science Elective	3
Free Elective	3
<b>Sophomore Fall 16.5</b>	
ANTH 204 (QR)	4
ANTH Elective	3
Modern Language 1	3
Free Electives	6
Physical Education Elective	0.5

<b>Sophomore Spring 15</b>	
ANTH Elective	3
PSY 385	3
Modern Language 2	3
Science Elective	3
Free Elective	3
<b>Junior Fall 15</b>	
ANTH 394	3
ANTH Area Course	3
ANTH Elective	3
Free Electives	6
<b>Junior Spring 15</b>	
ANTH 395	3
ANTH 499	6
ANTH Elective	3
Free Elective	3
<b>Senior Fall 15</b>	
ANTH 382 (W)	3
ANTH Elective	3
Values Seminar (W)	3
Free Electives	6
<b>Senior Spring 14</b>	
ANTH 412 (W)	3
ANTH Elective	3
Free Electives	8
<b>TOTAL CREDITS</b>	<b>121</b>

**ANTHROPOLOGY MINOR**

A total of 21 semester hours. Required: ANTH 105. One of the following: ANTH 241, ANTH 245, ANTH 246, or other area course. Any five additional ANTH courses.

**CERTIFICATE AND PRE-PROFESSIONAL PROGRAMS**

The anthropology major is flexible enough to allow students to minor or double major in many additional fields according to their interests and career goals. It is particularly appropriate for pre-PT, pre-OT, and pre-med students, as well as those pursuing majors or minors in international business, marketing, management, communications, political science, international relations, psychology, history, environmental science, sociology, criminal justice, education, hospitality, and economics.

**PRE-PHYSICAL THERAPY PATHWAY**

Anthropology majors who wish to apply for admission to Widener's graduate physical therapy program should take the following courses (note the most recent courses are factored into the pre-requisite requirements):

- BIOL 121 & 123, BIOL 122 & 124, BIOL 230
- CHEM 101 & 103, CHEM 102 & 104
- PHYS 121 & 143, PHYS 122 & 144
- PSY 105, 385 & one other PSY elective
- SOC or ANTH elective

**PRE-OCCUPATIONAL THERAPY PATHWAY**

Anthropology majors who wish to apply for admission to Widener's graduate occupational therapy program should take the following courses (note the most recent courses are factored into the prerequisite requirements):

- BIOL 121 & 123, BIOL 122 & 124
- CHEM 101 & 103
- PHYS 121 & 143
- PSY 105, 211, 212, 225, and 385
- SOC or ANTH elective

## COMMUNICATION STUDIES

The communication studies program prepares students to better communicate on various levels—interpersonally, in groups, as leaders, and in mediated communication. In completing a program of study, each student selects a concentration (advertising & public relations, broadcasting, film studies, graphic design, or multimedia journalism) designed to complement his or her career objective.

### REQUIREMENTS—

#### COMMUNICATION STUDIES MAJOR Credits

##### Core Courses (19 credits)

COMS 130 Media & Society*	3
COMS 180 Public Speaking & Presentation*	3
COMS 213 Visual Literacy*	3
COMS 220 Media Ethics & Contemporary Issues*	3
COMS 230 Communication Theory*	3
PRWR 100 Introduction to Professional Writing	3
FRS 101 Freshman Seminar (COMS section)	1

##### Related Subjects (6 credits)

Two of the following related subjects	6
PSY 105 Intro. to Psychology**	
SOC 105 Intro. to Sociology**	
ANTH 105 Cultural Anthropology	
EC 101 Principles of Macroeconomics	
POLS 101 American Government & Politics	

##### 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

Two of the following writing core courses	6
COMS 217 Broadcast News Writing	
COMS 277 IMC Writing	
COMS 285 Screenwriting	

##### Studio Core

Two of the following studio core courses	6
COMS 260 Video Production I	
COMS 262 Digital Photography	
COMS 264 Layout & Design	
COMS 265 Radio & Audio Production	
COMS 266 Basic Web Design	

##### Research Sequence (10 credits)

COMS 382 Communication Research*	4
COMS 409 Senior Capstone*	3
COMS 410 Senior Capstone*	3

#### TOTAL CREDITS 53

\*Students must maintain a cumulative GPA of 2.25 or higher in specified COMS classes to remain in good standing for graduation.

\*\*At least one of the related subjects must be PSY 105 or SOC 105.

## COMMUNICATION STUDIES CONCENTRATIONS

### One 12-credit concentration required

#### Advertising & Public Relations (12 credits)

COMS 201 Social Media Informatics	3
COMS 275 Intro. to Public Relations (required)	3
COMS 280 Intro. to Advertising (required)	3
COMS 375 PR Event Planning & Campaigns	3
COMS 380 IMC Campaigns (required)	3
COMS 390 Organizational Communication	3

*Advertising and public relations concentration students must take COMS 277 as one of their two writing core classes and COMS 264 as one of their two studio core classes, and they must complete one of the nonrequired concentration electives.*

#### Broadcasting (12 credits)

COMS 265 Radio & Audio Production	3
COMS 317 Broadcast News Production (required)	
(prerequisites COMS 217, 260)	3
COMS 360 Video Production II (required)	
(prerequisite COMS 260)	3
COMS 367 Television Workshop	
(prerequisites COMS 217, 260)	3
COMS 384 Visual Effects for TV & Film	3
COMS 395 Editing Film & Video (required)	
(prerequisite COMS 260)	3

*Broadcasting concentration students must take COMS 217 as one of their two writing core classes and COMS 260 as one of their two studio core classes, and they must complete one of the nonrequired concentration electives.*

#### Film Studies (12 credits)

COMS 251 Film Analysis	3
COMS 295 Directing Film & Video (prerequisite COMS 260)	3
COMS 360 Video Production II (required)	
(prerequisite COMS 260)	3
COMS 384 Visual Effects for Film & Video	
(prerequisite COMS 260)	3
COMS 395 Editing Film & Video (prerequisite COMS 260)	3

*Film studies concentration students must take COMS 285 as one of their two writing core courses and COMS 260 as one of their two studio core classes.*

#### Graphic Design (12 credits)

COMS 264 Layout & Design (required)	3
COMS 360 Video Production II	3
COMS 364 Digital Imaging (required)	3
COMS 368 Interactive Video (required)	3
COMS 384 Visual Effects for Film & Video	
(prerequisite COMS 260)	3

*Graphic design concentration students must take COMS 260 and COMS 266 as their two studio core classes.*

#### Multimedia Journalism (12 credits)

COMS 217 Broadcast News Writing	3
COMS 317 Broadcast News Production	
(prerequisite COMS 217)	3
PRWR 300 Techniques in Professional Writing	
ENGL 388 Magazine Journalism	3

*Multimedia journalism concentration students must take COMS 260 as one of their two studio core courses. COMS 217 may not count as fulfilling both the writing core and concentration requirement.*



**CURRICULUM—COMMUNICATION STUDIES Credits**

<b>Freshman Fall</b> .....	<b>16.5</b>
COMS 130 Media & Society .....	3
ENGL 101 Reading, Thinking, & Writing <i>or</i> Free Elective .....	3
FRS 101 Freshman Seminar .....	1
Related Subject 1 .....	3
Related Subject 2 .....	3
Humanities Elective .....	3
Physical Education .....	0.5

<b>Freshman Spring</b> .....	<b>15.5</b>
COMS 213 Visual Literacy .....	3
PRWR 100 Introduction to Professional Writing .....	3
Humanities Elective .....	3
Math/Science Elective .....	3
Free Elective or MATH 101 .....	3
Physical Education .....	0.5

<b>Sophomore Fall</b> .....	<b>15</b>
COMS 180 Public Speaking & Presentation .....	3
Math Requirement .....	3
Studio Core .....	3
Writing Core .....	3
Humanities Elective .....	3

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

<b>Junior Fall</b> .....	<b>15</b>
COMS 220 Media Ethics & Contemporary Issues .....	3
Concentration Courses .....	6
Math/Science Elective .....	3
Free Elective .....	3

<b>Junior Spring</b> .....	<b>16</b>
COMS 382 Communication Research .....	4
Concentration Course .....	3
Advanced Communication Studies Elective .....	3
Free Electives .....	6

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

<b>Senior Spring</b> .....	<b>13</b>
COMS 410 Senior Capstone II .....	3
Concentration Course .....	3
Free Electives .....	7

<b>TOTAL CREDITS</b> .....	<b>122</b>
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**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.

**CRIMINAL JUSTICE**

The criminal justice major prepares 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****Criminal Justice Core Requirements (46 credits)**

CJ 105 Introduction to Criminal Justice .....	3
SOC 201 Criminology .....	3
CJ 205 Law Enforcement .....	3
CJ 210 Criminal Courts .....	3
CJ 215 The Correctional System .....	3
CJ 315 Juvenile Justice System .....	3
CJ 325 Criminal Law and Procedure .....	3
CJ 405 Ethics in Criminal Justice .....	3
CJ 423 Criminal Justice Internship .....	6
CJ 380 Criminal Justice Research & Analysis .....	4
CJ 392 Pre-Internship Professional Development Seminar .....	3
CJ 409 Senior Research .....	3
CJ 410 Senior Research .....	3
Two CJ electives .....	6

**Core Related Requirements (9 credits)**

SOC 105 Introduction to Sociology .....	3
PSY 105 Introduction to Psychology .....	3
POLS 101 American Government & Politics .....	3

<b>TOTAL CREDITS</b> .....	<b>58</b>
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**CREDIT FOR GRADUATE COURSEWORK**

Undergraduate criminal justice majors may petition the MCJ (master's in criminal justice) director to take a maximum of two 500- or 600-level MCJ courses. Students must have senior standing and must file a written petition with the MCJ director. Students will receive undergraduate criminal justice credit, as well as credit toward completion of the graduate MCJ program for each MCJ course they successfully complete.

**PRE-LAW OPTION**

Criminal justice is one of the majors traditionally chosen by students interested in going to law school. By special arrangement with Widener's Delaware Law School and Commonwealth Law School, criminal justice majors may choose a "3+3" option whereby they use the first year at Widener Law to complete the last year of their Widener undergraduate degree in criminal justice. Eligibility for participation in the "3+3" program is based upon high school record and SAT scores.

Criminal justice students considering the study of law should also pursue the legal studies and analysis minor offered by the College of Arts & Sciences.

Students seeking further information on these programs and on preparation for law school admissions should contact pre-law advisor Professor Suzanne Mannes.

<b>CURRICULUM—CRIMINAL JUSTICE</b>	<b>Credits</b>
<b>Freshman Fall</b> .....	<b>15.5</b>
CJ 105 .....	3
SOC 105 .....	3
ENGL 101 .....	3
MATH Requirement .....	3
Science Elective .....	3
PE .....	0.5
<b>Freshman Spring</b> .....	<b>16.5</b>
CJ Core Requirement .....	3
POLS 101 American Governments & Politics .....	3
PSY 105 .....	3
Lab Science .....	4
MATH Requirement .....	3
PE .....	0.5
<b>Sophomore Fall</b> .....	<b>15</b>
CJ Core Requirement .....	3
Free Electives .....	6
Humanities Electives .....	6
<b>Sophomore Spring</b> .....	<b>15</b>
CJ Core Requirement .....	3
Free Electives .....	6
Humanities Elective .....	3
MATH Requirement .....	3
<b>Junior Fall</b> .....	<b>16</b>
CJ Core Requirement .....	6
Humanities Elective .....	3
Free Electives .....	7
<b>Junior Spring</b> .....	<b>13</b>
CJ 380 Criminal Justice Research & Analysis .....	4
CJ Core Requirement .....	6
Free Elective .....	3
<b>Senior Fall</b> .....	<b>15</b>
CJ 405 Criminal Justice Ethics .....	3
CJ 409 Senior Research I .....	3
Values Seminar .....	3
CJ Internship .....	3
CJ Elective .....	3
<b>Senior Spring</b> .....	<b>15</b>
CJ 410 Senior Research II .....	3
CJ Internship .....	3
CJ Elective .....	3
Free Electives .....	6
<b>TOTAL CREDITS</b>	<b>121</b>

### Academic Policies for Criminal Justice Majors

Criminal justice majors are required to maintain a 2.0 average in the major from sophomore through senior year. This GPA is calculated using the criminal justice core requirements only. Student GPAs will be reviewed at the end of each academic year in May. If the student's GPA falls under a 2.0, the student is required to retake the courses in which he/she received below a C in order to raise the GPA to a 2.0. The student will retake the courses during the following summer or fall. If a student needs to repeat a core requirement elective, he/she must choose one that is offered in the following fall semester. All classes in which students receive an F must be repeated as soon as the course is offered again.

### 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.

### CRIMINAL JUSTICE/POLITICAL SCIENCE DOUBLE 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 205      POLS 221      POLS 306  
EC 101

#### Electives (18 credits)

Two CJ elective courses; four POLS elective courses  
(at least one must be from the international relations series)

#### Research Sequence (7 or 10 credits)

POLS 310 & POLS 410 or CJ 380 & CJ 409/410

#### Internship (6 credits)

CJ 423 or POLS 395\*

\*Restricted to appropriate internship placements.

**Criminal Justice/Psychology and Criminal Justice/  
Sociology double majors are also available with  
approval of the academic advisor**

### CONCENTRATION 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 Courses

ACCT 105 Financial Accounting .....	3
ACCT 205 Managerial Accounting .....	3
MIS 180 Computing & Spreadsheets .....	1
BLAW 250 Legal Environment of Business <b>or</b> BLAW 260 Business Law <b>or</b> BLAW 280 Sports & the Law <b>or</b> .....	3
CJ 320 White Collar Crime <b>or</b> CJ 225 Criminal Investigations .....	3
Choose any <b>two</b> 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 405 Federal Income Taxation (4 credits)	
ACCT 417 Internal Auditing	

### TOTAL CREDITS

**19-21**

## INTERNATIONAL RELATIONS

International relations 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. Working with their academic advisor, students fashion a concentration in such areas as diplomacy, international business, national security, and the history and culture of a geographic region. Students must also study a foreign language.

### REQUIREMENTS—

#### INTERNATIONAL RELATIONS MAJOR\* Credits

<b>Required Courses</b> .....	<b>28</b>
ANTH 105 Cultural Anthropology .....	3
EC 101 Macroeconomics .....	3
POLS 101 American Governments & Politics .....	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 Senior Research .....	3
<b>Language Requirement:</b> A minimum of two 3-credit courses (at or above the 200 level) in a single modern language. . . .	6
<b>Electives:</b> Select four of the following .....	12
<i>From International Relations:</i>	
POLS 204 Current Issues in World Affairs	
POLS 222 American Foreign Policy	
POLS 225 Genocide & Political Power	
POLS 226 The Developing World (POLS 102)	
POLS 228 Politics of European Integration	
POLS 235 Coups, Cartels & Carnevale: Politics in Latin America	
POLS 247 Vodka & Capitalism: Politics in Russia	
POLS 250 Vietnam (POLS 102)	
POLS 330 Becoming Democratic: Issues in Democratic Consolidation (POLS 102 or 204)	
POLS 335 Opening the Iron Curtain: Eastern Europe after Communism (POLS 102 or 204)	
POLS 337 Politics of the Middle East (POLS 102)	
POLS 345 War & Peace (POLS 204, 221 or 222)	
POLS 347 Star Wars, Star Trek, or Firefly? Nation-States & Globalization (POLS 101 or 102, or 204)	
POLS 384 Arms Control (POLS 221 or 222)	
POLS 385 Strategic Intelligence (POLS 221 or 222)	
<i>Or from the following disciplines:</i>	
ANTH 241 East Asian Civilization	
ANTH 246 Rum, Rasta, & Revolution	
ANTH 248 Rum, Rasta, & Revolution Field Study	
ANTH 251 Progress & Poverty	
ANTH 252 Culture, Power, & the World System	
EC 202 Principles of Microeconomics	
EC 300 Economic Issues in a Global Environment (EC 101 & 202)	
EC 408 International Economics (EC 101 & 202)	
FREN 303 or higher (all have FREN 301 or 302 prerequisites)	
HIST 314 The Industrial Revolution in Europe	
HIST 315 Contemporary Europe	
HIST 321 Women in the World Wars	
HIST 326 Gender in European History	
HIST 332 Germany since 1871	
HIST 333 Nazi Germany & the Holocaust	
HIST 334 Russia in the 18th & 19th Centuries	
HIST 335 Russia in the 20th Century	
HIST 336 Russia's Holocaust	
HIST 337 Russia Since Communism	
HIST 343 Allies, Enemies, & World Wars	
HIST 344 Spies & Lies	
HIST 392 China in the Modern World	
HIST 395 Chinese Private Lives	
HIST 396 Human Rights in China	
HUM 211 French Civilization & Culture	

HUM 212 Contemporary French Civilization  
ITAL 304 or higher (all have ITAL 302 as a prerequisite)  
SPAN 304 Civilization & Culture (SPAN 202)  
SPAN 305 Latin American Civilization & Culture (SPAN 202)  
SPAN 309 or higher (all have SPAN 302 as a prerequisite)

#### TOTAL CREDITS **46**

*Note: Prerequisites are in parentheses.*

*\*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 their junior year.*

#### CURRICULUM—INTERNATIONAL RELATIONS Credits

<b>Freshman Fall</b> .....	<b>15.5</b>
POLS 101 American Government & Politics .....	3
ENGL 101 Reading, Thinking, & Writing .....	3
ANTH 105 Cultural Anthropology .....	3
Language 101 .....	3
Science Elective .....	3
Physical Education Elective .....	0.5
<b>Freshman Spring</b> .....	<b>15.5</b>
POLS 102 Foreign Governments & Politics .....	3
ENGL 102 Advanced Composition & Literature .....	3
POLS 204 Current Issues in World Affairs .....	3
Language 102 .....	3
Science Elective .....	3
Physical Education Elective .....	0.5
<b>Sophomore Fall</b> .....	<b>16</b>
POLS 221 Introduction to International Relations .....	3
Language 201 .....	3
POLS IR Elective .....	3
Lab Science Elective .....	4
Humanities Elective .....	3
<b>Sophomore Spring</b> .....	<b>15</b>
EC 101 Macroeconomics .....	3
POLS 306 Western Political Theory .....	3
Language 202 .....	3
Humanities Elective .....	3
Math Requirement .....	3
<b>Junior Fall</b> .....	<b>15</b>
POLS 307 Theories of International Relations .....	3
POLS IR Elective .....	3
Language/IR Elective .....	3
Free Electives .....	6
<b>Junior Spring</b> .....	<b>16</b>
POLS 310 Empirical Political Analysis .....	4
POLS IR Elective .....	3
Language/IR Elective .....	3
Free Electives .....	6
<b>Senior Fall</b> .....	<b>15</b>
POLS 410 Senior Research I .....	3
ASC 400 Values Seminar .....	3
POLS IR Elective .....	3
Free Electives .....	6
<b>Senior Spring</b> .....	<b>13</b>
Free Electives .....	13
<b>TOTAL CREDITS</b> .....	<b>121</b>

#### INTERNATIONAL RELATIONS MINOR

A total of 30 semester hours. Required basic courses: EC 101, 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).

## 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 “3+3” 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 the 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 Suzanne Mannus (Arts & Sciences) or Anne Cole Servin, Esq. (School of Business Administration).

### 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

<b>Introductory courses (12 credits)</b>	
POLS 101 American Governments & Politics	3
POLS 102 Foreign Governments & Politics	3
POLS 221 International Relations	3
EC 101 Principals of Macroeconomics	3
<b>Core courses (31 credits)</b>	
POLS 205 Public Policy	3
POLS 306 Modern Political Theory	3
POLS 310 Empirical Political Analysis	4
Two courses from the “American Politics” series:	
POLS 201, 203, 206, 207, 215, 218, 230, 265, 313, 314, 316, 317, 318, 319, 320, 321	6
Two courses from the “International Relations” series:	
POLS 204, 222, 225, 226, 228, 235, 247, 250, 307, 330, 335, 337, 347, 384, 385	6
Three electives in political science	9
<b>Research (3 credits)</b>	
POLS 410	3
<b>TOTAL CREDITS</b>	<b>46</b>

## CURRICULUM—POLITICAL SCIENCE Credits

<b>Freshman Fall</b>	<b>15.5</b>
POLS 101 American Governments & Politics	3
ENGL 101 Reading, Thinking, & Writing	3
Science Elective	3
Humanities Elective	3
Free Elective	3
Physical Education Elective	0.5
<b>Freshman Spring</b>	<b>15.5</b>
POLS 102 Foreign Government & Politics	3
American Politics Elective	3
ENGL 102 or 115–123	3
Science Elective	3
Free Elective	3
Physical Education Elective	0.5
<b>Sophomore Fall</b>	<b>16</b>
POLS 205 Public Policy	3
POLS 221 Introduction to International Relations	3
Humanities Elective	3
Lab Science Elective	4
Free Elective	3
<b>Sophomore Spring</b>	<b>15</b>
EC 101 Macroeconomics	3
Humanities Elective	3
International Relations Elective	3
Math Requirement	3
Free Elective	3
<b>Junior Fall</b>	<b>15</b>
POLS 306 Modern Political Theory	3
Political Science Electives	6
Free Electives	6
<b>Junior Spring</b>	<b>16</b>
POLS 310 Empirical Political Analysis	4
American Politics Elective	3
Political Science Elective	3
Free Electives	6
<b>Senior Fall</b>	<b>15</b>
POLS 410 Senior Research	3
ASC 400	3
International Relations Elective	3
Free Electives	6
<b>Senior Spring</b>	<b>13</b>
POLS Internship	3
Free Electives	10
<b>TOTAL CREDITS</b>	<b>121</b>

### POLITICAL SCIENCE MINOR

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

### 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. Students often double major in psychology and social work, psychology and criminal justice, psychology and sociology, and psychology and management.

<b>REQUIREMENTS—PSYCHOLOGY MAJOR</b>	<b>Credits</b>
<b>Introductory Course (3 credits)</b>	
PSY 105 Introduction to Psychology	3
<b>Domain Requirements (12 credits)</b>	
Developmental Domain (choose one from the following)	3
PSY 211 Human Growth & Development I	
PSY 212 Human Growth & Development II	
PSY 213 Adolescent Psychology	
Sociocultural Domain (choose one from the following)	3
PSY 204 Social Psychology	
PSY 205 Personality	
PSY 210 Cross-Cultural Psychology	
PSY 215 Multicultural Psychology	
Biological Domain (choose one from the following)	3
PSY 220 Learning and Memory	
PSY 230 Cognition	
PSY 236 Psychology of Eating & Drinking	
PSY 275 Drugs & the Brain	
PSY 355 Biological Psychology**	
Applied Domain (choose one from the following)	3
PSY 200 Industrial/Organizational Psychology	
PSY 225 Abnormal Psychology	
PSY 235 Forensic Psychology	
PSY 240 Health Psychology	
<b>Psychology Electives (6 credits)</b>	
Choose two from the following	6
PSY 202 Educational Psychology: Early Learners	
PSY 203 Consumer Behavior	
PSY 206 Psychology of Women	
PSY 216 Community Psychology	
PSY 245 Group Dynamics	
PSY 247 Understanding & Managing Stress	
PSY 248 Brain, Behavior, & Culture	
PSY 250 Effective Instructional Practices	
PSY 260 Paranormal Psychology	
PSY 265 Evolutionary Psychology	
PSY 278 Problem Behaviors in Children: Assessment & Therapy	
PSY 293 Careers in Psychology	
PSY 360 Sensation & Perception	
PSY 375 Counseling & Psychotherapy	
PSY 376 Educational & Psychological Tests	
<b>Research Sequence (8 credits)</b>	
PSY 385 Statistical Methods with Laboratory	4
PSY387 Research Design with Laboratory	4
<b>Psychology Elective with Laboratory (4 credits)*</b>	
Choose one from the following	4
PSY 331 Cognition with Laboratory	
PSY 332 Human Growth & Development I with Laboratory	
PSY 333 Forensic Psychology with Laboratory	
PSY 334 Consumer Behavior with Laboratory	
PSY 336 Groups: Theory & Experience with Laboratory	
PSY 338 Human Growth & Development II with Laboratory	
<b>Capstone (3–6 credits)</b>	
Choose one from the following	3–6
PSY 409/410 Senior Research in Psychology	
PSY 423/424 Psychology Internship	
PSY 430 Current Issues in Psychology	
<b>Related Fields (6 credits)</b>	
Two courses (one course must be 200-level or above) from ANTH, BIOL,COMS, CJ, GWS, MGT, MKT, POLS, SOC, or SW.	
<b>TOTAL CREDITS</b>	<b>42–45</b>

\*Students may not take both a laboratory and non-laboratory version of the same class; therefore, students should take either PSY 203 or 334, PSY 230 or 331, PSY 211 or 332, PSY 212 or 338, PSY 235 or 333, PSY 245 or 336.

\*\*PSY 355 also counts as a science GE elective.

<b>CURRICULUM —PSYCHOLOGY MAJOR</b>	
<b>Freshman Fall</b>	<b>12.5/13.5</b>
PSY 105 Introduction to Psychology*	3
ENGL 101 Reading, Thinking, & Writing	3
MATH 101, 116, or 117* (math requirement)	3
FRS 101 (optional)	(1)
Humanities Elective 1	3
PE Elective	0.5
<b>Freshman Spring</b>	<b>16.5</b>
PSY Domain 1*	3
Humanities Elective 2	3
Related Fields 1	3
Science Elective with Laboratory	4
Free Elective or MATH 116 or 117 if 101 was taken in fall	3
PE Elective	0.5
<b>Sophomore Fall</b>	<b>16</b>
PSY 385 Statistical Methods with Laboratory*	4
PSY Domain 2*	3
Humanities Elective 3 (W)	3
Science/Math Elective 2	3
PSY 293 or Free Elective (choose concentration/minor)	3
<b>Sophomore Spring</b>	<b>16</b>
PSY 387 Research design with Laboratory *	4
PSY Domain 3*	3
Related Fields 2 (200-level or above)	3
Free Electives (concentration/minor)	6
<b>Junior Fall</b>	<b>16</b>
PSY Elective with Laboratory (W)*	4
PSY 394 or 395 Practicum** or Psychology Free Elective	3
Science/Math Elective 3	3
Free Electives	6
<b>Junior Spring</b>	<b>15</b>
PSY Domain 4*	3
PSY Elective 1	3
Humanities Elective 4 (W)	3
Free Electives	6
Apply for PSY 409/410 Senior Research (if selected)**	
<b>Senior Fall</b>	<b>15</b>
ASC 400 Values Seminar (W)	3
PSY 409, 423, or 430**	3
PSY Free Elective 2	3
Free Electives	3
Science/Math Elective 4	3
<b>Senior Spring</b>	<b>14</b>
PSY 410, 424, or 430**	3
Free Electives	11
<b>TOTAL CREDITS</b>	<b>121/122</b>

\*A minimum grade of C is required to meet psychology major requirements.

\*\*One of these options is required to complete the practicum/internship capstone. PSY 430 may be taken in fall or spring.

## HONORS IN PSYCHOLOGY

Psychology majors who have demonstrated excellence in course work (minimum GPA of 3.5 in psychology and 3.2 overall) are eligible to apply for the Honors in Psychology program for PSY 409–410. As preparation to begin an honors senior research project, students must first complete three laboratory-based research courses: PSY 385 Statistics with Laboratory, PSY 387 Research Methods with Laboratory, and a psychology elective with laboratory. Students complete an independent, empirical, research project under the supervision of a psychology department faculty member. For their senior research project, students choose a topic in psychology, review the scholarly literature, and prepare a formal research proposal. Upon approval of the research proposal by the psychology department faculty member, and the Widener University Institutional Review Board if necessary, students collect and analyze data and write a full APA-style research report. Students also present their research to the psychology department faculty in a formal, conference-style setting. A minimum grade of B+ is required in this two-semester course series to satisfy the requirement for Honors in Psychology. A grade lower than B+ will fulfill the psychology capstone requirement but without the honors distinction. Students interested in obtaining Honors in Psychology must submit an application during preregistration in the semester prior to beginning the research project. The application must be signed by the student's academic advisor and approved by the psychology department.

## PRE-CLINICAL/COUNSELING PSYCHOLOGY

The pre-clinical/counseling curriculum is an advising guide that lists courses for students who are interested in pursuing careers in clinical or counseling psychology. The curriculum prepares students to take the bachelor-level state certification examination, pursue careers in psychology, and matriculate into graduate programs in clinical or counseling psychology.

## PRE-CLINICAL/COUNSELING PSYCHOLOGY COURSES

PSY 105 Introduction to Psychology  
PSY 205 Personality  
PSY 225 Abnormal Psychology  
PSY 375 Counseling & Psychotherapy  
PSY 211, 212, or 213 (choose one)  
PSY 230, 235, 248, 355 (choose two)  
PSY 202, 215, 245, 338 (choose one)  
PSY 293 Careers in Psychology  
PSY 394, 395 (3 credits)  
PSY 396 (optional)  
PSY 423, 424

*Note: One psychology class must be a laboratory course.*

## PRE-PHYSICAL THERAPY PATHWAY

Psychology majors who wish to apply for admission to Widener's graduate physical therapy program should take the following courses (note the most recent courses are factored into the pre-requisite requirements):

- BIOL 121/123, BIOL 122/124, BIOL 230
- CHEM 101/103, CHEM 102/104
- PHYS 121/143, PHYS 122/144
- PSY 385 & two other upper-level PSY electives
- SOC or ANTH elective

Students from another major who no longer have a reserved seat for the graduate physical therapy program may not transfer into the psychology pre-physical therapy concentration. Existing psychology majors in the pre-physical therapy concentration who no longer have a reserved seat for the graduate physical therapy program must drop the pre-physical therapy major designation. If a student has their reserved seat reinstated, he or she must also apply to the chair of psychology for reinstatement into the psychology pre-physical therapy concentration. Refer to the Institute for Physical Therapy Education section of this catalog for information about the reserved seat program.

## PRE-OCCUPATIONAL THERAPY PATHWAY

Psychology majors who wish to apply for admission to Widener's graduate occupational therapy program should take the following courses (note the most recent courses are factored into the prerequisite requirements):

- CHEM 101/103
- BIOL 121/123, BIOL 122/124
- PHYS 121/143
- PSY 105, 211, 212, 225, and 385
- SOC or ANTH elective

## PSYCHOLOGY MINOR

A total of 24–25 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 students 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 may choose the applied sociology, civic engagement and social change, social research, sociology pre-physical therapy pathway, or sociology pre-occupational therapy pathway.

### APPLIED SOCIOLOGY CONCENTRATION

The concentration in applied sociology cultivates an understanding of core concepts and theories in sociology and provides students with an opportunity to use sociology to address everyday problems in society. This track requires students to apply sociology to the real world and culminates in a 200-hour internship in an organization related to the student's chosen career field. Through classroom study, hands-on activities, and experiential learning, this track prepares and trains students for a wide variety of professional activities and for a life of engaged citizenship.

#### REQUIREMENTS—SOCIOLOGY MAJOR WITH APPLIED SOCIOLOGY CONCENTRATION

	Credits
<b>Introductory Courses (4 credits)</b>	
SOC 105 Introduction to Sociology	3
FRS 101 Freshman Seminar	1
<b>Core Requirements (30 credits)</b>	
SOC 355 Social Theory	3
SOC 382 Research Design	3
SOC 405 Sociology Seminar	1
Any six sociology electives	18
<b>Internship (6 credits)</b>	
SOC 423 Internship	6
<b>TOTAL CREDITS</b>	<b>35</b>

### CIVIC ENGAGEMENT AND SOCIAL CHANGE CONCENTRATION

Students in this concentration develop an understanding of core concepts and theories in sociology with a particular emphasis on the interaction between civic engagement, social movements, and social change. Students explore the ways that engaged citizens have worked to transform social structures and cultural relations in order to address social problems. This concentration provides students with real-world experience through service-learning courses in multiple disciplines and culminates in a 200-hour internship with an organization working in an area of interest to the student. This concentration prepares students for a wide variety of careers in government and non-governmental organizations that are addressing societal problems, as well with groups advocating for social change such as unions and a wide range of social movement organizations.

### REQUIREMENTS—SOCIOLOGY MAJOR WITH CIVIC ENGAGEMENT AND SOCIAL CHANGE CONCENTRATION

<b>Introductory Courses (4 credits)</b>	
SOC 105 Introduction to Sociology	3
FRS 101 Freshman Seminar	1
<b>Core Requirements (22 credits)*</b>	
SOC 202 Civic Engagement and Social Change	3
SOC 355 Social Theory	3
SOC 367 Social Movements or SOC 286 Unions, Labor, & Society	3
SOC 382 Research Design	3
SOC 405 Sociology Seminar	1
Three additional sociology electives	9
<b>Internship (6 credits)</b>	
SOC 423 Internship	6
<b>Related Fields (3 credits)</b>	
One non-sociology service learning course or one of the following: POLS 265, HIST 371, HIST 382, HIST 383, or SSCI 120.	
<b>TOTAL CREDITS</b>	<b>35</b>

\* Two of the core courses must be service learning.

### SOCIAL RESEARCH CONCENTRATION

The social research concentration trains and prepares students for graduate school as well as job opportunities in a wide range of organizations that require data collection, data management, and data analysis. Students develop an understanding of core sociological concepts and theories and learn how to use a variety of research methods to study the social world. This concentration culminates in a two semester sequence in which students use their training to craft, carry out, and present original research.

#### REQUIREMENTS—SOCIOLOGY MAJOR WITH SOCIAL RESEARCH CONCENTRATION

	Credits
<b>Introductory Courses (4 credits)</b>	
SOC 105 Introduction to Sociology	3
FRS 101 Freshman Seminar	1
<b>Core Requirements (16 credits)</b>	
SOC 355 Social Theory	3
SOC 405 Sociology Seminar	1
Any four sociology electives	12
<b>Research Sequence (16-17 credits)</b>	
PSY 385 Statistics with Computer Lab	4
SOC 382 Research Design	3
ANTH 382 or ENVR 261	3/4
SOC 409-410 Senior Research	6
<b>TOTAL CREDITS</b>	<b>36/37</b>

### SOCIOLOGY PRE-PHYSICAL THERAPY PATHWAY

The sociology pre-physical therapy track prepares students for graduate school as well as job opportunities in a wide range of organizations in both the public and private sector. Students develop an understanding of core sociological concepts and theories and learn how to use a variety of research methods to study the social world. This track culminates in a 200-hour internship with an organization in the field of physical therapy or with an organization in a related health care field. Through classroom study and experiential learning, this track provides excellent preparation for a career in physical therapy. Sociology majors interested in pursuing 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 requirements in this catalog.

Students from another major who no longer have a reserved seat for the graduate physical therapy program may not transfer into the sociology pre-physical therapy concentration. Existing sociology majors in the pre-physical therapy concentration who no longer have a reserved seat for the graduate physical therapy program must switch to another sociology concentration. If a student has their reserved seat reinstated, he or she must also apply to the chair of sociology for reinstatement into the sociology pre-physical therapy concentration. Refer to the Institute for Physical Therapy Education section of this catalog for information about the reserved seat program.

**REQUIREMENTS—SOCIOLOGY MAJOR WITH PRE-PHYSICAL THERAPY CONCENTRATION**

**Introductory Courses (4 credits)**

SOC 105 Introduction to Sociology	3
FRS 101 Freshman Seminar	1

**Core Requirements (19 credits)**

SOC 210 Medical Sociology or SOC 215 The Family	3
SOC 355 Social Theory	3
SOC 405 Sociology Seminar	1
Any four sociology electives	12

**Research Sequence (7 credits)**

PSY 385 Statistics with Computer Lab	4
SOC 382 Research Design	3

**Internship (6 credits)**

SOC 423 Internship	6
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**TOTAL CREDITS 36**

Sociology majors who wish to apply for admission to Widener's graduate physical therapy program should also take the following courses (note the most recent courses are factored into the prerequisite requirements):

- BIOL 121 & 123, BIOL 122 & 124, BIOL 230
- CHEM 101 & 103, CHEM 102 & 104
- PHYS 121 & 143, PHYS 122 & 144
- PSY 105, 385, & one other upper-level PSY elective
- Upper-level SOC elective

**SOCIOLOGY PRE-OCCUPATIONAL THERAPY PATHWAY**

The sociology pre-occupational therapy track prepares students for graduate school as well as job opportunities in a wide range of organizations in both the public and private sector. Students develop an understanding of core sociological concepts and theories and learn how to use a variety of research methods to study the social world. This track culminates in a 200-hour internship with an organization in the field of occupational therapy or with an organization in a related health care field. Through classroom study and experiential learning, this track provides excellent preparation for a career in occupational therapy.

**REQUIREMENTS—SOCIOLOGY MAJOR WITH PRE-OCCUPATIONAL THERAPY CONCENTRATION**

**Introductory Courses (4 credits)**

SOC 105 Introduction to Sociology	3
FRS 101 Freshman Seminar	1

**Core Requirements (19 credits)**

SOC 210 Medical Sociology or SOC 215 The Family	3
SOC 355 Social Theory	3
SOC 405 Sociology Seminar	1
Any four sociology electives	12

**Research Sequence (7 credits)**

PSY 385 Statistics with Computer Lab	4
SOC 382 Research Design	3

**Internship (6 credits)**

SOC 423 Internship	6
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**TOTAL CREDITS 36**

Sociology majors who wish to apply for admission to Widener's graduate occupational therapy program should take the following courses (note the most recent courses are factored into the prerequisite requirements):

- BIOL 121 & 123, BIOL 122 & 124
- CHEM 101 & 103
- PHYS 121 & 143
- PSY 105, 211, 212, 225, and 385

**DUAL DEGREE IN SOCIAL WORK/SOCIOLOGY**

Students may elect to earn a dual degree in social work and sociology (applied sociology track). Students who follow the curriculum receive a BSW degree and a BA in sociology. Please see the "Social Work" section for details.

**DOUBLE MAJORS WITH SOCIOLOGY**

The Department of Sociology encourages students to consider double majors. Students with double majors must choose a sociology concentration and complete its required courses, including at least one capstone course/sequence in sociology. To complete the capstone requirement, students must take either:

- Sociology 382, Sociology 409, and Sociology 410 (social research concentration)
- OR
- Sociology 423 (all other concentrations)

**SOCIOLOGY MINOR**

A total of 21 semester hours: SOC 105 and SOC 355 or SOC 382, plus any five advanced courses (200-level or above) in sociology. SOC 355 and 382 should be taken during the junior year.

**EDUCATIONAL OPTIONS FOR INDIVIDUALIZED CURRICULA FOR SOCIAL SCIENCE MAJORS**

**DOUBLE MAJORS AND DUAL DEGREES**

Students wishing to earn a double major or dual degree may do so by meeting the requirements for each major. Only one research methods course and senior project are required. Students wishing to earn a double major or dual degree should meet with their advisors to discuss which 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.



## 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.

### ALLIED HEALTH

Widener University's Undergraduate Extended Learning offers a BS in allied health. For course descriptions, track options, and requirements, see the *Extended Learning Catalog*.

### PRE-MEDICINE/HEALTH PROFESSIONS

Students preparing for careers in medicine, dentistry, veterinary medicine, or other health 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 Health Professions 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 health professions advisor to plan their programs.

The courses listed as foundation courses (see page 36) 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 one course in mathematics.

## ACCELERATED PROGRAMS IN THE HEALTH PROFESSIONS

In collaboration with Philadelphia College of Osteopathic Medicine, Kornberg School of Dentistry at Temple University, 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 osteopathic 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 an adapted 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 and transfer of the appropriate courses to Widener.

### 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, 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 1170 (with math score greater than 620) and GPA of at least 3.5 on a 4.0 scale. Transfer students or students enrolled at Widener in another major should consult the biochemistry chair about pursuing the biochemistry major.

### 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 145–148, 255–258; one course from CHEM 365/367, 366/368, 385, 386, 461/463; and MATH 141 and 142 or MATH 131 and 132.

**CURRICULUM—BIOCHEMISTRY** **Credits**

<b>Freshman Fall</b> .....	<b>15.5</b>
CHEM 145 General Chemistry I .....	3
CHEM 147 General Chemistry I Lab .....	1
ENGL 101 Reading, Thinking, & Writing .....	3
HUM/SSCI Elective .....	3
MATH 141 Calculus I** .....	4
SCI 190 Introduction to Research .....	1
Physical Education Elective .....	0.5

<b>Freshman Spring</b> .....	<b>16.5</b>
BCH 102 Biochemistry Seminar I .....	1
CHEM 146 General Chemistry II .....	3
CHEM 148 General Chemistry II Lab .....	1
ENGL 102 Literature & Critical Writing .....	3
PHYS 161 Physics I .....	3
PHYS 163 Physics I Lab .....	1
MATH 142 Calculus II** .....	4
Physical Education Elective .....	0.5

<b>Sophomore Fall</b> .....	<b>16</b>
BIOL 261 Biological Concepts III .....	4
CHEM 255 Organic Chemistry I .....	4
CHEM 257 Organic Chemistry I Lab .....	1
HUM/SSCI Elective .....	3
PHYS 162 Physics II .....	3
PHYS 164 Physics II Lab .....	1

<b>Sophomore Spring</b> .....	<b>15</b>
BIOL 262 Principles of Modern Genetic Analysis .....	4
BIOL 299 Research Methods & Statistics .....	3
CHEM 256 Organic Chemistry II .....	4
CHEM 258 Organic Chemistry II Lab .....	1
HUM/SSCI Elective .....	3

<b>Junior Fall</b> .....	<b>15/14</b>
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

<b>Junior Spring</b> .....	<b>17</b>
BCH 301 Biochem Seminar II .....	1
BCH 408 Senior Thesis Proposal .....	1
BCH 452 Biochemistry II .....	3
BCH 454 Biochemistry II Lab .....	1
BIOL 310 Molecular Biology of the Gene or BIOL 302 Molecular Biology of the Cell .....	4
CHEM 386 Physical Chemistry II .....	4
HUM/SSCI Elective .....	3

<b>Senior Fall</b> .....	<b>16/17</b>
ASC 400 or HUM/SSCI Elective .....	3
BCH 409 Senior Thesis I .....	2
HUM/SSCI Elective or Elective* .....	3/4
Electives* .....	8

<b>Senior Spring</b> .....	<b>15–16</b>
ASC 400 or HUM/SSCI Elective .....	3
BCH 410 Senior Thesis II .....	2
HUM/SSCI Elective .....	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 306 Developmental Biology, BIOL 314 Developmental Neurobiology, BIOL 316 Molecular Embryology, BIOL 319 Microbiology, BIOL 320 Immunology, and BIOL 326 Medical Genetics.

\*\*MATH 131/132/133 may be used to substitute for MATH 141/142.

**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. A minimum of 12 credits used to satisfy the BA in biology coursework must be outside of those used to 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.

**CURRICULUM—BS IN BIOLOGY****Credits**

<b>Freshman Fall</b> .....	<b>14.5</b>
BIOL 161/165 Biological Concepts I w/ Lab .....	4
CHEM 145 General Chemistry I .....	3
CHEM 147 General Chemistry Lab I .....	1
ENGL 101 Reading, Thinking, & Writing .....	3
HUM/SSCI Elective .....	3
Physical Education Elective .....	0.5
<b>Freshman Spring</b> .....	<b>14.5</b>
BIOL 162 Biological Concepts II .....	4
CHEM 146 General Chemistry II .....	3
CHEM 148 General Chemistry Lab II .....	1
ENGL 102 or ENGL 115–124 .....	3
HUM/SSCI Elective .....	3
Physical Education Elective .....	0.5
<b>Sophomore Fall</b> .....	<b>16</b>
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
<b>Sophomore Spring</b> .....	<b>16</b>
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 & Statistics .....	3
<b>Junior Fall</b> .....	<b>15/16</b>
PHYS 141/143 College Physics I w/ Lab .....	5
HUM/SSCI Elective .....	3
BIOL Elective .....	4
BIOL Elective or Free Elective* .....	4/3
<b>Junior Spring</b> .....	<b>15/16</b>
PHYS 142/144 College Physics II w/ Lab .....	5
HUM/SSCI Elective .....	3
BIOL Elective .....	4
BIOL Elective or Free Elective* .....	4/3
<b>Senior Fall</b> .....	<b>16/18</b>
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
<b>Senior Spring</b> .....	<b>16/18</b>
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, 305, 307, 308, 309, 311, 315, 317, 324, 325, 327.  
 B. *Cell & Molecular Biology*: 302, 306, 310, 314, 316, 319, 320, 326.  
 C. *Interorganismal Biology*: 301, 312, 313, 318, 340/342, 345, 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**

<b>Freshman Fall</b> .....	<b>14.5</b>
BIOL 161/165 Biological Concepts I w/ Lab .....	4
CHEM 145 General Chemistry I .....	3
CHEM 147 General Chemistry Lab I .....	1
ENGL 101 Reading, Thinking, & Writing .....	3
HUM/SSCI Elective .....	3
Physical Education Elective .....	0.5
<b>Freshman Spring</b> .....	<b>14.5</b>
BIOL 162 Biological Concepts II .....	4
CHEM 146 General Chemistry II .....	3
CHEM 148 General Chemistry Lab II .....	1
ENGL 102 or ENGL 115–124 .....	3
HUM/SSCI Elective .....	3
Physical Education Elective .....	0.5
<b>Sophomore Fall</b> .....	<b>15/16</b>
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
<b>Sophomore Spring</b> .....	<b>16–22</b>
BIOL 262 Principles of Modern Genetic Analysis .....	4
BIOL 299 Research Methods & Statistics .....	3
BA Coursework <sup>+</sup> .....	6–9
HUM/SSCI Elective .....	3–6
<b>Junior Fall</b> .....	<b>16</b>
PHYS 141/143 College Physics I w/ Lab .....	5
BIOL Electives .....	8
HUM/SSCI Elective or BA Coursework <sup>+</sup> .....	3
<b>Junior Spring</b> .....	<b>16</b>
PHYS 142/144 College Physics II w/ Lab .....	5
BIOL Electives .....	8
HUM/SSCI Elective or BA Coursework <sup>+</sup> .....	3
<b>Senior Fall</b> .....	<b>16</b>
BIOL Elective .....	4
BA Coursework <sup>+</sup> .....	6
HUM/SSCI Elective .....	3
ASC 400 .....	3
<b>Senior Spring</b> .....	<b>16</b>
BIOL Elective .....	4
BA Coursework <sup>+</sup> .....	6
HUM/SSCI Elective .....	3
Free Elective .....	3

**TOTAL CREDITS** **124–131**

<sup>+</sup>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, 305, 307, 308, 309, 311, 315, 317, 324, 325, 327.  
 B. *Cell & Molecular Biology*: 302, 306, 310, 314, 316, 319, 320, 326.  
 C. *Interorganismal Biology*: 301, 312, 313, 318, 340/342, 345, 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.

## BIOLOGY—SECONDARY EDUCATION CERTIFICATION

Students can obtain secondary education certification in biology by completing the secondary education track. Students must also follow Center for Education instructions and requirements. Students may seek certification in more than one field; however, this usually requires more than eight semesters. Students who wish to become certified in more than one area should work closely with their faculty advisor when planning course schedules.

### CURRICULUM—SCIENCE EDUCATION: BIOLOGY CERTIFICATION<sup>†</sup>

Credits

<b>Freshman Fall</b> .....	<b>14.5</b>
BIOL 161/165 Biological Concepts I w/ Lab .....	4
CHEM 145 General Chemistry I .....	3
CHEM 147 General Chemistry Lab I .....	1
ENGL 101 Reading, Thinking, & Writing .....	3
PSY 105 Introduction to Psychology .....	3
Physical Education Elective .....	0.5
<b>Freshman Spring</b> .....	<b>15.5</b>
BIOL 162 Biological Concepts II .....	4
CHEM 146 General Chemistry II .....	3
CHEM 148 General Chemistry Lab II .....	1
ED 101 Introduction to Teaching .....	4
ENGL 102 Literature & Critical Writing .....	3
Physical Education Elective .....	0.5
<i>Portfolio Requirement – Transition Point I</i>	
<b>Sophomore Fall</b> .....	<b>16</b>
BIOL 261 Biological Concepts III .....	4
CHEM 255 Organic Chemistry I .....	4
CHEM 257 Organic Chemistry I Lab .....	1
ED 250 Effective Instructional Practices & Delivery Methods for All Levels of Special Education .....	3
MATH 141 Calculus I* .....	4
<b>Sophomore Spring</b> .....	<b>17</b>
BIOL 262 Principles of Modern Genetic Analysis .....	4
ED/PSY 202 Educational Psychology .....	3
MATH 142 Calculus II* .....	4
HUM Elective .....	3
SSCI Elective .....	3
<i>Apply for teacher candidacy.</i>	
<i>Portfolio Requirement – Transition Point II</i>	
<b>Junior Fall</b> .....	<b>15</b>
BIOL 301 Introductory Ecology .....	4
ED 1422 Teaching English Language Learners .....	3
ENVR 171 Principles of Environmental Science <sup>††</sup> .....	3
ENVR 173 Investigating Environmental Science <sup>††</sup> .....	1
PHYS 141/143 College Physics I w/ Lab .....	4
<i>Apply for student teaching.</i>	
<b>Junior Spring</b> .....	<b>16/17</b>
Advanced Science Elective** .....	3/4
ED 1421 Literacy Intervention in the Content Areas for Learners with Disabilities .....	3
PHYS 142/144 College Physics II w/ Lab .....	4
English Literature Elective*** .....	3
SSCI Elective .....	3
<b>Senior Fall</b> .....	<b>15/17</b>
ED 309 Methods: Secondary Science .....	3
ACS 400 Values Seminar .....	3
HUM Elective .....	3
Advanced Science Elective** .....	3/4
Advanced Science Elective** .....	3/4
<i>Portfolio Requirement – Transition Point III</i>	
<b>Senior Spring</b> .....	<b>15</b>
ED 1410 Student Teaching .....	12
ED 1405 Collaboration & Inclusion .....	3
<i>Portfolio Requirement – Transition Point IV</i>	

**TOTAL CREDITS**

**124–126**

<sup>†</sup> Changes may occur via the Pennsylvania Department of Education and will be communicated to students through their advisors. Education students must receive a grade of B (3.0) or better in the majority of education classes. Students must have a 2.9 overall GPA and pass PAPA, CORE, or have SAT or ACT scores that are high enough to offer exemption from these assessments to be admitted to teacher candidacy. Please see the Office of Certification for more information on testing. Students must have current criminal record checks, FBI clearances, and child abuse clearances.

<sup>††</sup> 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.

\*\*\*Any of these will fulfill the PDE literature requirement:

ENGL 131, 132, 133, 134, 135—literary history surveys.

ENGL 115–124—intro-level literature courses that focus on genre.

ENGL 335–363—upper-level British literature courses.

ENGL 365–376—upper-level American literature courses.

## 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.

## 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.

## PRE-OCCUPATIONAL THERAPY PATHWAY

Biology majors who wish to apply for admission to Widener's graduate occupational therapy program should take the following courses (note the most recent courses are factored into the prerequisite requirements):

- BIOL 299 (statistics requirement)
- BIOL 303 or 325 (physiology elective)
- BIOL 307 or 327 (anatomy elective)
- PHYS 141 & 143 (physics requirement)
- PSY 105, 211, 212, 225
- SOC or ANTH elective (1 course)

## PRE-PHYSICAL THERAPY PATHWAY

Students who wish to apply for admission to Widener's graduate physical therapy program may follow a BS or BA biology program and should take the following courses (note the most recent courses are factored into the prerequisite requirements):

- BIOL 299 & and upper-level BIOL elective
- BIOL 303 or 325 (Physiology elective)
- BIOL 307 or 327 (Anatomy elective)
- CHEM 146 & 148, CHEM 255 & 257 (BA)  
or CHEM 255 & 257, CHEM 256 & 258 (BS)
- PHYS 141 & 143, PHYS 142 & 144
- PSY 105 & one other PSY elective
- SOC or ANTH elective

## 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. 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.

### Special Academic Policies for the Major and Minor

- All chemistry courses must be completed with a C- grade or better.
- Chemistry courses may be attempted no more than two times. Enrollment and subsequent withdrawal from a course is considered one attempt.
- To be approved for graduation, a chemistry major must have a GPA of 2.0 or higher in all science courses.

CURRICULUM—CHEMISTRY	Credits
<b>Freshman Fall</b> .....	<b>15.5</b>
CHEM 145 General Chemistry I .....	3
CHEM 147 General Chemistry I Lab .....	1
ENGL 101 Reading, Thinking, & Writing .....	3
FRS 101 Freshman Seminar or SCI 190 Intro to Research .....	1
MATH 131 Calculus w/ Review I .....	4
HUM/SSCI Elective .....	3
Physical Education Elective .....	0.5
<b>Freshman Spring</b> .....	<b>15.5</b>
CHEM 146 General Chemistry II .....	3
CHEM 148 General Chemistry II Lab .....	1
MATH 132 Calculus w/ Review II .....	4
PHYS 161 Physics I .....	3
PHYS 163 Physics I Lab .....	1
HUM/SSCI Elective .....	3
Physical Education Elective .....	0.5
<b>Sophomore Fall</b> .....	<b>16</b>
CHEM 255 Organic Chemistry I .....	4
CHEM 257 Organic Chemistry I Lab .....	1
MATH 133 Calculus w/ Review III .....	4
PHYS 162 Physics II .....	3
PHYS 164 Physics II Lab .....	1
HUM/SSCI Elective .....	3
<b>Sophomore Spring</b> .....	<b>15</b>
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
<b>Junior Fall</b> .....	<b>17</b>
CHEM 365 Analytical Chemistry .....	3
CHEM 367 Analytical Chemistry Lab .....	1
CHEM 385 Physical Chemistry I .....	4
HUM/SSCI Elective .....	3
Electives .....	6

<b>Junior Spring</b> .....	<b>15</b>
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

<b>Senior Fall</b> .....	<b>13/14</b>
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

<b>Senior Spring</b> .....	<b>15/16</b>
ASC 400 Values Seminar .....	3
CHEM 498 Undergraduate Research Experience* .....	2
HUM/SSCI Elective .....	3
Electives .....	6

### TOTAL CREDITS 121-122

\*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.

\*\*\*BCH 451/453, BCH 452/454, CHEM 475, or CHEM 488.

### CURRICULUM—

#### CHEMISTRY WITH ACS CERTIFICATION Credits

<b>Freshman Fall</b> .....	<b>15.5</b>
CHEM 145 General Chemistry I .....	3
CHEM 147 General Chemistry Lab I .....	1
MATH 141 Calculus I .....	4
ENGL 101 Reading, Thinking, & Writing .....	3
FRS 101 Freshman Seminar or SCI 190 Intro to Research .....	1
HUM/SSCI Elective .....	3
Physical Education Elective .....	0.5
<b>Freshman Spring</b> .....	<b>15.5</b>
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
<b>Sophomore Fall</b> .....	<b>16</b>
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
<b>Sophomore Spring</b> .....	<b>15</b>
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
<b>Junior Fall</b> .....	<b>15</b>
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

<b>Junior Spring</b> .....	<b>16</b>
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
<b>Senior Fall</b> .....	<b>14</b>
CHEM 409 Senior Thesis I .....	2
CHEM 461 Synthesis & Spectroscopy .....	1
CHEM 463 Synthesis & Spectroscopy Lab .....	1
HUM/SSCI Elective .....	3
Electives .....	7
<b>Senior Spring</b> .....	<b>15</b>
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
<b>TOTAL CREDITS</b> .....	<b>122</b>

\*BCH 452/454, CHEM 475, or CHEM 488.

**CURRICULUM—CHEMISTRY/CHEMICAL ENGINEERING DUAL DEGREE\*** **Credits**

<b>Freshman Fall</b> .....	<b>19.5</b>
ENGR 111 Engineering Techniques .....	2
MATH 141 Calculus I .....	4
CHEM 145 General Chemistry I .....	3
CHEM 147 General Chemistry Lab I .....	1
ENGL 101 Reading, Thinking, & Writing .....	3
Humanities Elective** .....	3
Social Science Elective** .....	3
Physical Education Elective .....	0.5
<b>Freshman Spring</b> .....	<b>17.5</b>
ENGR115 Intro to Computer Programming Using MATLAB*** ..	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
<b>Sophomore Fall</b> .....	<b>16</b>
MATH 241 Multivariable Calculus .....	4
CHE 222 Chemical Engineering Principles .....	3
CHEM 255 Organic Chemistry I .....	4
CHEM 257 Organic Chemistry Lab I .....	1
PHYS 162 Physics II .....	3
PHYS 164 Physics Lab II .....	1
<b>Sophomore Spring</b> .....	<b>18</b>
MATH 242 Elementary Differential Equations .....	3
CHEM 256 Organic Chemistry II .....	4
CHEM 258 Organic Chemistry Lab II .....	1
CHEM 375 Inorganic Chemistry .....	3
CHEM 390 Chemical Literature .....	1
ENGR 325 Thermodynamics .....	3
Humanities Elective** .....	3
<b>Junior Fall</b> .....	<b>17/18</b>
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
Technical Elective .....	2/3

<b>Junior Spring</b> .....	<b>17</b>
CHE 314 Introduction to Process Control .....	3
CHE 327 Chemical Engineering Lab I .....	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
CHEM 389 Physical Chemistry II Lab .....	1
<b>Senior Fall</b> .....	<b>16</b>
ENGR 401 Senior Project I .....	2
CHE 425 Process Design I .....	3
CHE 429 Chemical Reaction Engineering .....	3
CHE 427 Chemical Engineering Lab II .....	1
CHEM 498 Research Experience .....	1
Humanities/Social Science Elective** .....	3
ASC 400 Values Seminar .....	3
<b>Senior Spring</b> .....	<b>18/19</b>
ENGR 402 Senior Project II .....	2
CHE 428 Process Design II .....	3
CHEM 498 Research Experience .....	1
Advanced Chemistry Elective** .....	3/4
Humanities Elective** .....	3
Social Science Elective** .....	3
Technical Elective .....	3
<b>TOTAL CREDITS</b> .....	<b>139–141</b>

\*Students interested in a chemistry/chemical engineering dual degree should contact the chairs of both departments and the deans' offices for details about the curriculum. Students wishing to pursue a dual degree must get written permission from both departments. Dual degree students must maintain a cumulative GPA of 3.0 or above.

\*\*Details on the choices of electives in the dual degree 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); CHEM 475 (3); or CHEM 488 (3).

\*\*\*Students may take ENGR 112 Computer Programming & Engr. Problem Solving, ENGR 113 Computer-Aided Engineering Design, or ENGR 114 Engineering Graphics & Computer-Aided Design in lieu of ENGR 115.

†Students must take at least two technical electives offered by any department in the School of Engineering. Students considering an initial career in the chemical process or petroleum industries should select technical electives from ENGR 312, ENGR 315, ME 215, ME 352, CHEM 300- or 400-level courses, and, if qualified, graduate engineering courses. Students considering an initial career in the biochemical or pharmaceutical industries should select from CHE 430; CHE 460/BME460; BCH 451 and 452; BIOL 261 and 262; CHEM 300- or 400-level courses; and, if qualified, graduate engineering courses. Students considering other initial career orientations may take technical electives at the 200-level or above, including those previously listed, as well as any other courses offered by any department in the School of Engineering. Students should check with their academic advisor before choosing technical electives.

**CHEMISTRY—SECONDARY EDUCATION CERTIFICATION**

Students majoring in chemistry can obtain secondary certification in chemistry by completing the secondary education track. Students must also follow the instructions and requirements in the Center for Education section. 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.

<b>CURRICULUM—SCIENCE EDUCATION: CHEMISTRY CERTIFICATION†</b>	<b>Credits</b>
<b>Freshman Fall</b> .....	<b>14.5</b>
CHEM 145 General Chemistry I .....	3
CHEM 147 General Chemistry Lab I .....	1
ENGL 101 Reading, Thinking, & Writing .....	3
MATH 141 Calculus I .....	4
PSY 105 Introduction to Psychology .....	3
Physical Education Elective .....	0.5
<b>Freshman Spring</b> .....	<b>15.5</b>
CHEM 146 General Chemistry II .....	3
CHEM 148 General Chemistry Lab II .....	1
ED 101 Introduction to Teaching† .....	4
ENGL 102 Literature & Critical Writing .....	3
MATH 142 Calculus II .....	4
Physical Education Elective .....	0.5
<i>Portfolio Requirement – Transition Point I</i>	
<b>Sophomore Fall</b> .....	<b>17</b>
CHEM 255 Organic Chemistry I .....	4
CHEM 257 Organic Chemistry Lab I .....	1
ED 250 Effective Instructional Practices & Delivery Methods for All Levels of Special Education .....	3
ENVR 171 Principles of Environmental Science .....	3
HUM/SSCI Electives .....	6
<b>Sophomore Spring</b> .....	<b>17</b>
CHEM 256 Organic Chemistry II .....	4
CHEM 258 Organic Chemistry Lab II .....	1
CHEM 375 Inorganic Chemistry .....	3
ED/PSY 202 Educational Psychology .....	3
HUM/SSCI Electives .....	6
<i>Apply for teacher candidacy.</i>	
<i>Portfolio Requirement – Transition Point II</i>	
<b>Junior Fall</b> .....	<b>15</b>
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
<i>Apply for student teaching.</i>	
<b>Junior Spring</b> .....	<b>16</b>
CHEM 366 Instrumental Analysis .....	3
CHEM 368 Instrumental Analysis Lab .....	1
CHEM 398 Research Experience .....	2
ED 1421 Literacy Intervention in the Content Areas for Learners with Disabilities .....	3
PHYS 162 Physics II .....	3
PHYS 164 Physics Lab II .....	1
English Literature Elective** .....	3
<b>Senior Fall</b> .....	<b>16/18</b>
CHEM 385 Physical Chemistry I .....	4
ED 309 Methods: Secondary Science .....	3
Science Electives* .....	6/8
ASC 400 Values Seminar .....	3
<i>Portfolio Requirement – Transition Point III</i>	
<b>Senior Spring</b> .....	<b>15</b>
ED 1410 Student Teaching .....	12
ED 1405 Collaboration & Inclusion .....	3
<i>Portfolio Requirement – Transition Point IV</i>	
<b>TOTAL CREDITS</b>	<b>126–128</b>

† Changes may occur via the Pennsylvania Department of Education and will be communicated to students through their advisors. Education students must receive a grade of B (3.0) or better in the majority of education classes. Students must have a 2.9 overall GPA and pass PAPA, CORE, or have SAT or ACT scores that are high enough to offer exemption from these assessments to be admitted to

teacher candidacy. Please see the Office of Certification for more information on testing. Students must have current criminal record checks, FBI clearances, and child abuse clearances.

\*Students must take 6 credits of science electives. In spring of their junior year or fall of their senior year, they must select a course from the following: BCH 451/453, CHEM 386/389, 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.

\*\*Any of these will fulfill the PDE literature requirement:

ENGL 131, 132, 133, 134, 135—literary history surveys.

ENGL 115–124—intro-level literature courses that focus on genre.

ENGL 335–363—upper-level British literature courses.

ENGL 365–376—upper-level American literature courses.

## 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.

## 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.

## PRE-OCCUPATIONAL THERAPY PATHWAY

Chemistry majors who wish to apply for admission to Widener's graduate occupational therapy program should take the following courses (note the most recent courses are factored into the prerequisite requirements):

- BIOL 121 & 123, BIOL 122 & 124
- PHYS 161 & 163 (physics requirement)
- PSY 105, 211, 212, 225, and 385
- SOC or ANTH elective (1 course)

## PRE-PHYSICAL THERAPY PATHWAY

Chemistry majors who wish to apply for admission to Widener's graduate physical therapy program should take the following courses (note the most recent courses are factored into the prerequisite requirements):

- BIOL 121 & 123, BIOL 122 & 124, BIOL 230
- PHYS 161 & 163, PHYS 162 & 164
- PSY 105, 385 & one other PSY elective
- SOC or ANTH elective

The last two chemistry courses taken prior to admission count as fulfilling the chemistry course requirement for admission to physical therapy program.

## 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 Freedom 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 and 142 (or MATH 131, 132, 133), 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, one HUM/SSCI elective, one free elective

#### 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 141/143, one technical elective, one free elective

#### Senior Spring

CSCI 409, CSCI 344, PHYS 142/144, ASC 400, one technical elective

## CURRICULUM—COMPUTER SCIENCE

Credits

<b>Freshman Fall</b> .....	<b>13.5</b>
CSCI 151 Introduction to Computer Science I* .....	4
MATH 151 Introduction to Discrete Mathematics I .....	3
ENGL 101 Reading, Thinking, & Writing .....	3
HUM/SSCI Elective .....	3
Physical Education Elective .....	0.5

<b>Freshman Spring</b> .....	<b>16.5</b>
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

<b>Sophomore Fall</b> .....	<b>16</b>
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

<b>Sophomore Spring</b> .....	<b>15</b>
CSCI 258 Data Structures & Algorithms .....	4
CSCI 264 Assembly Language .....	4
MATH 142 Calculus II** .....	4
HUM/SSCI Elective .....	3

<b>Junior Fall</b> .....	<b>17</b>
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 <sup>†</sup> .....	3

<b>Junior Spring</b> .....	<b>15</b>
CSCI 373 Software Engineering .....	3
CSCI 398 Research Topics .....	1
PHYS 142/144 College Physics II with Lab .....	5
Elective .....	3
Technical Elective <sup>†</sup> .....	3

<b>Senior Fall</b> .....	<b>17</b>
ASC 400 Values Seminar .....	3
CSCI 408 Senior Project I .....	2
HUM/SSCI Elective .....	3
Technical Electives <sup>†</sup> .....	6
Elective .....	3

<b>Senior Spring</b> .....	<b>14</b>
CSCI 344 Programming Languages .....	3
CSCI 409 Senior Project II .....	2
Technical Elective <sup>†</sup> .....	3
Electives .....	6

### TOTAL CREDITS **124**

\*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.

<sup>†</sup>Technical electives must be selected from the following: Any 300-level or 400-level CSCI course not in the core, ENGR 219 & 223; EE 230; MATH 331; 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, 350, 356, 372, 382, 392, 435, 452, 462. No more than 3 credits of CSCI 499 may be counted toward the technical elective requirement.

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 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 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, 373; MIS 290; and CSCI/MIS elective.\*\*

\*Students may substitute CSCI 143 and one CSCI elective for CSCI 151 & 152.

\*\*MIS and CSCI electives must be at the 300 level or above and may not include more than 3 credits of CSCI 499.

### 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 elective

#### Sophomore Summer

CSCI 373, CSCI elective, EC 101 or 202, SSCI elective, two free electives

#### Junior Fall

PRWR 215, PHIL 120, three CSCI/MIS electives

#### Junior Spring and Summer

Industry period (eight months)

#### Senior Fall

CSCI 408, CSCI 434, CSCI elective, MIS 370, PHIL 352

#### Senior Spring

ASC 400, CSCI 409, CSCI elective, CSCI/MIS elective, two free electives

## CURRICULUM—

### COMPUTER INFORMATION SYSTEMS

Credits

<b>Freshman Fall</b> .....	<b>13.5</b>
CSCI 151 Introduction to Computer Science I*	4
ENGL 101 Reading, Thinking, & Writing	3
MATH 117* Elementary Functions	3
SSCI Elective	3
Physical Education Elective	0.5

<b>Freshman Spring</b> .....	<b>13.5</b>
CSCI 152 Introduction to Computer Science II*	4
ENGL 102 Literature & Critical Writing	3
MATH 118* Elementary Calculus I	3
History/Art History Elective	3
Physical Education Elective	0.5

<b>Sophomore Fall</b> .....	<b>16</b>
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

<b>Sophomore Spring</b> .....	<b>16</b>
CSCI 258 Data Structures & Algorithms	4
EC 101 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

<b>Junior Fall</b> .....	<b>15</b>
ANTH 105 Cultural Anthropology	3
PRWR 215 Effective Business Communication (W)	3
CSCI 373 Software Engineering	3
MIS 370 Business Analytics	3
CSCI Elective**	3

<b>Junior Spring</b> .....	<b>16</b>
CSCI 398 Research Topics	1
CSCI/MIS Electives**	6
MIS Elective**	3
SSCI Elective, 200 level	3
Free Elective†	3

<b>Senior Fall</b> .....	<b>17</b>
CSCI 408 Senior Project I	2
CSCI 434 Database Systems I	3
PHIL 352 Business Ethics	3
CSCI Electives**	6
Free Elective†	3

<b>Senior Spring</b> .....	<b>17</b>
CSCI 409 Senior Project II	2
ASC 400 Values Seminar	3
CSCI/MIS Electives**	6
Free Electives†	6

### TOTAL CREDITS

124

\*Students may substitute CSCI 143 and one CSCI elective for CSCI 151 & 152; MATH 131 & 132 or MATH 141 & 142 for MATH 117 & 118.

\*\*MIS and CSCI electives must be at the 300 level or above, must include at least one of CSCI 311, 381, or 451, and may not include more than 3 credits of CSCI 499.

†No more than 10 courses should be taken within the School of Business Administration, excluding EC 101 and 202, and QA 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

<b>Freshman Fall</b> .....	<b>15.5</b>
BIOL 161/165 Biological Concepts I w/ Lab .....	4
CHEM 145 General Chemistry I .....	3
CHEM 147 General Chemistry Lab I .....	1
ENGL 101 Reading, Thinking, & Writing .....	3
ENVR 171 Principles of Environmental Science .....	3
ENVR 173 Investigating Environmental Science .....	1
Physical Education Elective .....	0.5
<b>Freshman Spring</b> .....	<b>14.5</b>
BIOL 162 Biological Concepts II .....	4
CHEM 146 General Chemistry II .....	3
CHEM 148 General Chemistry Lab II .....	1
ENGL 102 or ENGL 115–124 .....	3
ENVR 172 Principles of Sustainability Science .....	3
Physical Education Elective .....	0.5
<b>Sophomore Fall</b> .....	<b>16</b>
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
<b>Sophomore Spring</b> .....	<b>19</b>
ENVR 209 Meteorology .....	4
ENVR 261 Geographic Information Systems .....	4
ENVR 299 Research Methods & Analysis .....	4
MATH 132 Calculus II with Review .....	4
HUM/SSCI Elective .....	3
<b>Junior Fall</b> .....	<b>16</b>
CHEM 365/367 Analytical Chemistry w/ Lab .....	4
ENVR 301 Introductory Ecology <sup>+</sup> .....	4
PHYS 141/143 College Physics I w/ Lab .....	5
HUM/SSCI Elective .....	3
<b>Junior Spring</b> .....	<b>16</b>
BIOL 308 General Botany .....	4
ENVR 201 Environmental Geology .....	4
PHYS 142/144 College Physics II w/ Lab .....	5
HUM/SSCI Elective .....	3
<b>Senior Fall</b> .....	<b>16/18</b>
ENVR 304 Environmental Pollution .....	4
ENVR Electives* .....	6/8
HUM/SSCI Electives .....	6
<b>Senior Spring</b> .....	<b>15/17</b>
ASC 400 Values Seminar .....	3
ENVR Electives* .....	6/8
HUM/SSCI Elective .....	3
Free Elective .....	3
<b>TOTAL CREDITS</b> .....	<b>128–131</b>

\*Any 300- or 400-level ENVR course, or CE 304, 330, 347, 401, 435, 448, 457, or CHE 430. At least two of these must contain a lab component.

<sup>+</sup>ENVR 301 is only taught in the fall of even-numbered years.

## CURRICULUM—ENVIRONMENTAL SCIENCE/ BIOLOGY DOUBLE MAJOR

Credits

<b>Freshman Fall</b> .....	<b>15.5</b>
BIOL 161/165 Biological Concepts I w/ Lab .....	4
CHEM 145 General Chemistry I .....	3
CHEM 147 General Chemistry I Lab .....	1
ENGL 101 Reading, Thinking, & Writing .....	3
ENVR 171 Principles of Environmental Science .....	3
ENVR 173 Investigating Environmental Science .....	1
Physical Education Elective .....	0.5
<b>Freshman Spring</b> .....	<b>14.5</b>
BIOL 162 Biological Concepts II .....	4
CHEM 146 General Chemistry II .....	3
CHEM 148 General Chemistry II Lab .....	1
ENGL 102 or ENGL 115–124 .....	3
ENVR 172 Principles of Sustainability Science .....	3
Physical Education Elective .....	0.5
<b>Sophomore Fall</b> .....	<b>16</b>
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
<b>Sophomore Spring</b> .....	<b>17</b>
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
<b>Junior Fall</b> .....	<b>17</b>
BIOL 301 Introductory Ecology <sup>+</sup> .....	4
CHEM 365/367 Analytical Chemistry w/ Lab .....	4
ENVR 261 Geographic Information Systems .....	4
PHYS 141/143 College Physics I w/ Lab .....	5
<b>Junior Spring</b> .....	<b>19</b>
ENVR 201 Environmental Geology .....	4
ENVR 209 Meteorology .....	4
PHYS 142/144 College Physics II w/ Lab .....	5
HUM/SSCI Electives .....	6
<b>Senior Fall</b> .....	<b>18</b>
BIOL 319 Microbiology .....	4
ENVR 304 Environmental Pollution .....	4
BIOL/ENVR Elective** .....	4
HUM/SSCI Electives .....	6
<b>Senior Spring</b> .....	<b>19</b>
BIOL 308 General Botany .....	4
BIOL Electives* .....	8
BIOL/ENVR Elective** .....	4
ASC 400 Values Seminar .....	3
<b>TOTAL CREDITS</b> .....	<b>136</b>

\*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 or BIOL 302, 303, 306, 307, 309, 310, 311, 312, 313, 320, 327, 340, 405.

<sup>+</sup>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 CA 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.

### 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.

### PRE-OCCUPATIONAL THERAPY PATHWAY

Mathematics majors who wish to apply for admission to Widener's graduate occupational therapy program should take the following courses (note the most recent courses are factored into the prerequisite requirements):

- BIOL 121 & 123, BIOL 122 & 124
- PSY 105, 211, 212, 225, & 385
- SOC or ANTH elective (1 course)

## CURRICULUM—MATHEMATICS: TRADITIONAL TRACK

Credits

<b>Freshman Fall</b> .....	<b>14.5</b>
MATH 141 Calculus I .....	4
ENGL 101 Reading, Thinking, & Writing .....	3
HUM/SSCI Elective .....	3
Science Elective** .....	4
Physical Education Elective .....	0.5
<b>Freshman Spring</b> .....	<b>13.5</b>
MATH 142 Calculus II .....	4
HUM/SSCI Electives .....	6
Science Elective** .....	3
Physical Education Elective .....	0.5
<b>Sophomore Fall</b> .....	<b>16</b>
MATH 241 Multivariable Calculus .....	4
HUM/SSCI Elective .....	3
Science Elective** .....	3
Electives .....	6
<b>Sophomore Spring</b> .....	<b>16</b>
MATH 242 Elementary Differential Equations .....	3
PHYS 161/163 Physics I w/ Lab .....	4
HUM/SSCI Elective .....	3
Electives .....	6
<b>Junior Fall</b> .....	<b>17</b>
MATH 300-level courses* .....	8
HUM/SSCI Electives .....	6
Elective .....	3
<b>Junior Spring</b> .....	<b>17</b>
MATH 300-level courses* .....	8
HUM/SSCI Elective .....	3
Electives .....	6
<b>Senior Fall</b> .....	<b>14</b>
MATH 300-level courses* .....	8
ASC 400 Values Seminar .....	3
Elective .....	3
<b>Senior Spring</b> .....	<b>14</b>
MATH 300-level courses* .....	8
Electives .....	6
<b>TOTAL CREDITS</b> .....	<b>122</b>

\*A total of 32 credits, which must include MATH 331 and 341 and any other 300-level MATH courses.

\*\*A minimum of 10 credits, which must include one course from CSCI 131, 143, 144, or 151; and at least 2 courses from ASTR 200 or above; BIOL 108, 113, 118, 161, or above; CHEM 120 or above; CSCI 125 or above; ENVR 104 or above; or PHYS 162 or above.

### PRE-PHYSICAL THERAPY PATHWAY

Mathematics majors who wish to apply for admission to Widener's graduate physical therapy program should take the following courses (note the most recent courses are factored into the prerequisite requirements):

- BIOL 121 & 123, BIOL 122 & 124, BIOL 230
- PSY 105, 385, & one other PSY elective
- SOC or ANTH elective

**MATHEMATICS—SECONDARY EDUCATION  
CERTIFICATION**

Students majoring in mathematics can obtain secondary certification in mathematics by completing the secondary education track. Students must also follow the instructions and requirements in the Center for Education section. Students may seek certification in more than one field; however, this usually requires more than eight semesters. Students who wish to become certified in more than one area should work closely with their faculty advisor when planning course schedules.

**CURRICULUM—MATHEMATICS:  
SECONDARY EDUCATION TRACK<sup>†</sup> Credits**

<b>Freshman Fall</b> .....	<b>14.5</b>
MATH 141 Calculus I .....	4
ENGL 101 Reading, Thinking, & Writing .....	3
PSY 105 Introduction to Psychology .....	3
Science Elective*** .....	4
Physical Education Elective .....	0.5
<b>Freshman Spring</b> .....	<b>14.5</b>
ED 101 Intro to Teaching & Educational Tech .....	4
ENGL 102 .....	3
MATH 142 Calculus II .....	4
Science Elective*** .....	3
Physical Education Elective .....	0.5
<i>Portfolio Requirement – Transition Point I</i>	
<b>Sophomore Fall</b> .....	<b>16</b>
ED 250 Introduction to SPED .....	3
MATH 151 Introduction to Discrete Mathematics I* .....	3
MATH 241 Multivariable Calculus .....	4
HUM Elective .....	3
Science Elective*** .....	3
<b>Sophomore Spring</b> .....	<b>16</b>
ED/PSY 202 Educational 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
<i>Apply for teacher candidacy.</i>	
<i>Portfolio Requirement – Transition Point II</i>	

<b>Junior Fall</b> .....	<b>17</b>
ED 308 Methods—Secondary Mathematics .....	3
ED 1422 Teaching English Language Learners .....	3
MATH 273 Introduction to Probability .....	3
MATH 300-level courses**** .....	8
<i>Apply for student teaching.</i>	

<b>Junior Spring</b> .....	<b>17</b>
ED 1421 Literacy Intervention in the Content Areas for Learners with Disabilities .....	3
MATH 300-level courses**** .....	8
English Literature Elective** .....	3
SSCI Elective .....	3

<b>Senior Fall</b> .....	<b>15</b>
ED 1405 Collaboration & Inclusion .....	3
ED 1410 Student Teaching .....	12
<i>Portfolio Requirement – Transition Point III</i>	

<b>Senior Spring</b> .....	<b>14</b>
MATH 300-level courses**** .....	8
ASC 400 Values Seminar .....	3
SSCI Elective .....	3
<i>Portfolio Requirement – Transition Point IV</i>	

**TOTAL CREDITS 124**

<sup>†</sup>Changes may occur via the Pennsylvania Department of Education and will be communicated to students through their advisors. Education students must receive a grade of B (3.0) or better in the majority of education classes. Students must have a 2.9 overall GPA and pass PAPA, CORE, or have SAT or ACT scores that are high enough to offer exemption from these assessments to be admitted to teacher candidacy. Please see the Office of Certification for more information on testing. Students must have current criminal record checks, FBI clearances, and child abuse clearances.

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

\*\*Any of these will fulfill the PDE literature requirement:

ENGL 131, 132, 133, 134, 135—literary history surveys.

ENGL 115–124—intro-level literature courses that focus on genre.

ENGL 335–363—upper-level British literature courses.

ENGL 365–376—upper-level American literature courses.

\*\*\*A minimum of 10 credits, which must include one course from CSCI 131, 143, 144, or 151; and at least 2 courses from ASTR 200 or above; BIOL 108, 113, 118, 161, or above; CHEM 120 or above; CSCI 125 or above; ENVR 104 or above; or PHYS 162 or above.

\*\*\*\*MATH 325, 331, 332, 341, 351, 373.

## MATHEMATICS/COMPUTER SCIENCE

### DOUBLE MAJOR

Students who complete the curriculum ladder below receive a BS in mathematics and computer science.

### CURRICULUM—MATHEMATICS AND COMPUTER SCIENCE TRACK

Credits

<b>Freshman Fall</b> .....	<b>14.5</b>
MATH 141 Calculus I .....	4
CSCI 151 Introduction to Computer Science I .....	4
ENGL 101 Reading, Thinking, & Writing .....	3
HUM/SSCI Elective .....	3
Physical Education Elective .....	0.5
<b>Freshman Spring</b> .....	<b>15.5</b>
MATH 142 Calculus II .....	4
CSCI 152 Introduction to Computer Science II .....	4
PHYS 161/163 Physics I w/ Lab .....	4
HUM/SSCI Elective .....	3
Physical Education Elective .....	0.5
<b>Sophomore Fall</b> .....	<b>16</b>
MATH 151 Introduction to Discrete Mathematics I* .....	3
MATH 242 Elementary Differential Equations .....	3
CSCI 257 Object Oriented Programming .....	4
PHIL 120 Symbolic Logic .....	3
HUM/SSCI Elective .....	3
<b>Sophomore Spring</b> .....	<b>15</b>
MATH 152 Introduction to Discrete Mathematics II* .....	3
MATH 241 Multivariable Calculus .....	4
CSCI 258 Data Structures & Algorithms .....	4
CSCI 264 Assembly Language .....	4
<b>Junior Fall</b> .....	<b>16</b>
MATH 273 Introduction to Probability .....	3
MATH 300-Level Course** .....	4
CSCI 347 Computer Architecture I .....	3
CSCI Elective*** .....	3
HUM/SSCI Elective .....	3
<b>Junior Spring</b> .....	<b>16</b>
MATH 300-Level Course** .....	4
CSCI Elective*** .....	3
HUM/SSCI Elective .....	3
SSCI Elective .....	3
Elective .....	3
<b>Senior Fall</b> .....	<b>15</b>
HUM/SSCI Elective .....	3
CSCI 451 Operating Systems I .....	3
MATH 300-Level Course** .....	4
CSCI Elective*** .....	3
CSCI 408 or MATH 408 Senior Project I <sup>†</sup> .....	2
<b>Senior Spring</b> .....	<b>15</b>
ASC 400 Values Seminar .....	3
MATH 300-Level Course** .....	4
Electives .....	6
CSCI 409 or MATH 409 Senior Project II <sup>†</sup> .....	2
<b>TOTAL CREDITS</b> .....	<b>123</b>

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

\*\*A total of 16 credits which must include MATH 331 and any 300-level MATH courses except MATH 322.

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

<sup>†</sup>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 astrophysics by taking ASTR 210 and selecting ASTR 310 and 311 as two electives in the physics curriculum ladder. The astrophysics 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.

### PHYSICS/ELECTRICAL ENGINEERING DUAL DEGREE

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 DUAL DEGREE

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.

### 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.

## 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; and two from PHYS 281, 316/326, or 313/323.

## REQUIREMENTS—ASTROPHYSICS MINOR

The astrophysics minor requirements are designed to provide an introduction to the field of astrophysics. The requirements for a minor in astrophysics are ASTR 200, 210, 310, 311; MATH 141/142 (or the 131/132/133 sequence), 241, 242; PHYS 161, 162, 163, 164, 261/263; PHYS 313 (ENGR 213 & 214, or ME 315 may substitute for PHYS 313).

## CURRICULUM—PHYSICS

## Credits

<b>Freshman Fall</b> .....	<b>16</b>
PHYS 161/163 Physics I w/ Lab .....	4
MATH 141 Calculus I .....	4
CHEM 145/147 General Chemistry I w/ Lab .....	4
ENGL 101 Reading, Thinking, & Writing .....	3
PHYS 281 Physics Seminar .....	0.5
Physical Education Elective .....	0.5
<b>Freshman Spring</b> .....	<b>16</b>
PHYS 162/164 Physics II w/ Lab .....	4
MATH 142 Calculus II .....	4
CHEM 146/148 General Chemistry II w/ Lab .....	4
CSCI 131 Intro. to Programming .....	3
PHYS 281 Physics Seminar .....	0.5
Physical Education Elective .....	0.5
<b>Sophomore Fall</b> .....	<b>14.5</b>
ASTR 200 Astronomy & Astrophysics .....	3
MATH 241 Multivariable Calculus .....	4
ENGR 219/223 Electric Circuits w/ Lab .....	4
PHYS 281 Physics Seminar .....	0.5
HUM/SSCI Elective .....	3
<b>Sophomore Spring</b> .....	<b>16.5</b>
PHYS 261/263 Physics III w/ Lab .....	4
MATH 242 Differential Equations .....	3
ENGL 102 Literature & Critical Writing .....	3
PHYS 281 Physics Seminar .....	0.5
HUM/SSCI Electives (2) .....	6
<b>Junior Fall</b> .....	<b>16.5</b>
PHYS 271 Computational Methods in Physics .....	1
PHYS 309 Mathematical Methods of Physics .....	3
PHYS 315 Electromagnetic Theory <sup>††</sup> .....	3
HUM/SSCI Elective .....	3
PHYS 281 Physics Seminar .....	0.5
Free Electives (2) .....	6
<b>Junior Spring</b> .....	<b>14.5</b>
PHYS 316 Optics & Wave Motion <sup>†</sup> .....	3
PHYS 326 Optics Lab <sup>†</sup> .....	1
PHYS 413 Quantum Mechanics .....	4
PHYS 281 Physics Seminar .....	0.5
HUM/SSCI Electives (2) .....	6
<b>Senior Fall</b> .....	<b>16</b>
PHYS 313/323 Classical Mechanics w/ Lab <sup>††</sup> .....	4
Free Elective .....	3
HUM/SSCI Elective .....	3
Free Electives (2) .....	6
<b>Senior Spring</b> .....	<b>12</b>
PHYS 314 Thermodynamics <sup>†</sup> .....	3
ASC 400 Values Seminar .....	3
Free Electives (2) .....	6
<b>TOTAL CREDITS</b> .....	<b>123</b>

<sup>†</sup>PHYS 316/326 and PHYS 314 are taught in the spring semester alternate years.

<sup>††</sup>PHYS 315 and PHYS 313/323 are taught in the fall semester alternate years.

**PHYSICS—SECONDARY EDUCATION CERTIFICATION**

Students majoring in physics can obtain secondary certification in physics by completing the secondary education track. Students must also follow the instructions and requirements in the Center for Education section. Students may seek certification in more than one field; however, this usually requires more than eight semesters. Students who wish to become certified in more than one area should work closely with their faculty advisor when planning course schedules.

**CURRICULUM—SCIENCE EDUCATION:  
PHYSICS CERTIFICATION†**

**Credits**

<b>Freshman Fall</b> .....	<b>14.5</b>
ENGL 101 Reading, Thinking, & Writing .....	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
<b>Freshman Spring</b> .....	<b>16.5</b>
ED 101 Introduction to Teaching .....	4
ENGL 102 Literature & Critical Writing .....	3
MATH 142 Calculus II .....	4
PHYS 162 Physics II .....	3
PHYS 164 Physics II Lab .....	1
Physical Education Elective .....	0.5
<i>Portfolio Requirement – Transition Point I</i>	
<b>Sophomore Fall</b> .....	<b>17</b>
ASTR 200 Astronomy & Astrophysics .....	3
CHEM 145 General Chemistry I .....	3
CHEM 147 General Chemistry I Lab .....	1
ED 250 Effective Instructional Practices & Delivery Methods for All Levels of Special Education .....	3
MATH 241 Multivariable Calculus .....	4
HUM Elective .....	3
<b>Sophomore Spring</b> .....	<b>17</b>
CHEM 146 General Chemistry II .....	3
CHEM 148 General Chemistry II Lab .....	1
ED/PSY 202 Educational Psychology .....	3
MATH 242 Differential Equations .....	3
PHYS 261 Physics III .....	3
PHYS 263 Physics III Lab .....	1
SSCI Elective .....	3
<i>Apply for teacher candidacy.</i>	
<i>Portfolio Requirement – Transition Point II</i>	
<b>Junior Fall</b> .....	<b>17</b>
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
<i>Apply for student teaching.</i>	
<b>Junior Spring</b> .....	<b>15</b>
ASTR 210 Astronomy & Astrophysics Lab .....	1
ED 1421 Literacy Intervention in the Content Areas for Learners with Disabilities .....	3
PHYS 272 Experimental Methods of Physics .....	1
PHYS 314 Thermodynamics or PHYS 316 Optics*** .....	3
PHYS 413 Quantum Mechanics*** .....	4
HUM Elective .....	3

<b>Senior Fall</b> .....	<b>15</b>
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
<i>Portfolio Requirement – Transition Point III</i>	

<b>Senior Spring</b> .....	<b>15</b>
ED 1410 Student Teaching .....	12
ED 1405 Collaboration & Inclusion .....	3
<i>Portfolio Requirement – Transition Point IV</i>	

**TOTAL CREDITS** **126**

†Changes may occur via the Pennsylvania Department of Education and will be communicated to students through their advisors. Education students must receive a grade of B (3.0) or better in the majority of education classes. Students must have a 2.9 overall GPA and pass PAPA, CORE, or have SAT or ACT scores that are high enough to offer exemption from these assessments to be admitted to teacher candidacy. Please see the Office of Certification for more information on testing. 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.

\*\*Any of these will fulfill the PDE literature requirement:

ENGL 131, 132, 133, 134, 135—literary history surveys.

ENGL 115–124—intro-level literature courses that focus on genre.

ENGL 335–363—upper-level British literature courses.

ENGL 365–376—upper-level American literature courses.

\*\*\*PHYS 316, 326, 413 and PHYS 314, 492 are taught in the spring semester alternate years.

**SCIENCE**

**EARTH AND SPACE SCIENCE—SECONDARY  
EDUCATION CERTIFICATION**

Students can obtain secondary certification in Earth and space science by completing the secondary education track. Students must also follow the instructions and requirements in the Center for Education section. Students may seek certification in more than one field; however, this usually requires more than eight semesters. Students who wish to become certified in more than one area should work closely with their faculty advisor when planning course schedules.

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

**Credits**

<b>Freshman Fall</b> .....	<b>15.5</b>
BIOL 161/165 Biological Concepts I w/ Lab .....	4
CHEM 145 General Chemistry I .....	3
CHEM 147 General Chemistry Lab I .....	1
ENGL 101 Reading, Thinking, & Writing .....	3
MATH 141 Calculus I* .....	4
Physical Education Elective .....	0.5
<b>Freshman Spring</b> .....	<b>16.5</b>
BIOL 162 Biological Concepts II .....	4
CHEM 146 General Chemistry II .....	3
CHEM 148 General Chemistry Lab II .....	1
ED 101 Introduction to Teaching† .....	4
MATH 142 Calculus II* .....	4
Physical Education Elective .....	0.5
<i>Portfolio Requirement – Transition Point I</i>	

<b>Sophomore Fall</b> .....	<b>14</b>
ENGL 102 Literature & Critical Writing .....	3
ENVR 171 Principles of Environmental Science .....	3
ENVR 173 Investigating Environmental Science .....	1
PHYS 141/143 College Physics I w/ Lab .....	4
PSY 105 Introduction to Psychology .....	3
<b>Sophomore Spring</b> .....	<b>15</b>
ED/PSY 202 Educational Psychology .....	3
ENVR 261 Geographic Information Systems .....	4
ESSC/ENVR Elective* .....	4
PHYS 142/144 College Physics II w/ Lab .....	4
<i>Apply for teacher candidacy.</i>	
<i>Portfolio Requirement – Transition Point II</i>	
<b>Junior Fall</b> .....	<b>17</b>
ASTR 200 Astronomy & Astrophysics .....	3
ASTR 210 Astronomy & Astrophysics Lab .....	1
BIOL 301 Introductory Ecology .....	4
ED 250 Effective Instructional Practices & Delivery Methods for All Levels of Special Education .....	3
HUM Elective .....	3
SSCI Elective .....	3
<i>Apply for student teaching.</i>	
<b>Junior Spring</b> .....	<b>18</b>
ED 1421 Literacy Intervention in the Content Areas for Learners with Disabilities .....	3
ENVR 209 Meteorology .....	4
ENVR 201 Environmental Geology .....	4
ESSC/ENVR Elective** .....	4
SSCI Elective .....	3
<b>Senior Fall</b> .....	<b>15</b>
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
<i>Portfolio Requirement – Transition Point III</i>	
<b>Senior Spring</b> .....	<b>15</b>
ED 1410 Student Teaching .....	12
ED 1405 Collaboration & Inclusion .....	3
<i>Portfolio Requirement – Transition Point IV</i>	
<b>TOTAL CREDITS</b> .....	<b>126</b>

† Changes may occur via the Pennsylvania Department of Education and will be communicated to students through their advisors. Education students must receive a grade of B (3.0) or better in the majority of education classes. Students must have a 2.9 overall GPA and pass PAPA, CORE, or have SAT or ACT scores that are high enough to offer exemption from these assessments to be admitted to teacher candidacy. Please see the Office of Certification for more information on testing. 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.

\*\*\*Any of these will fulfill the PDE literature requirement:  
 ENGL 131, 132, 133, 134, 135—literary history surveys.  
 ENGL 115–124—intro-level literature courses that focus on genre.  
 ENGL 335–363—upper-level British literature courses.  
 ENGL 365–376—upper-level American literature courses.

## SCIENCE MINORS

### REQUIREMENTS—ASTRONOMY MINOR

The astronomy minor is designed to provide a broad sampling of astronomy and astronomy-related courses for nonscience majors. Core requirements: ASTR 100 (or ASTR 200), ASTR 110 (or ASTR 210 or ESSC 113), and ESSC 103. Elective courses: Two from ASTR 104, ASTR 205, ASTR 207, or ESSC 109. Two from ASTR 136 (Honors program students only), ESSC 109/119, ENVR 209 (may be taken in place of ESSC 109/119), PHIL 379, and PHYS 121/122 (or PHYS 141/142 or PHYS 161/162). A minimum of 20 credits is required for the minor.

### 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.

### REQUIREMENTS—NATURAL SCIENCE MINOR

The natural science minor is only for nonscience majors.

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—SUSTAINABILITY SCIENCE MINOR

The sustainability science minor is designed for students in all majors who have an interest in sustainability. The minor provides students with the necessary academic training to apply scientific knowledge and principles to sustainability practices. This minor helps students become better prepared to address some of our pressing local, national, and international sustainability problems.

ENVR 171 Principles of Environmental Science ..... 3  
 ENVR 172 Principles of Sustainability Science ..... 3  
 ENVR 261 Geographic Information Systems ..... 4  
 ENVR 361 Advanced Geographic Information Systems ..... 3  
 ENVR 304 Environmental Pollution\* ..... 4  
 CHEM 120 Sustainable Chemistry\*\* ..... 3

**TOTAL CREDITS** ..... **20**

\*CHEM 255/257 prerequisites are waived for students who have taken CHEM 120.

\*\*CHEM 120 is waived for students who have completed CHEM 145–148, CHEM 255/257.

Note: Students may wish to supplement the minor with one or more of these courses: BLAW 250 Legal & Ethical Environment of Business, EC 101 Principles of Macroeconomics, EC 202 Principles of Microeconomics, MGT 201 Principles of Management, MGT 335 Sustainability, Innovation, & Entrepreneurship.



# School of Business Administration

The School of Business Administration provides academic programs focused on educating undergraduate and graduate students to be professionals and leaders in business and management, as well as hospitality and tourism through its Center for Experience Management in Tourism and Hospitality.

## BUSINESS PROGRAMS

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All business administration programs are accredited by AACSB International—The Association to Advance Collegiate Schools of Business

### PHILOSOPHY AND PURPOSE OF PROGRAMS

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, business analytics, economics, finance, 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

The faculty of the School of Business Administration (SBA) endorsed the following strategic goals, which align with and are intended to support Widener University's 2020 Strategic Plan.

**Goal 1:** Through rigorous in-class and out-of-class experiences in graduate and undergraduate programs, prepare SBA students for personal and professional growth leading to successful careers.

**Goal 2:** Through curricular, co-curricular, and extracurricular experiences, engage faculty and alumni in preparing SBA students for career success.

**Goal 3:** Encourage and reward SBA students, faculty, administration, and staff to take advantage of leadership development opportunities offered by the university.

**Goal 4:** Through encouraging SBA faculty and staff to participate in diversity programming and through active recruitment of a diverse student body and faculty, prepare students for success in a diverse and global society and workplace.

**Goal 5:** Promote and support faculty and student scholarship.

**Goal 6:** Enhance student learning and SBA impact through civic engagement.

**Goal 7:** Create an agile and innovative environment, reflected in increased SBA graduate and undergraduate enrollment.

### LEARNING GOALS:

The learning goals for students graduating from the School of Business Administration's undergraduate programs are:

- SBA students will demonstrate the knowledge that is appropriate to the business discipline.
- SBA students will apply leadership skills in the development of business decisions.
- SBA students will be competent in the application of core business concepts and technologies.
- SBA students will utilize social responsibility principles in decision making.

### 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. Additionally, accounting majors take ACCT 451, a writing enriched course. 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 challenges students to study traditional business topics and current topics at a more intense, deeper level than in the traditional business curriculum. Students are admitted to the SBA Honors Program at two points: as first-semester freshmen (based on high school rank and SAT scores) and at the end of freshman year (based on GPA). SBA honors students take a minimum of two business honors courses and three business honors experiences. Business honors students must maintain a minimum 3.25 GPA and attend at least four SBA enrichment activities each academic year. Honors experiences include Oskin Leadership certification, research with a faculty member, graduate courses, international study trips, and community engagement projects.

## **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 an academic degree are strongly urged to perform an internship in the junior or senior year. The experience of working in a career related field significantly improves students' understanding of the field and improves job prospects upon graduation. 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. Economics and finance majors are required to participate in an internship for academic credit. To enroll in an internship for academic credit, students must be in good academic standing and follow all course registration procedures prior to the start of the internship. Additional information on internships may be attained by contacting the School of Business Administration's director of experiential education; economics and finance majors should contact the department head of accounting, economics, and finance.

## **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.

## **BLOOMBERG CERTIFICATE**

Upon the completion of the Bloomberg Market Concepts (BMC) eight-hour self-paced e-learning course, students are given the Bloomberg Certificate, indicating that students learned the essential parts in business through the Bloomberg and also familiarized themselves with the high-end Bloomberg Professional Service and they are comfortable and confident with the market data platform. The Bloomberg Certificate is not just an addition to the student's résumé, it is also an indication of the student's capability and comparative advantage over other competitors. To be awarded the Bloomberg Certificate, students should complete four modules as follows:

- Economic Indicators
- Currencies
- Fixed Income
- Equities

Modules in the BMC are woven with presentations and lectures on how to read, understand, and utilize the Bloomberg data, analysis, and graphs for topics in the four modules. Students interested in the Bloomberg Certificate should contact Assistant Professor of Finance YoungHa Ki.

## **SAP RECOGNITION AWARD**

The SAP Undergraduate 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 (grade of C or above required)
- MIS 430 ERP Systems & Workflow Management
- MIS 441 Decision Support Systems
- 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.

## **SAS JOINT CERTIFICATE**

The SAS Joint Certificate is awarded by Widener and the SAS Institute, which is a leading producer of analytics and data management software. The following four courses must be completed at Widener to receive this certificate:

- MIS 290 Management Information Systems
- QA 251 Elementary Statistics
- MIS 358 Database Management Systems
- MIS 370 Business Analytics

## **PRE-LAW PREPARATION**

Business students with a well-organized selection of electives in the College of Arts and Sciences will be well prepared for law school. Law schools do not suggest any single curriculum path as an ideal preparation. Business students considering the study of law should pursue the Legal Studies and Analysis Minor offered by the College of Arts and Sciences as part of their preparation. Widener University School of Law offers a special admittance program for Widener undergraduates. Students who graduate 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. Students seeking further information on these programs and on preparation for law school admission should contact pre-law advisors Professor Anne Servin (SBA) or Professor Suzanne Mannus (Arts and Sciences).

## ACCELERATED BS/MBA AND BS/MS PROGRAM

For outstanding students in business 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 MBA or MS in five years.

- 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). The GMAT requirement may be waived for students with a cumulative GPA of 3.3. If the student's cumulative GPA at graduation falls below a 3.3, the student may be required to submit acceptable GMAT scores before admission to the graduate program.
- Upon acceptance to the accelerated program, two graduate courses can be taken in the senior year to complete the bachelor's degree and be counted toward the MBA, Master in Taxation and Financial Planning, or Master in Business Process Innovation.
- First contact your undergraduate advisor and, after determining your eligibility, contact the department head and Office of SBA Graduate Programs.

## THE CURRICULA

### Basic Curricula in Accounting, Business Analytics, Economics, Finance, International Business, Management, and Marketing

Business majors 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 ACCT 105, BLAW 250, MGT 100, EC 101, MATH 117, MIS 180, ANTH 105, and ENGL 101 and 102 in the freshman year to gain the prerequisites for many subsequent 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).*

## 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.

## OVERLOAD POLICY

Business students are allowed to carry an overload if they have earned a cumulative GPA of 3.0 or above, or have earned senior standing, defined as successful completion of 89 or more credits. An overload in the school is defined as 18 or more academic credits (including military science credits) with a maximum of six academic courses.

## BUSINESS REQUIREMENTS

### Core Business Curriculum—(49 credits)

MGT 100 Understanding & Working in Organizations  
BLAW 250 Legal & Ethical Environment of Business  
MIS 180 Computing & Spreadsheets  
ACCT 105 & ACCT 205 Financial/Managerial Accounting  
EC 101 & EC 202 Macro- and Microeconomics (Social Science)  
MGT 210 Foundations of Management  
MIS 290 Management Information Systems  
QA 251-252 Elementary / Intermediate Statistics  
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, 32 credits  
Business Analytics, 27 credits  
Economics, 27-34 credits based upon concentration  
Finance, 27-34 credits  
International Business, 21 credits  
Management, 27 credits  
Free Electives (credits vary by major/concentration)\*\*

### Core Non-Business Requirements

ENGL 101 Reading, Thinking, & Writing  
ENGL 102 Literature & Critical Writing (Humanities)  
ANTH 105 Cultural Anthropology (Social Science)  
MATH 117 Elementary Functions (Math/Science)  
PRWR 215 Effective Business Communication  
PHIL 352 Business Ethics (Humanities)  
Humanities Electives (6 credits)\*\*  
Social Science Elective (3 credits)\*\*  
Math/Science Electives (9 credits)\*\*  
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.*

## 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 public accounting, corporate, or institutional (e.g., government and not-for-profit). 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 business 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, Attestation, & 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 MBA, or MS in business process innovation 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 Programs" on page 94.*

## CURRICULUM—ACCOUNTING Credits

Accounting majors pursuing the 150-credit requirement to become a CPA are strongly encouraged to take a one-course overload each semester starting in the freshman year spring semester. Students must be academically eligible to take a course overload and should consult with their academic advisors concerning the requirements.

<b>Freshman Fall</b> .....	<b>15.5</b>
ENGL 101 Reading, Thinking, & Writing .....	3
MATH 117 Elementary Functions* .....	3
MGT 100 Understanding & Working in Organizations .....	3
2 Electives <sup>†</sup> .....	6
Physical Education Elective .....	0.5
<b>Freshman Spring</b> .....	<b>16.5</b>
ACCT 105 Financial Accounting** .....	3
ANTH 105 Cultural Anthropology .....	3
PRWR 215 Effective Business Communication .....	3
MIS 180 Computing & Spreadsheets .....	1
2 Electives <sup>†</sup> .....	6
Physical Education Elective .....	0.5
<b>Sophomore Fall</b> .....	<b>15</b>
ACCT 205 Managerial Accounting** .....	3
EC 101 Principles of Macroeconomics .....	3
ENGL 102 Literature and Critical Writing .....	3
MIS 290 Management Information Systems .....	3
QA 251 Elementary Statistical Analysis .....	3

<b>Sophomore Spring</b> .....	<b>16</b>
ACCT 308 Intermediate Accounting** .....	4
ACCT 330 Accounting Information Systems <sup>††</sup> .....	3
EC 202 Principles of Microeconomics .....	3
MGT 210 Foundations of Management .....	3
QA 252 Intermediate Statistical Analysis .....	3
<b>Junior Fall</b> .....	<b>16</b>
ACCT 309 Intermediate Accounting II** .....	4
BLAW 250 Legal & Ethical Environment of Business .....	3
FIN 303 Financial Management .....	3
MKT 300 Marketing Principles .....	3
OPM 352 Operations Management .....	3
<b>Junior Spring</b> .....	<b>16</b>
ACCT 402 Advanced Accounting <sup>††</sup> .....	4
ACCT Elective .....	3
MGT 310 Leadership .....	3
MGT 365 International Business .....	3
PHIL 352 Business Ethics <sup>††</sup> .....	3
<b>Senior Fall</b> .....	<b>16</b>
ACCT 405 Federal Income Taxation <sup>††</sup> .....	4
ACCT 498 or MGT 451*** .....	3
MGT 452 Management Policy & Strategy .....	3
2 Electives <sup>†</sup> .....	6
<b>Senior Spring</b> .....	<b>16</b>
ACCT 415 Auditing, Attestation, & Prof. Responsibility <sup>††</sup> .....	4
ACCT 451 Accounting Seminar <sup>††</sup> .....	3
3 Electives <sup>†,††</sup> .....	9
<b>TOTAL CREDITS</b> .....	<b>127</b>

*\*Qualified students are urged to substitute MATH 141–142.*

*\*\*Students must achieve at least a C+ (2.3) in both ACCT 105 and 205 or receive permission from the head of the Department of Accounting, Economics, and Finance to enroll in ACCT 308 or 309. Students should review the course description for ACCT 309 because it has a prerequisite grade requirement.*

*\*\*\* 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, one social science elective, three science/math electives, and three 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 250 and 260) and/or two finance courses is a CPA requirement in some states. For information, contact the Department of Accounting, Economics, and Finance 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 may include courses from social science, computer science, criminal justice, and philosophy.

### REQUIREMENTS: FORENSIC ACCOUNTING MINOR

*Prerequisites are in parentheses.*

#### Required Courses (9 credits)

ACCT 307 Fraud Examination  
(ACCT 105, 205, junior standing)  
MIS 370 Business Analytics (MIS 290, QA 251, QA 252) *or*  
MIS 358 Database Systems (MIS 290)  
CSCI 393 Computer Forensics\* *or* selected Social Science  
Electives\*\*: choose from ANTH 256, CJ 105, CJ 205,  
CJ 210, CJ 225, CJ 268, CJ 285, CJ 305, CJ 320, CJ 325,  
PHIL 105\*\*\*, PSY 105, PSY 200, PSY 235, SOC 105,  
SOC 201, SOC 335

#### Elective Courses (6 credits)

Select **two** of the following courses:

ACCT 304 Case Studies in Financial Reporting and Analysis  
(ACCT 105, 205)  
ACCT 314 Advanced Managerial Accounting (ACCT 105, 205)  
ACCT 414 Case Studies in Managerial Accounting  
(ACCT 105, 205)  
ACCT 417 Internal Auditing (ACCT 105, 205)  
ACCT 435 Selected Topics in Accounting Information Systems  
(ACCT 105, ACCT 205, MIS 180, junior standing)  
ACCT 450 Selected Topics in Advanced Accounting  
(ACCT 105, ACCT 205, ACCT 308 or 309, junior standing)  
**One** MIS 300- or 400-level elective (MIS 290)  
CSCI 393 Computer Forensics (if not used as a required course)  
Any **one** SSCI or PHIL course not already taken from the social  
science and humanities elective list in the required courses  
section of the minor  
A course approved by the department head of accounting, econom-  
ics, and finance

\*CSCI 393 course counts as a science elective, and students must be  
signed into this course by the department head of computer science.

\*\*Courses in these areas fulfill social science requirements.

\*\*\*PHIL 105 counts as a humanities 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 105 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, Attestation, & Professional  
Responsibility (4 credits)  
ACCT 417 Internal Auditing  
ACCT 420 Accounting & Taxation of Mutual Funds  
ACCT 435 Selected Topics in Accounting Info. Systems  
ACCT 450 Selected Advanced Accounting Topics  
ACCT 451 Accounting Seminar  
BUS 320 Financial Literacy  
MIS 370 Business Analytics

\*Students must achieve at least a C+ (2.3) in both ACCT 105 and 205  
or receive permission from the Accounting Coordinator to enroll in  
ACCT 308 or 309.

Note: Students should be sure to satisfy prerequisite requirements for  
selected courses.

## MINOR IN TAXATION

This minor is designed for business students and enables them to develop more in-depth knowledge in a specialty area that continues to offer strong employment opportunities in the marketplace. Both the CFP and CPA examinations place significant emphasis on taxation concepts for individuals, business entities, estates, and trusts.

### REQUIREMENTS: TAXATION MINOR

Required SBA Course	Credits
ACCT 405 Federal Income Taxation* . . . . .	4
<b>Elective Courses</b>	
Select <b>two</b> of the following: . . . . .	6
ACCT 400 Taxation for the Business Manager or ACCT 407 Corporate Federal Income Tax**	
ACCT 408 Principles of Estate Planning**	
ACCT 409 Pensions and Retirement**	
<b>TOTAL CREDITS</b>	<b>10</b>

*Note: ACCT 105 and 205 are prerequisites for all courses. Students will also meet the requirements for an accounting minor. However, students will be awarded only one minor (accounting or taxation) based upon what is submitted when the minor is declared.*

*\*Although ACCT 405 is not a prerequisite for any of the undergraduate tax courses, students are highly recommended to complete ACCT 405 first.*

*business undergraduate students are permitted to substitute approved graduate tax courses from the MSTFP program upon successful completion of ACCT 405.*

## CERTIFICATE IN ACCOUNTING FOR CRIMINAL JUSTICE MAJORS

This certificate in accounting provides *non-business 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 minimum number of accounting credits needed to earn a certificate is 12 credits. Three credits of business law are also required. There are also non-SBA requirements.

### CERTIFICATE IN ACCOUNTING

Required Courses	Credits
ACCT 105 Financial Accounting . . . . .	3
ACCT 205 Managerial Accounting . . . . .	3
MIS 180 Computing & Spreadsheets <b>or</b> CSCI 101 . . . . .	1-3
BLAW 250 Legal Environment of Business <b>or</b> BLAW 260 Business Law <b>or</b> BLAW 280 Sports & the Law <b>or</b> . . . . .	3
CJ 320 White Collar Crime or CJ 225 Principles of Criminal Investigation . . . . .	3
Choose any <b>two</b> 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 405 Federal Income Taxation (4 credits) ACCT 407 Corporate Federal Income Tax ACCT 417 Internal Auditing A course approved by the head of the Department of Accounting and Information Management	

### TOTAL CREDITS

19-23

## 150-CREDIT HOUR REQUIREMENT IN PA

Students aspiring to be CPAs in the Commonwealth of Pennsylvania and most other states are required to have 150 credit hours of qualifying education. The SBA and the Department of Accounting, Economics, and Finance 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. Internships for credit count toward meeting this requirement. For questions concerning the 150-credit hour requirement and the options available, contact the department head of Accounting, Economics, and Finance.

## BUSINESS ANALYTICS

Business analytics 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 analytics major expands the breadth and depth of business and technology integration by sharing business faculty expertise with that of the computer science faculty from the College of Arts and Sciences. Business analytics 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 analytics major, such as Introduction to Informatics, Project Management, and Structured Systems Analysis and Design. Graduates learn 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.

## MINOR IN BUSINESS ANALYTICS

Business analytics 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 Business Analytics will give students the basics of business computing and the ability to learn how to plan for, analyze, design, and implement information technology in a business environment. Business students may earn a minor by completing the core requirements, MIS 358 Database Management Systems, and two 300-level or above MIS courses.

## CURRICULUM—BUSINESS ANALYTICS Credits

<b>Freshman Fall</b> .....	<b>15.5</b>
CSCI 131 Introduction to Programming .....	3
ENGL 101 Reading, Thinking, & Writing .....	3
MATH 117 Elementary Functions* .....	3
MGT 100 Understanding & Working in Organizations .....	3
DMI 101 Introduction to Informatics .....	3
Physical Education Elective .....	0.5
<b>Freshman Spring</b> .....	<b>16.5</b>
ACCT 105 Financial Accounting .....	3
ANTH 105 Cultural Anthropology** .....	3
PRWR 215 Effective Business Communication** .....	3
MIS 180 Computing & Spreadsheets** .....	1
Humanities Elective** .....	3
Math/Science Elective** .....	3
Physical Education Elective .....	0.5
<b>Sophomore Fall</b> .....	<b>15</b>
ACCT 205 Managerial Accounting .....	3
CSCI 200 Data Mining .....	3
EC 101 Principles of Macroeconomics** .....	3
MIS 290 Management Information Systems** (SAP course) ..	3
QA 251 Elementary Statistical Analysis .....	3
<b>Sophomore Spring</b> .....	<b>15</b>
BLAW 250 Legal & Ethical Environment of Business .....	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
<b>Junior Fall</b> .....	<b>15</b>
ENGL 102 Literature and Critical Writing .....	3
OPM 352 Operations Management** .....	3
FIN 303 Financial Management** .....	3
MGT 310 Leadership .....	3
MGT 365 International Business** .....	3
MIS 358 Database Management Systems .....	3
<b>Junior Spring</b> .....	<b>15</b>
COMS 201/DMI 201 Social Media Informatics .....	3
MIS 370 Business Analytics .....	3
MKT 300 Marketing Principles** .....	3
FIN 303 Financial Management** .....	3
OPM 360 Project Management .....	3
<b>Senior Fall</b> .....	<b>15</b>
MIS 430 ERP Systems (SAP course) .....	3
PHIL 352 Business Ethics** .....	3
MIS/CSCI Elective*** or SAP Course .....	3
Electives** .....	6
<b>Senior Spring</b> .....	<b>15</b>
MGT 452 Management Policy & Strategy** .....	3
MIS 453 Business Informatics Integration or	
MGT 451 Senior Project .....	3
Humanities Elective** .....	3
MIS Elective or SAP Course** .....	3
Elective** .....	3
<b>TOTAL CREDITS</b> .....	<b>122</b>

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

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

\*\*\*Excluding CSCI 101 and 102.

Note: Any student completing three 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
- Two economics electives
- One international SBA elective
- EC 497 Internship in Economics

See also "Cooperative Programs" on page 94.

CURRICULUM—ECONOMICS	Credits
<b>Freshman Fall</b> .....	<b>15.5</b>
ENGL 101 Reading, Thinking, & Writing .....	3
MATH 117 Elementary Functions* .....	3
MGT 100 Understanding & Working in Organizations .....	3
2 Electives <sup>†</sup> .....	6
Physical Education Elective .....	0.5
<b>Freshman Spring</b> .....	<b>16.5</b>
ANTH 105 Cultural Anthropology** .....	3
EC 101 Principles of Macroeconomics** .....	3
PRWR 215 Effective Business Communication** .....	3
MIS 180 Computing & Spreadsheets** .....	1
2 Electives <sup>†</sup> .....	6
Physical Education Elective .....	0.5
<b>Sophomore Fall</b> .....	<b>15</b>
ACCT 105 Financial Accounting .....	3
EC 202 Principles of Microeconomics** .....	3
ENGL 102 Literature and Critical Writing .....	3
MGT 210 Foundations of Management** .....	3
QA 251 Elementary Statistical Analysis .....	3
<b>Sophomore Spring</b> .....	<b>15</b>
ACCT 205 Managerial Accounting .....	3
BLAW 250 Legal & Ethical Environment of Business** .....	3
MIS 290 Management Information Systems** .....	3
QA 252 Intermediate Statistical Analysis .....	3
1 Elective <sup>†</sup> .....	3
<b>Junior Fall</b> .....	<b>15</b>
FIN 303 Financial Management** .....	3
MGT 310 Leadership .....	3
EC 312 Macroeconomic Theory .....	3
EC 408 International Economics .....	3
EC 497 Internship in Economics .....	3
<b>Junior Spring</b> .....	<b>15</b>
EC 311 Microeconomic Theory .....	3
EC 401 Money & Financial Institutions .....	3
MKT 300 Marketing Principles** .....	3
OPM 352 Operations Management** .....	3
MGT 365 International Business** .....	3
<b>Senior Fall</b> .....	<b>15</b>
MGT 452 Management Policy & Strategy .....	3
PHIL 352 Business Ethics .....	3
International SBA Elective .....	3
EC Elective .....	3
1 Elective <sup>†</sup> .....	3

<b>Senior Spring</b> .....	<b>15</b>
EC 451 Senior Project .....	3
EC Elective .....	3
3 Electives <sup>†</sup> .....	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, one social science elective, three science/math electives, 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 business 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.<sup>®</sup> Such registration would permit students who complete the degree to sit for the Certified Financial Planner (CFP<sup>®</sup>) 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 335\*\* Investments
- EC 401\* Money and Financial Institutions
- EC 408 International Economics
- EC 453\* Financial Services Seminar
- FIN 320\* Risk Management and Finance

\*Courses meet the CFP<sup>®</sup> course content requirements.

\*\*EC 335 is cross listed with FIN 305.

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<sup>®</sup> Certification Examination. Successful completion of the exam, along with other requirements, allows the candidate to use the CFP marks.

CFP<sup>®</sup>, Certified Financial Planner<sup>™</sup>, and CFP [with flame logo]<sup>®</sup> 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<sup>®</sup>, Certified Financial Planner<sup>™</sup>, and CFP [with flame logo]<sup>®</sup> 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

<b>Freshman Fall</b> .....	<b>15.5</b>
ENGL 101 Reading, Thinking, & Writing .....	3
MATH 117 Elementary Functions .....	3
MGT 100 Understanding & Working in Organizations .....	3
2 Electives <sup>†</sup> .....	6
Physical Education Elective .....	0.5
<b>Freshman Spring</b> .....	<b>16.5</b>
ANTH 105 Cultural Anthropology* .....	3
EC 101 Principles of Macroeconomics** .....	3
PRWR 215 Effective Business Communication .....	3
MIS 180 Computing & Spreadsheets* .....	1
2 Electives <sup>†</sup> .....	6
Physical Education Elective .....	0.5
<b>Sophomore Fall</b> .....	<b>15</b>
ACCT 105 Financial Accounting .....	3
EC 202 Principles of Microeconomics** .....	3
ENGL 102 Literature & Critical Writing .....	3
MGT 210 Foundations of Management .....	3
QA 251 Elementary Statistical Analysis .....	3
<b>Sophomore Spring</b> .....	<b>15</b>
ACCT 205 Managerial Accounting .....	3
BLAW 250 Legal & Ethical Environment of Business* .....	3
MIS 290 Management Information Systems .....	3
QA 252 Intermediate Statistical Analysis .....	3
1 Elective <sup>†</sup> .....	3
<b>Junior Fall</b> .....	<b>15</b>
EC 312 Macroeconomic Theory .....	3
EC 408 International Economics .....	3
FIN 303 Financial Management .....	3
MGT 310 Leadership .....	3
PHIL 352 Business Ethics* .....	3
<b>Junior Spring</b> .....	<b>15</b>
EC 311 Microeconomic Theory .....	3
EC 401 Money & Financial Institutions .....	3
FIN 320 Risk Management & Insurance Planning .....	3
OPM 352 Operations Management .....	3
MGT 365 International Business* .....	3
<b>Senior Fall</b> .....	<b>16</b>
ACCT 405 Federal Income Tax .....	4
ACCT 408 Principles of Estate Planning .....	3
FIN 305 Investments*** .....	3
EC 497 Internship in Economics .....	3
MKT 300 Marketing Principles .....	3
<b>Senior Spring</b> .....	<b>15</b>
ACCT 409 Pension & Retirement Planning .....	3
EC 453 Economic Seminar in Financial Services .....	3
MGT 452 Management Policy & Strategy .....	3
2 Electives <sup>†</sup> .....	6
<b>TOTAL CREDITS</b> .....	<b>123</b>

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

\*\* EC 101 or EC 202 may be offered in summer or spring.

\*\*\*EC 335 is cross listed with FIN 305.

<sup>†</sup>Economics/financial services majors must complete two humanities electives, one social science elective, three science/math electives, and one free elective.

## 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 (FIN 497):

- 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

<b>Freshman Fall</b> .....	<b>15.5</b>
ENGL 101 Reading, Thinking, & Writing .....	3
MATH 117 Elementary Functions* .....	3
MGT 100 Understanding & Working in Organizations .....	3
2 Electives† .....	6
Physical Education Elective .....	0.5
<b>Freshman Spring</b> .....	<b>16.5</b>
ACCT 105 Financial Accounting .....	3
ANTH 105 Cultural Anthropology .....	3
PRWR 215 Effective Business Communication** .....	3
MIS 180 Computing & Spreadsheets** .....	1
EC 101 .....	3
Elective† .....	3
Physical Education Elective .....	0.5
<b>Sophomore Fall</b> .....	<b>15</b>
ACCT 205 Managerial Accounting .....	3
EC 202 Principles of Macroeconomics** .....	3
ENGL 102 Literature & Critical Writing .....	3
QA 251 Elementary Statistical Analysis .....	3
Elective† .....	3
<b>Sophomore Spring</b> .....	<b>15</b>
BLAW 250 Legal & Ethical Environment of Business .....	3
MGT 210 Foundations of Management** .....	3
FIN 303 Financial Management** .....	3
MIS 290 Management Information Systems** .....	3
QA 252 Intermediate Statistical Analysis .....	3
<b>Junior Fall</b> .....	<b>15</b>
EC 312 Macroeconomic Theory .....	3
FIN 305 Investments .....	3
MGT 365 International Business** .....	3
OPM 352 Operations Management** .....	3
1 Elective† .....	3
<b>Junior Spring</b> .....	<b>15</b>
MKT 300 Marketing Principles** .....	3
MGT 310 Leadership .....	3
2 FIN Electives .....	6
1 Elective† .....	3
<b>Senior Fall</b> .....	<b>15</b>
FIN 423 International Finance .....	3
PHIL 352 Business Ethics .....	3
FIN 497 Internship in Finance .....	3
FIN Elective .....	3
1 Elective† .....	3

<b>Senior Spring</b> .....	<b>15</b>
FIN 450 Financial Practices & Regulations .....	3
MGT 452 Management Policy & Strategy .....	3
1 FIN Electives .....	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.

†Finance majors must complete two humanities electives, one social science elective, three science/math electives, and three free electives.

See also “Cooperative Programs” on page 94.

## MINOR IN FINANCE

The finance minor is designed for students who are majoring in accounting, business analytics, international business, management, or marketing and who have an interest in finance. This minor enables students to further pursue their intellectual interests, enhance their career options, and receive recognition that they have completed a minor field of study. The electives chosen to fulfill the finance minor will broaden students’ knowledge of financial and financial planning matters as well as strengthen their powers of reasoning and analytical skills. This minor will enhance professional development beyond the students’ first job. It will also help to prepare students for graduate and law school.

Students may earn a minor by completing the business core finance and economics requirements as well as three 300-level or above finance electives.

### CURRICULUM—FINANCE/ FINANCIAL PLANNING TRACK Credits

<b>Freshman Fall</b> .....	<b>15.5</b>
ENGL 101 Reading, Thinking, & Writing .....	3
MATH 117 Elementary Functions .....	3
MGT 100 Understanding & Working in Organizations .....	3
2 Electives† .....	6
Physical Education Elective .....	0.5
<b>Freshman Spring</b> .....	<b>16.5</b>
ACCT 105 Financial Accounting .....	3
ANTH 105 Cultural Anthropology* .....	3
PRWR 215 Effective Business Communication .....	3
MIS 180 Computing & Spreadsheets* .....	1
2 Electives† .....	6
Physical Education Elective .....	0.5
<b>Sophomore Fall</b> .....	<b>15</b>
ACCT 205 Managerial Accounting .....	3
EC 101 Principles of Macroeconomics** .....	3
ENGL 102 Literature & Critical Writing .....	3
MGT 210 Foundation of Management .....	3
QA 251 Elementary Statistical Analysis .....	3
<b>Sophomore Spring</b> .....	<b>15</b>
BLAW 250 Legal & Ethical Environment of Business .....	3
EC 202 Principles of Microeconomics** .....	3
FIN 303 Financial Management** .....	3
MIS 290 Management Information Systems .....	3
QA 252 Intermediate Statistical Analysis .....	3
<b>Junior Fall</b> .....	<b>15</b>
EC 312 Macroeconomic Theory .....	3
FIN 305 Investments .....	3
MGT 310 Leadership .....	3
PHIL 352 Business Ethics* .....	3
1 Elective† .....	3

<b>Junior Spring</b> .....	<b>15</b>
ACCT 409 Pension & Retirement Planning .....	3
FIN 320 Risk Management & Insurance Planning .....	3
MGT 365 International Business* .....	3
OPM 352 Operations Management .....	3
1 Elective <sup>†</sup> .....	3
<b>Senior Fall</b> .....	<b>16</b>
ACCT 405 Federal Income Tax .....	4
ACCT 408 Principles of Estate Planning .....	3
MKT 300 Marketing Principles .....	3
FIN Elective .....	3
FIN 497 Internship in Finance .....	3
<b>Senior Spring</b> .....	<b>15</b>
FIN 450 Financial Practices & Regulations .....	3
FIN 453 Financial Planning Seminar .....	3
MGT 452 Management Policy & Strategy .....	3
FIN Elective .....	3
1 Elective <sup>†</sup> .....	3
<b>TOTAL CREDITS</b> .....	<b>123</b>

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

\*\*EC 101 and 202 may be offered in summer or spring.

<sup>†</sup>Finance/financial planning majors must complete two humanities electives, one social science elective, three science/math electives, and one free elective.

See also "Cooperative Programs" on page 94.

## 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" on page 94.

<b>CURRICULUM—INTERNATIONAL BUSINESS</b>	<b>Credits</b>
<b>Freshman Fall</b> .....	<b>15.5</b>
ANTH 105 Cultural Anthropology .....	3
ENGL 101 Reading, Thinking, & Writing .....	3
MATH 117 Elementary Functions* .....	3
MGT 100 Understanding & Working in Organizations .....	3
Modern Language Elective .....	3
Physical Education Elective .....	0.5
<b>Freshman Spring</b> .....	<b>16.5</b>
EC 101 Principles of Macroeconomics <sup>††</sup> .....	3
POLS 102 Foreign Government & Politics .....	3
PRWR 215 Effective Business Communication <sup>††</sup> .....	3
MIS 180 Computing & Spreadsheets <sup>††</sup> .....	1
Modern Language Elective .....	3
Elective <sup>†</sup> .....	3
Physical Education Elective .....	0.5
<b>Sophomore Fall</b> .....	<b>15</b>
ACCT 105 Financial Accounting .....	3
EC 202 Principles of Microeconomics <sup>††</sup> .....	3
ENGL 102 Literature & Critical Writing .....	3
MGT 210 Foundations of Management <sup>††</sup> .....	3
QA 251 Elementary Statistical Analysis .....	3
<b>Sophomore Spring</b> .....	<b>15</b>
ACCT 205 Managerial Accounting .....	3
BLAW 250 Legal & Ethical Environment of Business <sup>††</sup> .....	3
MGT 365 International Business .....	3
QA 252 Intermediate Statistical Analysis .....	3
Elective <sup>†</sup> .....	3
<b>Junior Fall</b> .....	<b>15</b>
FIN 303 Financial Management .....	3
MGT 310 Leadership .....	3
MIS 290 Management Information Systems <sup>††</sup> .....	3
MKT 300 Marketing Principles <sup>††</sup> .....	3
POLS 221 Introduction to International Relations .....	3
<b>Junior Spring</b> .....	<b>15</b>
MHR 465 International Human Resource Management .....	3
OPM 352 Operations Management <sup>††</sup> .....	3
PHIL 352 Business Ethics .....	3
POLS 222 American Foreign Policy .....	3
Elective <sup>†</sup> .....	3
<b>Senior Fall</b> .....	<b>15</b>
EC 408 International Economics .....	3
FIN 423 International Finance .....	3
MGT 451 Senior Project <sup>††</sup> .....	3
MGT Elective <sup>††</sup> .....	3
Elective <sup>†</sup> .....	3
<b>Senior Spring</b> .....	<b>15</b>
MGT 452 Management Policy & Strategy <sup>††</sup> .....	3
MKT 410 International Marketing .....	3
OPM 445 Management of Tech., Productivity, & Change <sup>††</sup> .....	3
Two Electives <sup>†</sup> .....	6
<b>TOTAL CREDITS</b> .....	<b>122</b>

<sup>†</sup>International business majors must complete three science/math electives and three free electives.

<sup>††</sup>Course may be taken in either the fall or spring semester.

## 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:

- EC 408 International Economics
- FIN 423 International Finance
- MHR 465 International Human Resource Mgt
- MKT 410 International Marketing
- SMGT 350 International Sport Management - Barcelona

*Additional SBA international study abroad course as approved by the management department.*

## 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 Programs" on page 94*

### CONCENTRATION IN MANAGEMENT

Students in the 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 management skills will be well positioned to perform effectively in their jobs and advance their careers. In addition to the core business curriculum, students in the management concentration 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 335 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 give students state of the art knowledge in talent management, human capital development, job design, and managing a diverse workforce. In addition to the core business curriculum, students in the human resource management concentration 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 Business elective

### CONCENTRATION IN OPERATIONS MANAGEMENT

Business competitiveness is highly driven by effective management of operations. This concentration is for business students interested in management careers in service and manufacturing operations. In addition to the core business curriculum, students in the operations management concentration take the following courses:

#### Required Courses:

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

#### Elective Courses—Select any 3 of the following courses:

- MIS 370 Business Analytics
- MIS 430 ERP Systems & Workflow Management
- MKT 409 Customer Relationship Management
- OPM 360 Project Management

### 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 take the following courses:

- BLAW 280 Sports & the Law
- COMS 130 Mass Media & Society
- MHR 316 Intro. to Human Res. Mgmt.
- 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

<b>CURRICULUM—MANAGEMENT</b>	<b>Credits</b>
<b>Freshman Fall</b> .....	<b>15.5</b>
ENGL 101 Reading, Thinking, & Writing .....	3
MATH 117 Elementary Functions* .....	3
MGT 100 Understanding & Working in Organizations .....	3
2 Electives† .....	6
Physical Education Elective .....	0.5
<b>Freshman Spring</b> .....	<b>16.5</b>
ANTH 105 Cultural Anthropology .....	3
EC 101 Principles of Macroeconomics** .....	3
PRWR 215 Effective Business Communication** .....	3
MIS 180 Computing & Spreadsheets** .....	1
2 Electives† .....	6
Physical Education Elective .....	0.5
<b>Sophomore Fall</b> .....	<b>15</b>
ACCT 105 Financial Accounting .....	3
BLAW 250 Legal & Ethical Environment of Business** .....	3
EC 202 Principles of Microeconomics** .....	3
MGT 210 Foundations of Management** .....	3
QA 251 Elementary Statistical Analysis .....	3
<b>Sophomore Spring</b> .....	<b>15</b>
ACCT 205 Managerial Accounting .....	3
ENGL 102 Literature & Critical Writing .....	3
MIS 290 Management Information Systems** .....	3
QA 252 Intermediate Statistical Analysis .....	3
Elective† .....	3
<b>Junior Fall</b> .....	<b>15</b>
FIN 303 Financial Management** .....	3
MGT 310 Leadership .....	3
MKT 300 Marketing Principles** .....	3
MHR 316 Introduction to Human Resource Mgmt. ....	3
Elective† .....	3
<b>Junior Spring</b> .....	<b>15</b>
OPM 352 Operations Management** .....	3
PHIL 352 Business Ethics .....	3
OPM 360 Project Management .....	3
MGT 365 International Business** .....	3
MGT Elective .....	3
<b>Senior Fall</b> .....	<b>15</b>
OPM 445 Management of Tech., Prod., & Change** .....	3
MGT 451 Management Seminar** .....	3
MGT Elective .....	3
2 Electives† .....	6
<b>Senior Spring</b> .....	<b>15</b>
MGT 452 Management Policy & Strategy** .....	3
MGT Elective** .....	3
3 Electives† .....	9
<b>TOTAL CREDITS</b> .....	<b>122</b>

\*\*Course may be taken in either the fall or spring semester.  
†Management majors must complete two humanities electives, one social science elective, three science/math electives, and five free electives.

<b>CURRICULUM—MANAGEMENT: MHR, OPM</b>	<b>Credits</b>
<b>Freshman Fall</b> .....	<b>15.5</b>
ENGL 101 Reading, Thinking, & Writing .....	3
MATH 117 Elementary Functions* .....	3
MGT 100 Understanding & Working in Organizations .....	3
2 Electives† .....	6
Physical Education Elective .....	0.5
<b>Freshman Spring</b> .....	<b>16.5</b>
ANTH 105 Cultural Anthropology .....	3
EC 101 Principles of Macroeconomics** .....	3
PRWR 215 Effective Business Communication** .....	3
MIS 180 Computing & Spreadsheets** .....	1
2 Electives† .....	6
Physical Education Elective .....	0.5
<b>Sophomore Fall</b> .....	<b>15</b>
ACCT 105 Financial Accounting .....	3
EC 202 Principles of Microeconomics** .....	3
MGT 210 Foundations of Management** .....	3
QA 251 Elementary Statistical Analysis .....	3
Elective† .....	3
<b>Sophomore Spring</b> .....	<b>15</b>
ACCT 205 Managerial Accounting .....	3
ENGL 102 Literature & Critical Writing .....	3
MIS 290 Management Information Systems** .....	3
MKT 300 Marketing Principles or OPM 352 Operations Management** .....	3
QA 252 Intermediate Statistical Analysis .....	3
<b>Junior Fall</b> .....	<b>15</b>
BLAW 250 Legal & Ethical Environment of Business** .....	3
PHIL 352 Business Ethics .....	3
MGT 365 International Business** .....	3
MHR/MKT/OPM Elective*** .....	3
Elective† .....	3
<b>Junior Spring</b> .....	<b>15</b>
MGT 310 Leadership .....	3
MKT 300 Marketing Principles** .....	3
FIN 303 Financial Management** .....	3
MHR/MKT/OPM Elective*** .....	3
Elective† .....	3
<b>Senior Fall</b> .....	<b>15</b>
OPM 445 Management of Tech., Prod., & Change** .....	3
MGT 451 Management Seminar** .....	3
International SBA Elective .....	3
2 Electives† .....	6
<b>Senior Spring</b> .....	<b>15</b>
MGT 452 Management Policy & Strategy** .....	3
MHR/MKT/OPM Electives*** .....	6
2 Electives† .....	6
<b>TOTAL CREDITS</b> .....	<b>122</b>

\*Qualified students are urged to substitute MATH 141, 142.  
\*\*Course may be taken in either the fall or spring semester.  
\*\*\*If OPM student, one elective must be OPM 460, which is offered alternate spring semesters.  
†Management majors must complete two humanities electives, one social science elective, three science/math electives, and five free electives.

**CURRICULUM—MANAGEMENT:  
SPORT MANAGEMENT**

**Credits**

<b>Freshman Fall</b> .....	<b>15.5</b>
ENGL 101 Reading, Thinking, & Writing .....	3
MATH 117 Elementary Functions* .....	3
MGT 100 Understanding & Working in Organizations .....	3
PSY 105 Introduction to Psychology .....	3
Elective† .....	3
Physical Education Elective .....	0.5
<b>Freshman Spring</b> .....	<b>16.5</b>
ANTH 105 Cultural Anthropology .....	3
COMS 130 Mass Media & Society .....	3
EC 101 Principles of Macroeconomics** .....	3
PRWR 215 Effective Business Communication** .....	3
MIS 180 Computing & Spreadsheets** .....	1
Elective† .....	3
Physical Education Elective .....	0.5
<b>Sophomore Fall</b> .....	<b>15</b>
ACCT 105 Financial Accounting .....	3
EC 202 Principles of Microeconomics** .....	3
ENGL 102 Literature & Critical Writing .....	3
MGT 210 Foundations of Management** .....	3
QA 251 Elementary Statistical Analysis .....	3
<b>Sophomore Spring</b> .....	<b>15</b>
ACCT 205 Managerial Accounting .....	3
BLAW 250 Legal & Ethical Environment of Business** .....	3
MKT 300 Marketing Principles** .....	3
QA 252 Intermediate Statistical Analysis .....	3
SMGT 300 Sport Management & Administration .....	3
<b>Junior Fall</b> .....	<b>15</b>
BLAW 280 Sports & the Law .....	3
FIN 303 Financial Management** .....	3
MGT 365 International Business** .....	3
MIS 290 Management Information Systems** .....	3
SMGT 340 Sport Sales & Marketing .....	3
<b>Junior Spring</b> .....	<b>15</b>
MGT 310 Leadership .....	3
OPM 352 Operations Management** .....	3
PHIL 352 Business Ethics .....	3
2 Electives† .....	6
<b>Senior Fall</b> .....	<b>15</b>
OPM 445 Management of Tech., Prod., & Change** .....	3
MHR 316 Introduction to Human Resource Mgmt. ....	3
SMGT 451 Seminar in Sport Management .....	3
2 Electives† .....	6
<b>Senior Spring</b> .....	<b>15</b>
MGT 452 Management Policy & Strategy .....	3
PE 206 Org & Adm of Coach <b>or</b> 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, three science/math electives, and three free electives.

**MINORS IN MANAGEMENT**

Students pursuing a major in the School of Business Administration may earn a minor in human resource management by completing three 300-level or above elective courses in the field. To earn a minor in operations management, students must complete OPM 460 and two of the following courses: OPM 360, MIS 370, MIS 430, or an additional OPM course as approved by the Management Department. 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.

**SUSTAINABILITY MANAGEMENT MINOR  
FOR MAJORS IN SBA**

Sustainable development meets the needs of the present without compromising the ability of future generations to meet their own needs. Students interested in managing or knowing more about 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 to minor in sustainability management.

**Required Courses:**

- CHEM 120 Sustainable Chemistry
- ENVR 172 Principles of Sustainability Science
- MGT 335 Sustainability, Innovation, & Entrepreneurship

**TOTAL CREDITS** **9**

Students are encouraged to take ENVR 100 Introduction to Environmental Science or ENVR 171 Principles of Environmental Science. Students are especially encouraged to take ENVR 180 Sustainable Development: Service Learning in Tropical America.

**MARKETING**

This major prepares students for careers in sales, advertising, promotions, public relations, distribution, and other dynamic 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 major expose students to state-of-the-art concepts and tools, and help students develop skills needed for a job in this exciting field.

**Required Courses:**

- Core business curriculum courses
- MGT 451 Senior Project
- MKT 406 Marketing Research
- MKT 410 International Marketing
- OPM 445 Mgmt of Technology, Productivity, & Change
- Four marketing electives\*
- One course from the list below in place of the social science elective (please see course descriptions for any prerequisites):
- PSY 203 Consumer Behavior & Advertising
- COMS 201 Social Media Informatics
- COMS 275 Introduction to Public Relations
- COMS 280 Introduction to Advertising
- COMS 375 PR Event Planning and Campaigns
- COMS 380 IMC Campaigns

\*In addition to the required business programs core marketing course (MKT 300).

See also “Cooperative Program” on page 99.

**CURRICULUM—MARKETING****CREDITS**

<b>Freshman Fall</b> .....	<b>15.5</b>
ENGL 101 Reading, Thinking, & Writing .....	3
MATH 117 Elementary Functions .....	3
MGT 100 Understanding & Working in Organizations .....	3
2 Electives* .....	6
Physical Education Elective .....	0.5
<b>Freshman Spring</b> .....	<b>16.5</b>
ACCT 105 Financial Accounting .....	3
ANTH 105 Cultural Anthropology .....	3
EC 101 Principles of Macroeconomics .....	3
MIS 180 Computing & Spreadsheets .....	1
PRWR 215 Effective Communication .....	3
1 Elective* .....	3
Physical Education Elective .....	0.5
<b>Sophomore Fall</b> .....	<b>15</b>
EC 202 Principles of Microeconomics .....	3
ENGL 102 Literature & Critical Writing .....	3
MGT 210 Foundations of Management .....	3
QA 251 Elementary Statistical Analysis .....	3
1 Elective* .....	3
<b>Sophomore Spring</b> .....	<b>15</b>
ACCT 205 Managerial Accounting .....	3
BLAW 250 Legal & Ethical Environment of Business .....	3
MIS 290 Management Information Systems .....	3
MKT 300 Marketing .....	3
QA 252 Intermediate Statistical Analysis .....	3
<b>Junior Fall</b> .....	<b>15</b>
MGT 310 Leadership .....	3
MKT 406 Marketing Research .....	3
Marketing Elective .....	3
OPM 352 Operations Management .....	3
1 Elective* .....	3
<b>Junior Spring</b> .....	<b>15</b>
FIN 303 Financial Management .....	3
MGT 365 International Business .....	3
MKT 410 International Marketing .....	3
PHIL 352 Business Ethics .....	3
1 Elective* .....	3
<b>Senior Fall</b> .....	<b>15</b>
MGT 451 Senior Project .....	3
2 Marketing Electives .....	6
2 Electives* .....	6
<b>Senior Spring</b> .....	<b>15</b>
MGT 452 Management Policy & Strategy .....	3
OPM 445 Mgmt of Technology, Productivity, & Change .....	3
1 Marketing Elective .....	3
2 Electives** .....	6

**TOTAL CREDITS****122**

\*Marketing majors must complete two humanities, three science/mathematics electives, and four free electives (PSY 105 recommended). Marketing majors are also required to complete PSY 203, COMS 201, COMS 275, COMS 280, COMS 375 or COMS 380 as a social science elective.

**MINOR IN MARKETING**

The marketing minor is designed for students who are majoring in accounting, business analytics economics, finance, international business, or management, and who have an interest in marketing. These students may earn the minor by completing MKT 300 Marketing, as well as three more 300-level or above marketing electives.

**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 SBA 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. Students are strongly encouraged to do both work assignments. However, they may choose to do only one work assignment. 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** ..... 15.5  
 ENGL 101 Reading, Thinking, & Writing ..... 3  
 MATH 117 Elementary Functions\* ..... 3  
 MGT 100 Understanding & Working in Organizations ..... 3  
 2 Electives† ..... 6  
 Physical Education Elective ..... 0.5

**Freshman Spring** ..... 16.5  
 ACCT 105 Financial Accounting\*\* ..... 3  
 ANTH 105 Cultural Anthropology\*\* ..... 3  
 PRWR 215 Effective Business Communication ..... 3  
 MIS 180 Computing & Spreadsheets\*\* ..... 1  
 2 Electives† ..... 6  
 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  
 QA 251 Elementary Statistical Analysis ..... 3  
 Elective† ..... 3

**Sophomore Fall** First work period (four months)  
**Sophomore Spring** ..... 16  
 ACCT 308 Intermediate Accounting I\*\* ..... 4  
 ACCT 330 Accounting Information Systems†† ..... 3  
 ENGL 102 Literature & Critical Writing ..... 3  
 MIS 290 Management Information Systems ..... 3  
 QA 252 Intermediate Statistical Analysis ..... 3

**Sophomore Summer** ..... 16  
 ACCT 309 Intermediate Accounting II\*\* ..... 4  
 FIN 303 Financial Management ..... 3  
 MGT 310 Leadership ..... 3  
 MKT 300 Marketing Principles ..... 3  
 PHIL 352 Business Ethics ..... 3

**Junior Fall** ..... 16  
 ACCT 405 Federal Income Tax ..... 4  
 BLAW 250 Legal & Ethical Environment Business ..... 3  
 EC 101 Principles of Macroeconomics ..... 3  
 MGT 365 International Business ..... 3  
 ACCT Elective ..... 3

**Junior Spring and Summer** Second Work Period (eight months)  
**Senior Fall** ..... 17  
 ACCT 402 Advanced Accounting ..... 4  
 ACCT 415 Auditing, Attestation, & Prof. Responsibility†† ..... 4  
 OPM 352 Operations Management ..... 3  
 2 Electives\*\*\* ..... 6

**Senior Spring** ..... 15  
 ACCT 451 Accounting Seminar †† ..... 3  
 ACCT 498 or MGT 451\*\*\* ..... 3  
 MGT 452 Management Policy & Strategy†† ..... 3  
 2 Electives†,†† ..... 6

**TOTAL CREDITS** ..... **127**

\*Qualified students are urged to substitute MATH 141–142.  
 \*\*A C+ (2.3) in ACCT 105 & 205 or permission from the Department of Accounting and Information Management head is required to enroll in ACCT 308 or 309. ACCT 309 has a prerequisite grade requirement.  
 \*\*\*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, one social science elective, three science/math electives, and three 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 250 & 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—BUSINESS ANALYTICS CO-OP CREDITS**

**Freshman Fall** ..... 15.5  
 CSCI 131 Introduction to Programming ..... 3  
 ENGL 101 Reading, Thinking, & Writing ..... 3  
 MATH 117 Elementary Functions\* ..... 3  
 MGT 100 Understanding & Working in Organizations ..... 3  
 MIN 101 Introduction to Informatics ..... 3  
 Physical Education Elective ..... 0.5

**Freshman Spring** ..... 16.5  
 ACCT 105 Financial Accounting ..... 3  
 ANTH 105 Cultural Anthropology\*\* ..... 3  
 EC 101 Principles of Macroeconomics\*\* ..... 3  
 MIS 180 Computing & Spreadsheets\*\* ..... 1  
 PRWR 215 Effective Business Communication ..... 3  
 MATH/SCI 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  
 QA 251 Elementary Statistical Analysis ..... 3  
 Elective† ..... 3

**Sophomore Fall** First work period (four months)  
**Sophomore Spring** ..... 15  
 CSCI 200 Data Mining ..... 3  
 BLAW 250 Legal & Ethical Environment of Business ..... 3  
 ENGL 102 Literature & Critical Writing ..... 3  
 QA 252 Intermediate Statistical Analysis ..... 3  
 MIS 290 Management Information Systems ..... 3

**Sophomore Summer** ..... 15  
 FIN 303 Financial Management ..... 3  
 MGT 310 Leadership ..... 3  
 MKT 300 Marketing Principles ..... 3  
 PHIL 352 Business Ethics\*\* ..... 3  
 Humanities Elective\*\* ..... 3

**Junior Fall** ..... 15  
 COMS 201/MIN 201 Social Media Informatics ..... 3  
 MGT 365 International Business ..... 3  
 MIS 370 Business Analytics ..... 3  
 MIS 430 ERP Systems ..... 3  
 OPM 352 Operations Management ..... 3

**Junior Spring and Summer** Second work period (eight months)  
**Senior Fall** ..... 15  
 OPM 360 Project Management ..... 3  
 MIS Elective or SAP Course ..... 3  
 Humanities Elective\*\* ..... 3  
 MIS/CSCI Elective or SAP\*\*\* ..... 3  
 Elective\*\* ..... 3

**Senior Spring** ..... 15  
 MGT 452 Management Policy & Strategy\*\* ..... 3  
 MIS 358 Database Management Systems ..... 3  
 MIS 363 Object-Oriented Design Development ..... 3  
 MIS 453 Business Informatics Integration **or**  
 MGT 451 Senior Project ..... 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.  
 \*\*\*Excluding CSCI 101 and CSCI 102  
 Note: Any student completing three SAP courses will earn the SAP Undergraduate Recognition Award upon graduation. See your advisor for more information.



<b>CURRICULUM—ECONOMICS CO-OP</b>	<b>Credits</b>
<b>Freshman Fall</b> .....	<b>15.5</b>
ENGL 101 Reading, Thinking, & Writing .....	3
MATH 117 Elementary Functions* .....	3
MGT 100 Understanding & Working in Organizations .....	3
2 Electives† .....	6
Physical Education Elective .....	0.5
<b>Freshman Spring</b> .....	<b>16.5</b>
ACCT 105 Financial Accounting .....	3
ANTH 105 Cultural Anthropology .....	3
EC 101 Principles of Macroeconomics** .....	3
PRWR 215 Effective Business Communication .....	3
MIS 180 Computing & Spreadsheets .....	1
Elective† .....	3
Physical Education Elective .....	0.5
<b>Freshman Summer</b> .....	<b>15</b>
ACCT 205 Managerial Accounting .....	3
EC 202 Principles of Microeconomics .....	3
MGT 210 Foundations of Management .....	3
QA 251 Elementary Statistical Analysis .....	3
Elective† .....	3
<b>Sophomore Fall</b> First work period (four months)	
<b>Sophomore Spring</b> .....	<b>15</b>
BLAW 250 Legal & Ethical Environment of Business .....	3
ENGL 102 Literature & Critical Writing .....	3
MIS 290 Management Information Systems .....	3
QA 252 Intermediate Statistical Analysis .....	3
Elective† .....	3
<b>Sophomore Summer</b> .....	<b>15</b>
FIN 303 Financial Management .....	3
MGT 310 Leadership .....	3
MKT 300 Marketing Principles .....	3
2 Electives† .....	6
<b>Junior Fall</b> .....	<b>15</b>
EC 312 Macroeconomic Theory .....	3
EC 408 International Economics or PHIL 352 Business Ethics .....	3
MGT 365 International Business .....	3
OPM 352 Operations Management .....	3
International SBA Elective .....	3
<b>Junior Spring and Summer</b> Second work period (eight months)	
<b>Senior Fall</b> .....	<b>15</b>
EC 408 International Economics or PHIL 352 Business Ethics .....	3
MGT 452 Management Policy & Strategy .....	3
2 EC Electives .....	6
EC 497 Internship in Economics .....	3
<b>Senior Spring</b> .....	<b>15</b>
EC 311 Microeconomic Theory .....	3
EC 401 Money & Financial Institutions .....	3
EC 451 Senior Project .....	3
2 Electives† .....	6
<b>TOTAL CREDITS</b>	<b>122</b>

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

\*\*EC 101 or EC 202 may be offered in the summer or spring.

†Economics majors must complete two humanities electives, one social science elective, three science/math electives, and three free electives.

<b>CURRICULUM—ECONOMICS/ FINANCIAL SERVICES CO-OP</b>	<b>Credits</b>
<b>Freshman Fall</b> .....	<b>16.5</b>
ENGL 101 Reading, Thinking, & Writing .....	3
MATH 117 Elementary Functions .....	3
MGT 100 Understanding & Working in Organizations .....	3
MIS 180 Computing & Spreadsheets* .....	1
2 Electives† .....	6
Physical Education Elective .....	0.5
<b>Freshman Spring</b> .....	<b>15.5</b>
ACCT 105 Financial Accounting .....	3
ANTH 105 Cultural Anthropology .....	3
EC 101 Principles of Macroeconomics** .....	3
PRWR 215 Effective Business Communication .....	3
Elective† .....	3
Physical Education Elective .....	0.5
<b>Freshman Summer</b> .....	<b>15</b>
ACCT 205 Managerial Accounting .....	3
EC 202 Principles of Microeconomics .....	3
MGT 210 Foundations of Management .....	3
QA 251 Elementary Statistical Analysis .....	3
Elective† .....	3
<b>Sophomore Fall</b> First work period (4 months)	
<b>Sophomore Spring</b> .....	<b>15</b>
EC 311 Microeconomic Theory .....	3
ENGL 102 Literature & Critical Writing .....	3
MGT 365 International Business .....	3
MIS 290 Management Information Systems .....	3
QA 252 Intermediate Statistical Analysis .....	3
<b>Sophomore Summer</b> .....	<b>15</b>
FIN 303 Financial Management .....	3
MGT 310 Leadership .....	3
MKT 300 Marketing Principles* .....	3
PHIL 352 Business Ethics .....	3
Elective† .....	3
<b>Junior Fall</b> .....	<b>16</b>
ACCT 405 Federal Income Tax .....	4
BLAW 250 Legal & Ethical Environment of Business .....	3
EC 312 Macroeconomic Theory .....	3
EC 408 International Economics .....	3
FIN 305 Investments .....	3
<b>Junior Spring and Summer</b> Second work period (8 months)	
<b>Senior Fall</b> .....	<b>15</b>
ACCT 408 Principles of Estate Planning .....	3
EC 497 Internship in Economics .....	3
OPM 352 Operations Management .....	3
2 Electives† .....	6
<b>Senior Spring</b> .....	<b>15</b>
ACCT 409 Pension & Retirement Planning .....	3
EC 401 Money & Financial Institutions .....	3
EC 453 Economic Seminar in Financial Services .....	3
FIN 320 Risk Management & Insurance Planning .....	3
MGT 452 Management Policy & Strategy .....	3
<b>TOTAL CREDITS</b>	<b>123</b>

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

\*\*EC 101 or EC 202 may be offered in the summer or spring.

†Economics/financial services majors must complete two humanities electives, one social science elective, three science/math electives, 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.

<b>CURRICULUM—FINANCE CO-OP</b>	<b>Credits</b>
<b>Freshman Fall</b> .....	<b>16.5</b>
ENGL 101 Reading, Thinking, & Writing .....	3
MATH 117 Elementary Functions* .....	3
MGT 100 Understanding & Working in Organizations .....	3
MIS 180 Computing & Spreadsheets .....	1
2 Electives† .....	6
Physical Education Elective .....	0.5
<b>Freshman Spring</b> .....	<b>15.5</b>
ACCT 105 Financial Accounting .....	3
ANTH 105 Cultural Anthropology .....	3
EC 101 Principles of Macroeconomics** .....	3
PRWR 215 Effective Business Communication .....	3
Elective† .....	3
Physical Education Elective .....	0.5
<b>Freshman Summer</b> .....	<b>15</b>
ACCT 205 Managerial Accounting .....	3
EC 202 Principles of Microeconomics** .....	3
MGT 210 Foundations of Management .....	3
QA 251 Elementary Statistical Analysis .....	3
Elective† .....	3
<b>Sophomore Fall</b> First work period (4 months)	
<b>Sophomore Spring</b> .....	<b>15</b>
BLAW 250 Legal & Ethical Environment of Business .....	3
ENGL 102 Literature & Critical Writing .....	3
MIS 290 Management Information Systems .....	3
QA 252 Intermediate Statistical Analysis .....	3
Elective† .....	3
<b>Sophomore Summer</b> .....	<b>15</b>
FIN 303 Financial Management .....	3
MGT 310 Leadership .....	3
MKT 300 Marketing Principles* .....	3
2 Electives† .....	6
<b>Junior Fall</b> .....	<b>15</b>
EC 312 Macroeconomic Theory .....	3
FIN 305 Investments .....	3
MGT 365 International Business .....	3
OPM 352 Operations Management .....	3
PHIL 352 Business Ethics .....	3
<b>Junior Spring and Summer</b> Second work period (8 months)	
<b>Senior Fall</b> .....	<b>15</b>
FIN 423 International Finance .....	3
MGT 452 Management Policy & Strategy .....	3
2 FIN Electives .....	6
FIN 497 Internship in Finance .....	3
<b>Senior Spring</b> .....	<b>15</b>
FIN 450 Financial Practices & Regulations .....	3
2 FIN Electives .....	6
2 Electives† .....	6
<b>TOTAL CREDITS</b>	<b>122</b>

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

\*\* EC 101 or EC 202 may be offered in the summer or spring.

† Finance majors must complete two humanities electives, one social science elective, three science/math electives, and three free electives.

<b>CURRICULUM—FINANCE/FINANCIAL PLANNING CO-OP</b>	<b>Credits</b>
<b>Freshman Fall</b> .....	<b>15.5</b>
ENGL 101 Reading, Thinking, & Writing .....	3
MATH 117 Elementary Functions .....	3
MGT 100 Understanding & Working in Organizations .....	3
2 Electives† .....	6
Physical Education Elective .....	0.5
<b>Freshman Spring</b> .....	<b>16.5</b>
ACCT 105 Financial Accounting .....	3
ANTH 105 Cultural Anthropology .....	3
EC 101 Principles of Macroeconomics** .....	3
PRWR 215 Effective Business Communication .....	3
MIS 180 Computing & Spreadsheets* .....	1
Elective† .....	3
Physical Education Elective .....	0.5
<b>Freshman Summer</b> .....	<b>15</b>
ACCT 205 Managerial Accounting .....	3
EC 202 Principles of Microeconomics** .....	3
MGT 210 Foundations of Management .....	3
QA 251 Elementary Statistical Analysis .....	3
Elective† .....	3
<b>Sophomore Fall</b> First work period (4 months)	
<b>Sophomore Spring</b> .....	<b>15</b>
BLAW 250 Legal & Ethical Environment of Business .....	3
ENGL 102 Literature & Critical Writing .....	3
MIS 290 Management Information Systems .....	3
QA 252 Intermediate Statistical Analysis .....	3
Elective† .....	3
<b>Sophomore Summer</b> .....	<b>15</b>
FIN 303 Financial Management .....	3
MGT 310 Leadership .....	3
MKT 300 Marketing Principles* .....	3
PHIL 352 Business Ethics .....	3
Elective† .....	3
<b>Junior Fall</b> .....	<b>16</b>
ACCT 405 Federal Income Tax .....	4
EC 312 Macroeconomic Theory .....	3
FIN 305 Investments .....	3
FIN 497 Internship in Finance .....	3
MGT 365 International Business .....	3
<b>Junior Spring and Summer</b> Second work period (8 months)	
<b>Senior Fall</b> .....	<b>15</b>
ACCT 408 Principles of Estate Planning .....	3
OPM 352 Operations Management .....	3
2 FIN Electives .....	6
Elective† .....	3
<b>Senior Spring</b> .....	<b>15</b>
ACCT 409 Pension & Retirement Planning .....	3
FIN 320 Risk Management & Insurance Planning .....	3
FIN 450 Financial Practices & Regulations .....	3
FIN 453 Financial Planning Seminar .....	3
MGT 452 Management Policy & Strategy .....	3
<b>TOTAL CREDITS</b>	<b>123</b>

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

\*\* EC 101 or EC 202 may be offered in the summer or spring.

† Finance/financial planning majors must complete two humanities electives, one social science elective, three science/math electives, and one free elective.

**CURRICULUM—INTERNAT'L BUSINESS CO-OP Credits**

**Freshman Fall** ..... 16.5  
 ANTH 105 Cultural Anthropology ..... 3  
 ENGL 101 Reading, Thinking, & Writing ..... 3  
 MATH 117 Elementary Functions\* ..... 3  
 MGT 100 Understanding & Working in Organizations ..... 3  
 Modern Language Elective ..... 3  
 Physical Education Elective ..... 0.5  
**Freshman Spring** ..... 15.5  
 ACCT 105 Financial Accounting ..... 3  
 EC 101 Principles of Macroeconomics\*\* ..... 3  
 MIS 180 Computing & Spreadsheets\*\* ..... 1  
 POLS 102 Foreign Government & Politics ..... 3  
 PRWR 215 Effective Business Communication ..... 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  
 QA 251 Elementary Statistical Analysis ..... 3  
 Elective† ..... 3  
**Sophomore Fall** First work period (4 months)  
**Sophomore Spring** ..... 15  
 ENGL 102 Literature & Critical Writing ..... 3  
 MGT 365 International Business ..... 3  
 MIS 290 MGT Information Systems ..... 3  
 POLS 222 American Foreign Policy ..... 3  
 QA 252 Intermediate Statistical Analysis ..... 3  
**Sophomore Summer** ..... 15  
 FIN 303 Financial Management ..... 3  
 MGT 310 Leadership ..... 3  
 MKT 300 Marketing Principles\*\* ..... 3  
 PHIL 352 Business Ethics ..... 3  
 Elective† ..... 3  
**Junior Fall** ..... 15  
 BLAW 250 Legal & Ethical Environment of Business ..... 3  
 FIN 423 International Finance ..... 3  
 OPM 352 Operations Management ..... 3  
 POLS 221 Introduction to International Relations ..... 3  
 Elective† ..... 3  
**Junior Spring and Summer** Second work period (8 months)  
**Senior Fall** ..... 15  
 EC 408 International Economics ..... 3  
 MGT 451 Management Seminar\*\* ..... 3  
 MHR 465 International Human Resource Mgt ..... 3  
 MGT Elective ..... 3  
 Elective† ..... 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.  
 \*\* EC 101 or EC 202 may be offered in the summer or spring.  
 †International business majors must complete three science/math electives and three free electives.

**CURRICULUM—MANAGEMENT CO-OP Credits**

**Freshman Fall** ..... 15.5  
 ENGL 101 Reading, Thinking, & Writing ..... 3  
 MATH 117 Elementary Functions\* ..... 3  
 MGT 100 Understanding & Working in Organizations ..... 3  
 2 Electives† ..... 6  
 Physical Education Elective ..... 0.5  
**Freshman Spring** ..... 16.5  
 ACCT 105 Financial Accounting ..... 3  
 ANTH 105 Cultural Anthropology ..... 3  
 EC 101 Principles of Macroeconomics\*\* ..... 3  
 PRWR 215 Effective Business Communication ..... 3  
 MIS 180 Computing and Spreadsheets\*\* ..... 1  
 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  
 QA 251 Elementary Statistical Analysis ..... 3  
 Elective† ..... 3  
**Sophomore Fall** First work period (4 months)  
**Sophomore Spring** ..... 15  
 ACCT 205 Managerial Accounting ..... 3  
 ENGL 102 Literature & Critical Writing ..... 3  
 MGT 365 International Business ..... 3  
 QA 252 Intermediate Statistical Analysis ..... 3  
 Elective† ..... 3  
**Sophomore Summer** ..... 15  
 FIN 303 Financial Management ..... 3  
 MGT 310 Leadership ..... 3  
 MKT 300 Marketing Principles\*\* ..... 3  
 PHIL 352 Business Ethics ..... 3  
 Elective† ..... 3  
**Junior Fall** ..... 15  
 BLAW 250 Legal & Ethical Environment of Business ..... 3  
 MHR 316 Introduction to Human Resource Management ..... 3  
 OPM 352 Operations Management ..... 3  
 MGT Elective ..... 3  
 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  
 2 Electives† ..... 6  
**Senior Spring** ..... 15  
 MGT 452 Management Policy & Strategy ..... 3  
 MGT Elective ..... 3  
 OPM 360 Project Management ..... 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, one social science elective, three science/math electives, and five free electives.

<b>CURRICULUM—MANAGEMENT: MHR, OPM CO-OP</b>	<b>Credits</b>
<b>Freshman Fall</b> .....	<b>15.5</b>
ENGL 101 Reading, Thinking, & Writing .....	3
MATH 117 Elementary Functions* .....	3
MGT 100 Understanding & Working in Organizations .....	3
2 Electives† .....	6
Physical Education Elective .....	0.5
<b>Freshman Spring</b> .....	<b>16.5</b>
ACCT 105 Financial Accounting .....	3
ANTH 105 Cultural Anthropology .....	3
EC 101 Principles of Macroeconomics** .....	3
PRWR 215 Effective Business Communication .....	3
MIS 180 Computing and Spreadsheets** .....	1
Elective† .....	3
Physical Education Elective .....	0.5
<b>Freshman Summer</b> .....	<b>15</b>
ACCT 205 Managerial Accounting .....	3
EC 202 Principles of Microeconomics .....	3
MGT 210 Foundations of Management .....	3
QA 251 Elementary Statistical Analysis .....	3
Elective† .....	3
<b>Sophomore Fall</b> First work period (4 months)	
<b>Sophomore Spring</b> .....	<b>15</b>
ENGL 102 Literature & Critical Writing .....	3
MIS 290 Mgt Information Systems .....	3
OPM 352 Operations Management .....	3
QA 252 Intermediate Statistical Analysis .....	3
Elective† .....	3
<b>Sophomore Summer</b> .....	<b>15</b>
FIN 303 Financial Management .....	3
MGT 310 Leadership .....	3
MKT 300 Marketing Principles** .....	3
PHIL 352 Business Ethics .....	3
Elective† .....	3
<b>Junior Fall</b> .....	<b>15</b>
BLAW 250 Legal & Ethical Environment of Business .....	3
MGT 365 International Business .....	3
2 MHR/MKT/OPM Electives*** .....	6
Elective† .....	3
<b>Junior Spring and Summer</b> Second work period (8 months)	
<b>Senior Fall</b> .....	<b>15</b>
MGT 451 Management Seminar .....	3
OPM 445 Management of Tech., Prod., & Change** .....	3
MHR/MKT/OPM Elective*** .....	3
2 Electives† .....	6
<b>Senior Spring</b> .....	<b>15</b>
MGT 452 Management Policy & Strategy .....	3
MHR/MKT/OPM Elective*** .....	3
International SBA Elective .....	3
2 Electives† .....	6
<b>TOTAL CREDITS</b> .....	<b>122</b>

\*Qualified students are urged to substitute MATH 141, 142.  
 \*\*Course may be taken in either the fall or spring semester.  
 \*\*\*If OPM student, one elective must be OPM 460, which is offered alternate spring semesters.  
 †Management majors must complete two humanities electives, one social science elective, three science/math electives, and five free electives.

<b>CURRICULUM—MARKETING CO-OP</b>	<b>CREDITS</b>
<b>Freshman Fall</b> .....	<b>15.5</b>
ENGL 101 Reading, Thinking, & Writing .....	3
MATH 117 Elementary Functions .....	3
MGT 100 Understanding & Working in Organizations .....	3
2 Electives* .....	6
Physical Education Elective .....	0.5
<b>Freshman Spring</b> .....	<b>16.5</b>
ACCT 105 Financial Accounting .....	3
ANTH 105 Cultural Anthropology .....	3
EC 101 Principles of Macroeconomics .....	3
MIS 180 Computing & Spreadsheets .....	1
PRWR 215 Effective Communication .....	3
1 Elective* .....	3
Physical Education Elective .....	0.5
<b>Freshman Summer</b> .....	<b>15</b>
ACCT 205 Managerial Accounting .....	3
EC 202 Principles of Microeconomics .....	3
MGT 210 Foundations of Management .....	3
QA 251 Elementary Statistical Analysis .....	3
Elective* .....	3
<b>Sophomore Fall</b> First work period (4 months)	
<b>Sophomore Spring</b> .....	<b>15</b>
BLAW 250 Legal & Ethical Environment of Business .....	3
ENGL 102 Literature & Critical Writing .....	3
MIS 290 Management Information Systems .....	3
QA 252 Intermediate Statistical Analysis .....	3
Elective* .....	3
<b>Sophomore Summer</b> .....	<b>15</b>
FIN 303 Financial Management .....	3
MGT 310 Leadership .....	3
MGT 365 International Business .....	3
MKT 300 Marketing .....	3
Elective* .....	3
<b>Junior Fall</b> .....	<b>15</b>
MKT 406 Marketing Research .....	3
Marketing Elective .....	3
OPM 352 Operations Management .....	3
PHIL 352 Business Ethics .....	3
1 Elective* .....	3
<b>Junior Spring and Summer</b> Second work period (8 months)	
<b>Junior Spring</b> .....	<b>15</b>
FIN 303 Financial Management .....	3
PHIL 352 Business Ethics .....	3
1 Elective* .....	3
<b>Senior Fall</b> .....	<b>15</b>
MGT 451 Senior Project .....	3
2 Marketing Electives .....	6
2 Electives* .....	6
<b>Senior Spring</b> .....	<b>15</b>
MGT 452 Management Policy & Strategy .....	3
MKT 410 International Marketing .....	3
OPM 445 Mgmt of Technology, Productivity, & Change .....	3
1 Marketing Elective .....	3
2 Electives** .....	6
<b>TOTAL CREDITS</b> .....	<b>122</b>

\*Marketing majors must complete two humanities, three science/mathematics electives, and four free electives (PSY 105 recommended). Marketing majors are also required to complete PSY 203, COMS 201, COMS 275, COMS 280, COMS 375 or COMS 380 as a social science elective.

## BUSINESS MINORS FOR MAJORS OUTSIDE OF SBA

Students who are majoring outside the School of Business Administration 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 101 and 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 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 105 Financial Accounting	3
ACCT 205 Managerial Accounting (sophomore standing)	3
EC 101 Macroeconomics <b>or</b> 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 308 Intermediate Accounting (4 credits)	
ACCT 314 Advanced Managerial Accounting	
ACCT 400 Taxation for the Business Manager <b>or</b> ACCT 405 Federal Income Taxation (4 credits)	
ACCT 417 Internal Auditing	
BUS 320 Financial Literacy	

*Other 300- or 400-level accounting courses may be selected if prerequisites are met.*

**TOTAL CREDITS** **21–23**

### MINOR IN TAXATION

Taxation is a dynamic field with numerous opportunities for students who are not business majors. This minor provides students with in-depth knowledge and research skills in the specialty area of taxation. Students interested in working for a government agency such as the IRS and/or planning on attending law school are encouraged to obtain advanced coursework in tax law.

#### REQUIREMENTS: MINOR IN TAXATION Credits

*Prerequisites are in parentheses.*

##### Required SBA Courses

ACCT 105 Financial Accounting (sophomore standing)	3
ACCT 205 Managerial Accounting (sophomore standing)	3
EC 101 Macroeconomics <b>or</b> EC 202 Microeconomics	3
ACCT 405 Federal Taxation (ACCT 105 and ACCT 205**)	3

##### Elective Courses

Any two of the following	6
ACCT 400 Taxation for Business Manager <b>or</b> ACCT 407 Corporate Federal Income Tax	
ACCT 408 Principles of Estate Planning	
ACCT 409 Pensions and Retirement	

**TOTAL CREDITS** **18**

*\*Non-SBA students who complete FIN 303 in addition to all of the above requirements will also meet the requirements for an accounting minor. However, students can only be awarded one minor (accounting or taxation) based upon what is submitted when the minor is declared.*

*\*\* Although ACCT 405 is not a prerequisite for any of the undergraduate tax courses, students are highly recommended to complete ACCT 405 first.*

### MINOR IN GENERAL BUSINESS

#### REQUIREMENTS: BUSINESS MINOR Credits

*Prerequisites are in parentheses.*

EC 101/202 Principles of Macro/Microeconomics	6
MATH 117 Elementary Functions, or appropriate equivalent	3

##### Eight Required SBA Courses

ACCT 105–205 Financial/Managerial Accounting	6
QA 251 Elementary Statistics*	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, PSY 385, ALLH 390E, or ENGR 315 will waive QA 251.*

*Note: Students who complete the prescribed curriculum will have “Business Minor” noted on their transcript.*

**MINOR IN ECONOMICS**

The economics minor is designed for those non-business 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.

<b>REQUIREMENTS: ECONOMICS MINOR</b>	<b>Credits</b>
EC 101/202 Principles of Macro/Microeconomics . . . . .	6
MATH 117 Elementary Functions, or appropriate equivalent . . .	3
Four 300-level and above economics electives . . . . .	12
<b>TOTAL CREDITS</b>	<b>21</b>

**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.

<b>REQUIREMENTS: FINANCE MINOR</b>	<b>Credits</b>
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*Prerequisites are in parentheses.*

**Required SBA Courses**

ACCT 105 Financial Accounting . . . . .	3
ACCT 205 Managerial Accounting . . . . .	3
FIN 303 Financial Management (ACCT 205, junior standing) . . . .	3

**Elective Courses**

Choose one course: . . . . .	3
EC 101 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)	

<b>TOTAL CREDITS</b>	<b>21</b>
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*\*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.

<b>REQUIREMENTS: HUMAN RESOURCE MANAGEMENT MINOR</b>	<b>Credits</b>
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*Prerequisites are in parentheses.*

**Required SBA Courses**

MGT 100 Understanding & Working in Organizations . . . . .	3
MGT 210 Foundations of Management . . . . .	3
MHR 316 Intro. to Human Resource Mgt. (MGT 210) . . . . .	3
MGT 310 Leadership (MGT 100, MGT 210) . . . . .	3

**Elective Courses**

Choose any two courses: . . . . .	6
EC 315 Women, Men, & Work (EC 202)	
MHR 325 Managing Diversity in the Workplace (MGT 210)	
MHR 465 International Human Resource Mgt. (MGT 210)	

<b>TOTAL CREDITS</b>	<b>18</b>
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### MINOR IN MANAGEMENT

A minor in management gives students the ability to understand, deal with, and manage people, processes, and projects. Skills in these areas are critical for job success and enable students to advance into management ranks in their chosen fields. Management competencies are in great demand by employers, and students who develop them will be well positioned to perform effectively in their jobs and advance their careers.

#### REQUIREMENTS: MANAGEMENT MINOR Credits

*Prerequisites are in parentheses.*

##### Required SBA Courses

MGT 100 Understanding & Working in Organizations	3
MGT 210 Foundations of Management	3
MHR 316 Human Resources Management (MGT 210)	3

##### Elective Courses

Choose two courses:	6
MGT 310 Leadership (MGT 100, MGT 210)	
MGT 335 Sustainability, Innovation, & Entrepreneurship	
MHR 325 Managing Diversity in the Workplace (MGT 210)	
MHR 465 International Human Resource Management (MGT 210, MGT 365)	
OPM 360 Project Management (MIS 290, ACCT 205, MGT 210)	

**TOTAL CREDITS 15**

### MINOR IN BUSINESS ANALYTICS

Business Analytics 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 Business Analytics 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 105 Financial Accounting	3
ACCT 205 Managerial Accounting (ACCT 105)	3
MIS 180 Computing & Spreadsheets	1
MIS 290 Management Information Systems (MIS 180)	3
MIS 358 Database Management Systems (MIS 290)	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 363 Object-Oriented Design & Develop. (MIS 290)	
MIS 370 Business Analytics	
OPM 360 Project Management	
MIS 430 ERP Systems & Workflow Management (MIS 290)	

**TOTAL CREDITS 22**

*\*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
MGT 100 Understanding & Working in Organizations	3
MKT 300 Marketing Principles (EC 202)	3
PRWR 215 Effective Business Communication or QA 252 Intermediate Statistical Analysis (QA 251*, MIS 180)	3

##### Elective Courses

Choose any three of the following courses:	9
MKT 320 Event Planning and Sport Marketing (MKT 300)	
MKT 402 Marketing Management (MKT 300)	
MKT 403 Professional Personal Selling (MKT 300)	
MKT 405 Sales Management (QA 252, MKT 300)	
MKT 406 Marketing Research (QA 252, MKT 300)	
MKT 409 Customer Relationship Management (MKT 300)	
MKT 410 International Marketing (MKT 300)	
MKT 412 Advertising (MKT 300)	

**TOTAL CREDITS 21**

*\*PSY 381, PSY 385, ALLH 390E, or ENGR 315 may substitute for QA 251.*

### 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
MIS 180 Computing & Spreadsheets	1
OPM 352 Operations Management (MIS 180, junior standing)	3
OPM 460 Supply Chain Mgmt. (OPM 352)*	3
QA 251 Elementary Statistics (MATH 117)	3
MIS 290 ??? (MIS 180)	3

##### Elective Courses

Choose two courses:	6
MIS 370 Business Analytics (MIS 290, QA 251, QA 252)	
MIS 430 ERP Systems & Workflow Management* (MIS 290)	
OPM 360 Project Management (MGT 210)	
OPM 445 Mgmt. of Tech., Prod., & Change (OPM 352)	

**TOTAL CREDITS 22**

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

### 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 202 Principles of Microeconomics	3
MGT 210 Foundations of Management	3
MKT 300 Marketing Principles (EC 202, junior standing)	3
SMGT 300 Sport Mgmt. & Admin. (MGT 210)	3

#### Elective Courses

Choose any two of the following courses:	6
ACCT 401 Accounting & Taxation Implications in the Sports Industry (ACCT 105, 205)	
MKT 320 Event Planning & Sport Marketing (MKT 300)	
SMGT 340 Sport Sales & Marketing (MKT 300)	
SMGT 410 Economics of Sports (EC 202)	
SMGT 415 The Athlete & the Fan (MGT 210)	
SMGT 420 Venue Management (MKT 300)	

**TOTAL CREDITS** **21**

### MINOR IN SUSTAINABILITY MANAGEMENT

Sustainable development meets the needs of the present without compromising the ability of future generations to meet their own needs. Students interested in managing or knowing more about 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 to minor in sustainability management.

#### REQUIREMENTS: SUSTAINABILITY

#### **MANAGEMENT MINOR** **Credits**

*Prerequisites are in parentheses.*

BLAW 250 Legal & Ethical Environment of Business	3
CHEM 120 Sustainable Chemistry	3
EC 101 Principles of Macroeconomics	3
EC 202 Principles of Microeconomics	3
ENVR 172 Principles of Sustainability Science	3
MGT 210 Principles of Management (sophomore standing)	3
MGT 335 Sustainability, Innovation, & Entrepreneurship	3

**TOTAL CREDITS** **21**

*Students are encouraged to take ENVR 100 Introduction to Environmental Science or ENVR 171 Principles of Environmental Science. Students are especially encouraged to take ENVR 180 Sustainable Development: Service Learning in Tropical America.*

### PRE-MBA UNDERGRADUATE CERTIFICATE Credits

*Prerequisites are in parentheses.*

#### Required SBA Courses

ACCT 105 Financial Accounting	3
ACCT 205 Managerial Accounting (ACCT 105)	3
EC 101 Principles of Macroeconomics	3
EC 202 Principles of Microeconomics (Soph. standing)	3
MGT 210 Foundations of Management (Soph. Standing)	3
FIN 303 Financial Management (ACCT 205, Jr. Standing)	3

#### Choose One of the Following Options:

##### Option 1

MIS 180 Computing & Spreadsheets*	1
QA 251 Elementary Statistics** (MATH 117, co-req. MIS 180)	3
QA 252 Intermediate Statistics (QA 251, MIS 180)	3

##### Option 2

BUS 518 Applied Quantitative Analysis (MATH 131 or MATH 141)	3
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**TOTAL CREDITS** **21/25**

*\*Students may take a challenge exam to meet this requirement. There is a fee for the challenge exam.*

*\*\*ENGR 315, PSY 381, or PSY 385 may substitute for QA 251.*



# TOURISM AND HOSPITALITY PROGRAMS

Additionally accredited by the Accreditation Commission for Programs in Hospitality Administration (ACPHA)

## MISSION

The mission of the Center for Experience Management in Tourism and Hospitality is to develop civically engaged leaders for the global hospitality industry through an emphasis on experiential learning.

Success in the tourism industry requires substantial professional, business, and interpersonal skills. The curriculum is a good balance of professional, liberal arts, and business courses together with “hands-on” experience, which requires two summer field experiences and a cooperative education semester in the senior year.

The curriculum is designed to expose students to the broad career opportunities in the tourism industry. As students’ progress through the curriculum, they are free to use their electives to explore various sectors in the industry.

Graduates can enter the tourism and hospitality industry as entry-level managers in traditional sectors such as hotels and resorts; restaurants and food and beverage operations; events; clubs; casinos and gaming; destinations, attractions, theme parks, managed services in education (college/university, K–12), sports, entertainment, and business and government. Unique and developing sectors such as hospitals, retirement communities, and continuing care and assisted living facilities are also possible.

## LEARNING OUTCOMES

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

- Demonstrate a commitment to managing the service experience specific to the context of the tourism industry.
- Integrate business concepts in tourism management.
- Apply the skills relevant to the operational areas of tourism management.
- Communicate effectively.
- Create a plan for personal leadership development.

## CORE COURSES

FRS 101 Freshman Seminar  
 HM 101\* Introduction to the Tourism & Hospitality Industry  
 HM 102 Introduction to Lodging Management  
 HM 107 Introduction to Food Preparation  
 HM 204 Human Resource Mgmt in the Tourism Industry  
 HM 207 Intro to Food & Service Management  
 HM 210 Managing the Service Experience  
 HM 304 Accounting & Financial Mgmt in Tourism Industry  
 HM 306\* Marketing in the Tourism Industry  
 HM 310 Applied Technology in the Tourism Industry  
 HM 315 Data Analytics in the Tourism Industry  
 HM 352 Facilities Management in the Tourism Industry  
 HM 368 Principles of Tourism OR HM 356 International Tourism Management

HM 400\*\* -401-402 Leadership Development Seminars  
 HM 403 Law in the Tourism Industry  
 HM 407 Advanced Food, Beverage, & Service Management  
 HM 497\*\* Capstone

\* Service-learning course.

\*\* Writing-enriched course.

## CURRICULUM—HOSPITALITY MANAGEMENT<sup>†</sup> Credits

<b>Freshman Fall</b> .....	<b>16.5</b>
ENGL 101 Reading, Thinking, & Writing .....	3
FRS 101 Freshman Seminar .....	1
HM 101 Introduction to the Tourism & Hospitality Industry ...	3
MATH 117 Elementary Functions .....	3
Modern Language I .....	3
Introductory Social Science .....	3
Physical Education Elective .....	0.5
<b>Freshman Spring</b> .....	<b>16.5</b>
EC 101 Principles of Macroeconomics .....	3
ENGL 102 Literature & Critical Writing .....	3
HM 107 Introduction to Food Preparation .....	4
SCI 107 Food Science I .....	3
Modern Language II .....	3
Physical Education Elective .....	0.5
<b>Sophomore Fall</b> .....	<b>16</b>
ACCT 105 Basic Financial Accounting .....	3
COMS 290 Interpersonal Communication .....	3
HM 102 Introduction to Lodging Management .....	3
SCI 209/210 Food Science and Laboratory II .....	4
Humanities Elective .....	3
<b>Sophomore Spring</b> .....	<b>16</b>
ACCT 205 Basic Management Accounting .....	3
HM 204 Human Resource Mgmt in the Tourism Industry .....	3
HM 210 Managing the Service Experience .....	3
MIS 180 Computing & Spreadsheets .....	1
HM/Tourism Elective .....	3
Social Science Elective .....	3
<b>Junior Fall</b> .....	<b>16</b>
HM 207 Intro to Food & Service Management .....	4
HM 306 Marketing in the Tourism Industry .....	3
HM 310 Applied Technology in the Tourism Industry .....	3
HM 315 Data Analytics in the Tourism Industry .....	3
HM 352 Facilities Management in the Tourism Industry .....	3
<b>Junior Spring</b> .....	<b>16</b>
HM 304 Accounting & Financial Mgmt in Tourism Industry ...	3
HM 368 Principles of Tourism <i>or</i> HM 356 International Tourism Management .....	3
HM 403 Law in the Tourism Industry .....	3
HM 407 Restaurant Operations Management .....	4
HM/Tourism Elective .....	3
<b>Senior Fall</b> .....	<b>15</b>
HM 400 Co-Op Leadership Development Seminar .....	6
HM 401 Co-Op Leadership Skills Assessment .....	3
HM 402 Co-Op Applied Leadership Development .....	6
<b>Senior Spring</b> .....	<b>15</b>
HM 497 Capstone .....	3
HM/Tourism Elective .....	3
Science Elective .....	3
Free Electives .....	6
<b>TOTAL CREDITS</b> .....	<b>127</b>

\*Recommend BIOL 115 Human Nutrition

<sup>†</sup>Two summer field experiences—HM 100 and HM 200 (400 hours minimum each)—are also required at an approved location in the tourism industry. A work-book must be completed and submitted to the advisor for completion of the field experience requirement.

<b>ELECTIVE COURSESS</b>	<b>Credits</b>
Club Management .....	3
Managed Services .....	3
Beverage Management .....	3
Labor Relations in the Tourism Industry .....	3
Introduction to Events Management .....	3
Special Events Management .....	3
Meetings, Exhibitions, and Convention Management .....	3
Advanced Lodging Management .....	3
Independent Research .....	1–3

## **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 tourism 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. 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/LEADERSHIP DEVELOPMENT SEMINARS**

### **REQUIREMENTS**

Enrollment in a cooperative education/leadership development semester is based upon fulfillment of the following prerequisites:

- Two 400-hour field experiences.
- Minimum of 85 credits.
- Minimum 2.0 cumulative grade-point average.
- Successful completion of HM 204 and 207.
- Approval of the co-op instructor.

### **PROCEDURES**

Students must take the leadership seminar in the 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 instructor for placement advice.

## **PROGRAM STRUCTURE**

Co-op is mandatory for all HM majors and is considered the hallmark of the curriculum. The program consists of three distinct courses—HM 400, 401, and 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 tourism position for 16 weeks during the semester (average 37.5 hours per week). Students attend a six-hour leadership seminar one day per week for discussion of individual work-related issues, as well as relevant tourism management and leadership topics.

## **AVAILABLE MINORS**

Students may attain a minor in accounting, economics, finance, human resources, international business, management, marketing, MIS, modern language, operations management, sports management, and events management. Students should meet with their faculty advisor and the chairperson of the department of their minor for guidance.

## **MINOR IN EVENTS MANAGEMENT**

Events management has become a highlighted area of interest for many students. The minor in events management is intended to encourage students to explore the various areas of events management, including social and corporate events, meeting planning, association planning, destination management, and convention management. Courses in tourism and marketing are also required. This 21-credit minor is open to students of all majors. Any interested student should consult with an academic advisor.

<b>REQUIREMENTS</b>	<b>Credits</b>
HM 205 Intro to Event Management .....	3
HM 305 Meetings, Expositions, Events, & Conventions .....	3
HM 306 Marketing in the Tourism Industry <i>or</i>	
MKT 300 Principles of Marketing .....	3
HM 363 Special Event Management .....	3
HM 368 Principles of Tourism <i>or</i>	
HM 356 International Tourism Management .....	3
Choose one of following: .....	3
COMS 180 Public Speaking & Presentation	
COMS 201 Social Media Informatics	
COMS 275 Introduction to Public Relations	
COMS 290 Interpersonal Communications	
Choose one elective (in consultation with advisor): .....	3
HM 351 Labor Relations in the Tourism Industry	
HM 450 Beverage Management	
MKT 320 Event Planning & Sport Marketing	

**TOTAL CREDITS** **21**

## **4+1 BS AND MBA**

Students have the opportunity to earn both a bachelor of science in hospitality management and an MBA from the School of Business Administration in an accelerated 5-year program. Interested students should consult with their academic advisor.

# School of Engineering

The School of Engineering provides programs that combine theory and practice to educate men and women who will contribute to the economic vitality of their communities and the world and will continue learning to advance 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, mechanical, and robotics engineering are offered. Freshmen may generally defer their decisions on a major until the beginning of their second semester.

Five engineering programs offered by the School of Engineering are accredited by the Engineering Accreditation Commission of ABET ([www.abet.org](http://www.abet.org)). The newly launched robotics engineering program will seek accreditation at the earliest opportunity allowed under the policy of ABET.

## 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 REQUIREMENTS

In addition to the university requirements, incoming engineering freshmen are expected to demonstrate proficiency in mathematics and critical reading through standardized tests: SAT or ACT.

## INTERNATIONAL APPLICANTS

In addition to meeting the university's requirements for international students, applicants must complete the Mathematics Assessment Test administered through Widener University and demonstrate proficiency in the English language.

## ADMISSION WITH ADVANCED STANDING

Incoming freshmen should refer to "Advanced Placement Credit" for details on credit granted through the College Entrance Examination Board's (CEEB) Advanced Placement program.

## ADMISSION FOR TRANSFER STUDENTS

In addition to the university requirements, transfer students from four-year or two-year accredited institutions must have, at the time of their matriculation at Widener, a minimum cumulative GPA of 2.5 out of 4.0 and must have completed at least one calculus course and one science course in chemistry, physics, or biology that is approved for transfer credit toward the graduation requirements in one of the engineering curricula.

The School of Engineering has articulation agreements with select 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.

## ACADEMIC REQUIREMENTS

The requirements for the degrees of bachelor of science in biomedical engineering, chemical engineering, civil engineering, electrical engineering, and mechanical engineering are shown under the various curricula on subsequent pages.

Engineering students must satisfy the university distribution requirement of 12 credit hours in each of the two areas of humanities and social science. In addition, 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 must

satisfy the requirements of the Undergraduate Writing Program.

Students interested in pursuing a dual degree in biomedical/chemical engineering, biomedical/electrical engineering, biomedical/mechanical engineering, biomedical/robotics engineering, electrical/robotics engineering, mechanical/robotics engineering, or electrical/mechanical engineering should contact the dean's office or department chair. Dual degrees are also available in chemical engineering/chemistry, electrical engineering/physics, mechanical engineering/physics, and robotics engineering/computer science. Students interested in pursuing a dual degree should contact the departments offering the dual degree and their academic advisor.

The requirements for a minor in engineering are also shown on subsequent pages. Minors can be arranged in many areas, including biomedical engineering, chemical engineering, electrical engineering, environmental engineering, mechanical engineering, robotics engineering, biology, business, chemistry, computer science, leadership, management, marketing, mathematics, and physics. Students interested in pursuing a minor should consult with their academic advisor.

## ACADEMIC PROFICIENCY AND GRADUATION REQUIREMENT

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 session to ensure students are making satisfactory academic progress. The *Criteria for Satisfactory Academic Progress in Undergraduate Majors* are maintained in the engineering departments and the dean's office. The criteria are designed to guide students whose academic performance is unsatisfactory toward successful completion of their degree requirements.

In addition to satisfying university requirements, engineering students must demonstrate academic proficiency in their major by maintaining a technical GPA of 2.0 or better throughout their course of study. The technical GPA is the cumulative GPA applied to all engineering, mathematics, and science courses attempted at Widener University. Failure to meet the required academic proficiency may result in a warning, academic probation, or dismissal from the School of Engineering. It is the responsibility of the student to satisfy the university and the School of Engineering academic requirements for graduation as outlined in this catalog.

## ACADEMIC INTEGRITY POLICY OF THE SCHOOL OF ENGINEERING

Engineering students are expected to adhere to the highest standards of academic integrity, both inside and outside the classroom. Violations of the Academic Integrity Policies of the school or the university constitute academic fraud and are subject to review and possible penalties as listed below. Refer to the university Academic Integrity Policy for additional information.

## ELECTRONIC COMMUNICATIONS

Unless otherwise stated in the course syllabus, the use of electronic communication devices during exams, tests, quizzes, and other times as determined by the instructor is prohibited. Electronic communication devices include, but are not limited to, digital watches, cell phones, earphones, headsets, Internet, e-mail, and unauthorized calculators. Authorized calculators are those listed under the current Calculator Policy of the National Council of Examiners for Engineering and Surveying (<http://ncees.org/exams/calculator-policy>). Unauthorized electronic communication devices shall be powered off and placed in a secure location not accessible to the student during exams,

tests, quizzes, and other times as determined by the instructor. The use or attempted use of unauthorized electronic communication devices constitutes academic fraud.

#### **POSSIBLE PENALTIES FOR VIOLATION OF THE POLICY AT THE FACULTY/SCHOOL LEVEL:**

Penalties available to faculty include, but are not limited to:

- Formal warning.
- Reduction in grade for the assignment.
- Failing grade for the assignment.
- Reduction in the grade for the course.
- Failing grade (F) in the course. The grade can be replaced if the student successfully completes the course in a subsequent semester and files a Repetition of Course form.
- Failing grade (XF) in the course. The grade will appear on the transcript and be defined as failure due to academic fraud. The grade cannot be replaced by repeating the course and shall remain part of the GPA calculation.

Serious or multiple violations of the policy may result in additional penalties including possible dismissal from the School of Engineering.

#### **RESOLUTION OF ACADEMIC INTEGRITY CASES AT THE FACULTY LEVEL**

##### **Violations of Academic Integrity Involving Instructional or Research-Related Work**

The faculty member of record, or designee, who becomes aware of an incidence of academic fraud by engineering students in instructional or research-related work will:

1. Collect and preserve any evidence of the suspected fraud.
2. Immediately bring it to the attention of the suspected student.
3. Contact the assistant dean for undergraduate affairs for consultation and templates.
4. Promptly notify the student in writing via the student's campus e-mail address of each incidence of academic fraud and provide the student the opportunity to respond in writing to the charge of academic fraud within five business days of the date of the notification.
5. Send a copy of the notification to the assistant dean for undergraduate affairs and the chairman of the department in which the student is enrolled.

If the student fails to respond in writing to the charge of academic fraud within five business days from the date of the notification, the student forfeits any right to appeal.

If the faculty member and the student discuss the charge of academic fraud and agree on a resolution within five business days of the student's response to the faculty member, the faculty member will inform the chairman of the department in which the student is enrolled and the assistant dean for undergraduate affairs by e-mail about the outcome of the discussion, including any penalty, and will send a copy to the student via campus e-mail.

If no resolution is reached within five business days of the student's response to the faculty member, the faculty member will inform the student via campus e-mail of the penalty for academic fraud and the right to appeal to the Executive Committee of the school within five business days via campus e-mail addressed to the assistant dean for undergraduate affairs.

##### **Other Violations of Academic Integrity**

The faculty member or staff who becomes aware of other incidences of academic fraud by engineering students will:

1. Collect and preserve any evidence of the suspected fraud.
2. Promptly report each incidence of academic fraud in writing to the assistant dean for undergraduate affairs and the chairman of the department in which the student is enrolled.

The assistant dean for undergraduate affairs will:

1. Make appropriate arrangements for disposition and penalty in accordance with this policy and will inform the student via the student's campus e-mail address about the right to appeal in writing to the Executive Committee of the school within five business days via e-mail addressed to the assistant dean.
2. Send a copy of the notification to the chairman of the department in which the student is enrolled.

If the student fails to respond in writing to the charge of academic fraud or the penalty within five business days from the date of the notification, the student forfeits any right to appeal the decision.

#### **RESOLUTION OF ACADEMIC INTEGRITY CASES AT THE SCHOOL LEVEL**

The Executive Committee of the School of Engineering will review appeals and will inform the student of its decision. The Executive Committee will also review all reports of academic fraud within the school. Serious or repeated violations of the policy may result in additional penalties including possible dismissal from the school. The Executive Committee will inform the student of the right to appeal a decision to dismiss from the school to the Academic Review Board of the university.

It is Widener University policy that appeals to the Academic Review Board must be received by the associate provost for undergraduate academic affairs no more than 10 business days after the date of the notification. Appeals must be in writing and include the student's request for appeal, together with the concise statement of the student's grounds for the appeal. A description of the Academic Review Board and its duties is found in the "Academic Regulations" section of this catalog.

The office of the assistant dean for undergraduate affairs will maintain records of all academic integrity cases. The assistant dean will send a report to the associate provost for undergraduate academic affairs describing each incidence of academic fraud with a copy to the faculty member or staff and the chairman of the department in which the student is enrolled.

#### **SENIOR PROJECT**

This capstone 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, planning, 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); the cooperative education cycle (fall, spring, and summer), which includes intervals of paid work experience; an accelerated bachelor's/master's program; and dual degrees. The Engineering Honors program is available to qualified students pursuing any of the program options.

#### **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. Freshman students normally enter the program in the fall; however, students may matriculate in fall, spring, or summer, depending on their standing.

## COOPERATIVE EDUCATION PROGRAM

In addition to the traditional engineering program, students can 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 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 enables Widener graduates to start their professional careers one year earlier than a typical five-year co-op program and earn an additional one year of salary.
- The student's work experience is related as closely as possible to the course of study and personal interests.
- There is one four-month work period (Co-op I: September–December) and one eight-month work period (Co-op II: January–August). 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. Those students interested in only the eight-month work experience after the third year of their program or other variations for co-op employment should contact the Co-op Office for details.

### COOPERATIVE EDUCATION SCHEDULE

	Fall	Spring	Summer
<b>Freshman Year</b>	School	School	School
<b>Sophomore Year</b>	<i>Co-op I</i>	School	School
<b>Junior Year</b>	School	<i>Co-op II</i>	<i>Co-op II</i>
<b>Senior Year</b>	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 interested in the co-op program should apply as early as possible with the director of cooperative education.

## INTERNSHIPS

Students who do not qualify or do not elect to participate in the Cooperative Education Program should pursue summer internship opportunities. For information, contact the dean's office or one of the engineering departments.

## ACCELERATED BACHELOR'S/MASTER'S PROGRAM

The bachelor of science/master of science in engineering program is an accelerated program that enables engineering students to complete both their bachelor of science and master of science in engineering degrees in just four to five years. The School of Engineering offers the master of science in engineering degree with specializations in biomedical, chemical, civil, electrical, and mechanical engineering, and engineering management. The school also offers the master of science in engineering/master of business administration dual degree with the School of Business Administration. Certificate programs 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 for six credit hours to

apply to both the undergraduate and graduate degree requirements. Generous graduate scholarships are available to students who excel in their undergraduate major. For more information, contact the graduate program office or refer to the Graduate Engineering Catalog.

## PRE-MBA CERTIFICATE

The pre-MBA certificate provides students with a solid exposure to foundational business topics, such as accounting, economics, finance and management, and can be integrated into the four-year engineering curriculum. It also qualifies interested students to apply for an MBA at Widener following their graduation which can be earned in one year. Interested students should contact their academic advisor and the School of Business Administration early in their freshman year.

## THE ENGINEERING HONORS PROGRAM

The Engineering Honors Program (EHP) offers an exciting opportunity for academically talented students to enrich their engineering education with advanced engineering honors courses, honors seminar, collaboration with faculty on research, civic engagement, and professional and leadership development. It is an elite program that is intended for highly motivated students who are interested in expanding their horizons and considering the “bigger picture.” Participants experience an intellectual and challenging classroom environment. Cocurricular programming focuses on creativity and innovation. Characteristics of successful leaders in the global engineering community are emphasized throughout the curriculum. The EHP is integrated into the engineering curriculum and offers participants the opportunity to complete their program of study in four years with a Certificate of Honors in Engineering. The EHP is administered by the EHP coordinator and the dean's office.

## ELIGIBILITY

Engineering freshmen who have completed at least 12 credits in their first semester at Widener University with a cumulative GPA and tech GPA of 3.25 or higher are eligible for the Engineering Honors Program. In addition, freshmen must earn a grade “B-” or better in Math 141, Math 142, or higher; one prescribed science lecture; and one engineering course during their first semester at Widener University. Transfer students who have a GPA of 3.5 or better and who earned approved transferrable credit in MATH 141, CHEM 145, and PHYS 161 with a grade of “B” or better at matriculation are also eligible.

## PROGRAM REQUIREMENTS

Honors students must complete the following requirements to earn a certificate of honors in engineering: ENGR 107 Engineering Honors Seminar I; ENGR 207 Engineering Honors Seminar II, ENGR 213 Statics (honors); one junior-level course in the major (honors); one graduate course in the major (as a senior technical elective); completion of the Oskin Leadership Institute's “LEADERworks” certificate program; senior project (joint project with other schools/colleges or multidisciplinary project involving seniors from more than one engineering department); attend three professional societies and/or cultural campus events per year; and perform 100 hours of community service in approved areas. Transfer credit following matriculation in the courses listed above is not acceptable. Honors students must maintain a cumulative GPA of 3.25 and a tech GPA (cumulative GPA applied to all engineering, mathematics, and science courses attempted at Widener) of 3.25 or higher in every semester while enrolled in the program. Students who have been determined to be in violation of the Criteria for Satisfactory Academic Progress or the Academic Integrity Policy of the School of Engineering or the University Student Code of Conduct will be removed from the Engineering Honors Program and will not be eligible for reinstatement. For more details on program requirements, contact the dean's office.

## CERTIFICATE COMPLETION

To earn a Certificate of Honors in Engineering, students must have a cumulative GPA of 3.25 and a technical GPA of 3.25 or higher at graduation and satisfy the above program requirements. A Certificate of Honors in Engineering will be awarded to students who meet the requirements of the program at graduation. The official transcript will document the award of the certificate.

## MINORS IN ENGINEERING

Engineering students who are interested in gaining additional knowledge beyond their declared major are invited to pursue one or more of the academic minors. Interested students must apply in writing and be formally accepted by the department offering the minor. The requirements for each of the engineering minors are described below. To earn a minor in engineering, a student must complete at least two engineering or science courses (6 credits) that are not used to satisfy the graduation requirements of the student's major program. At least one course of the two courses must be at the 300-level or above.

### BIOMEDICAL ENGINEERING MINOR

Biomedical engineering 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 biomedical engineering, such as cardiovascular mechanics, kidney dialysis, tissue engineering, and biomechanics.

#### Required courses:

- BME 220 Introduction to Biomedical Engineering
- ENGR 401/402 Senior Project\*

*\*With a biomedical engineering focus*

#### One of the following options:

- ENGR 323 Mechanics of Deformable Bodies, BME 338 Biomedical Devices, and BME 465 Biomechanics *or*
- ENGR 325 Thermodynamics, BME 350 Biotransport, and BME 440 Bioheat & Mass Transfer

Students enrolling in the biomedical engineering 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 biomedical engineering setting or to excel in a bioengineering or biomedical engineering graduate program.

Interested students should contact the biomedical engineering department chairman early in their sophomore year.

### CHEMICAL ENGINEERING MINOR

Students pursuing majors in science or engineering who are interested in careers in the pharmaceutical, chemical process, 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:

- CHE 222 Chemical Engineering Principles
- CHE 329 Transport Phenomena, *or*  
ENGR 320 Fluid Mechanics & ME 455 Heat Transfer
- CHE 330 Chemical Engineering Thermodynamics
- CHE 332 Mass Transfer Operations

#### Required laboratory:

CHE 327 Chemical Engineering Laboratory I *or*  
CHE 427 Chemical 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 6 credits from junior-level and 3 credits from senior-level electrical engineering courses, including senior-year technical electives.**

### ENVIRONMENTAL ENGINEERING MINOR

A minor in environmental engineering is a good option for students 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. Chemical engineering, civil engineering, environmental science, chemistry, and biology majors should be able to apply 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:

- MATH 131/132 *or* MATH 141/142
- CHEM 145/146
- CE 347 Environmental Engineering

#### Required laboratory:

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

#### Electives; select three courses from:

CE 330, CE 435 (non-CE majors ONLY), CE 448, CE 457, ME 470, ENVR 261\*

*\*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 or other courses with appropriate environmental content 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:

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

### Choose one of the following three options:

- 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

## ROBOTICS ENGINEERING MINOR

The minor offers students a broad-based knowledge of mechanical systems, electronics, sensors, and controls in the pioneering and expanding field of robotics. The curriculum includes topics from electrical and mechanical engineering. It also provides hands-on experience in robotics systems. This multidisciplinary curriculum enables engineering students to pursue their major field of study with a component of robotics with automation for employment in manufacturing, defense, robotics sales/service, and a host of other industries. To complete the minor, a student must satisfy 21–22 semester hours, some of which are satisfied through engineering major requirements and/or technical electives. Interested students should consult with their advisor as early as the freshman year.

### Required courses (credits in parentheses; 21–22 total):

- ENGR 112 Computer Programming & Problem Solving (2)  
or ENGR 328 Computational Methods in Engineering (3)
- ENGR 214 Dynamics (3)
- ENGR 223 Electric Circuits Lab (1)
- ENGR 314 Introduction to Control Systems (3) or EE 471 Controls (3)
- EE 347 Electronics (3)
- RE 402 Introduction to Mechatronics (3)
- ME 351 Kinematics (3)
- RE 301 Mechanics Robotics Systems (3)

## ENGINEERING MAJORS

### 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.

### PROGRAM EDUCATIONAL 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.

### STUDENT 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 ability to apply principles of engineering, biology, human physiology, chemistry, calculus-based physics, mathematics (through differential equations), and statistics to solve biomedical engineering problems, including those associated with the interaction between living and nonliving systems.
- An ability to analyze, model, design, and realize biomedical engineering devices, systems, components, or processes.
- An ability to take measurements and interpret data from living systems.

## PRE-MEDICAL AND

### PRE-HEALTH PROFESSION STUDIES

Biomedical engineering can 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 profession schools. Interested biomedical engineering students are advised to complete two additional biology courses (with laboratories), two organic chemistry courses (with laboratories), and one English course. The biomedical engineering program coordinates with the Widener Health Professions Advisory Committee. With careful planning, students can complete the requirements for the biomedical engineering degree and pre-med/pre-health professions in four years. Students should consult with their academic advisor early in their freshman year.

#### CURRICULUM—BIOMEDICAL ENGINEERING Credits

<b>Freshman Fall</b> .....	<b>16.5</b>
ENGR 111 Engineering Techniques .....	2
MATH 141 Calculus I .....	4
CHEM 145 General Chemistry I .....	3
CHEM 147 General Chemistry Lab I (W) .....	1
ENGL 101 Reading, Thinking, & Writing .....	3
Humanities Elective .....	3
Physical Education Elective .....	0.5
<b>Freshman Spring</b> .....	<b>17.5</b>
ENGR 114 Engineering Graphics & Computer -Aided Design* ..	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
<b>Sophomore Fall</b> .....	<b>15</b>
BME 220 Introduction to Biomedical Engineering .....	1
MATH 241 Multivariable Calculus .....	4
ENGR 213 Statics .....	3
PHYS 162 Physics II .....	3
PHYS 164 Physics Lab II .....	1
Humanities Elective .....	3
<b>Sophomore Spring</b> .....	<b>17</b>
MATH 242 Elementary Differential Equations .....	3
ENGR 214 Dynamics .....	3
ENGR 219 Electric Circuits .....	3
ENGR 223 Electric Circuits Lab .....	1
BIOL 121 Anatomy & Physiology I .....	4
Social Science Elective .....	3
<b>Junior Fall</b> .....	<b>18</b>
ENGR 325 Thermodynamics .....	3
ENGR 315 Probability, Statistics, & Random Processes .....	3
BME 303 Biomedical Engineering Lab I (W) .....	2
BIOL 122 Anatomy & Physiology II .....	4
ENGR 323 Mechanics of Deformable Bodies .....	3
Social Science Elective .....	3
<b>Junior Spring</b> .....	<b>17</b>
BME 350 Biotransport .....	4
BME 360 Biomaterials .....	3
BME 304 Biomedical Engineering Lab II (W) .....	1
BME 340 Bioinstrumentation .....	3
ENGR 328 Computational Methods in Engineering .....	3
BME Technical Elective** .....	3

<b>Senior Fall</b> .....	<b>15</b>
ENGR 401 Senior Project I .....	2
ASC 400 Values Seminar (W) <sup>†</sup> .....	3
BME 410 Biomedical Engineering Seminar I .....	1
BME 465 Biomechanics .....	3
BME Technical Elective** .....	3
Humanities Elective .....	3

<b>Senior Spring</b> .....	<b>14</b>
ENGR 402 Senior Project II .....	2
BME 460 Regulatory & Manufacturing Practices .....	3
BME 420 Biomedical Engineering Seminar II .....	1
BME Technical Elective** .....	3
ENGR 312 Engineering Economics .....	2
Social Science Elective .....	3

#### TOTAL CREDITS 130

\*Students may substitute ENGR 112 Computer Programming & Engineering Problem Solving or ENGR 113 Computer-Aided Engineering Design in lieu of ENGR 114.

\*\* BME 338 Biomedical Devices; BME 430 Thermodynamics of Biological Systems; BME 432 Mass Transfer in Biological Systems; BME 440 Bioheat & Mass Transfer; BME 442 Cell & Tissue Engineering; BME 445 Systems in Biomedical Engineering; BME 446 Biomedical Fluid Mechanics; BME 449 Bioimaging; 488 Special Topics in Biomedical Engineering. Other courses are possible with approval of academic advisor and consent of instructor, including graduate courses for qualified students.

<sup>†</sup>Students may substitute PHIL 352 Business Ethics (W).

### DUAL DEGREES WITH BIOMEDICAL ENGINEERING

Students interested in a dual degree with chemical engineering, electrical engineering, mechanical engineering, or robotics engineering should contact the chairman of the biomedical engineering department or the dean's office for details about the curriculum. Students wishing to pursue a dual degree must get written permission from both departments.

### 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 EDUCATIONAL 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.

### STUDENT 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 physics and chemistry, with content at an advanced level, and the engineering application of these basic sciences to the design, analysis, and control of chemical, physical, and/or biological processes, including the hazards associated with these processes.
- a thorough grounding in the basic sciences, including chemistry, physics, and/or biology, with some content at an advanced level as appropriate to the objective of the program, and the engineering application of these basic sciences to the design, analysis, and control of chemical, physical, and/or biological processes, including the hazards associated with these processes.

CURRICULUM—CHEMICAL ENGINEERING	Credits
<b>Freshman Fall</b> .....	<b>16.5</b>
ENGR 111 Engineering Techniques .....	2
MATH 141 Calculus I .....	4
CHEM 145 General Chemistry I .....	3
CHEM 147 General Chemistry Lab I (W) .....	1
ENGL 101 Reading, Thinking, & Writing .....	3
Humanities Elective .....	3
Physical Education Elective .....	0.5
<b>Freshman Spring</b> .....	<b>17.5</b>
ENGR 115 Intro. to Computer Prog. Using MATLAB* .....	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
<b>Sophomore Fall</b> .....	<b>16</b>
MATH 241 Multivariable Calculus .....	4
CHE 222 Chemical Engineering Principles .....	3
CHEM 255 Organic Chemistry I .....	4
CHEM 257 Organic Chemistry Lab I .....	1
PHYS 162 Physics II .....	3
PHYS 164 Physics Lab II .....	1

<b>Sophomore Spring</b> .....	<b>17</b>
MATH 242 Elementary Differential Equations .....	3
CHEM 256 Organic Chemistry II .....	4
CHEM 258 Organic Chemistry Lab II .....	1
ENGR 325 Thermodynamics .....	3
Humanities Elective .....	3
Social Science Elective .....	3
<b>Junior Fall</b> .....	<b>16</b>
CHE 329 Transport Phenomena .....	4
CHE 330 Chemical Engineering Thermodynamics .....	3
CHEM 385 Physical Chemistry I .....	4
Technical Elective** .....	2
Humanities Elective .....	3
<b>Junior Spring</b> .....	<b>16</b>
CHE 314 Introduction to Process Control .....	3
CHE 327 Chemical Engineering Lab I (W) .....	1
CHE 332 Mass-Transfer Operations .....	4
CHEM 386 Physical Chemistry II .....	4
CHEM 389 Physical Chemistry Lab II .....	1
Social Science Elective .....	3
<b>Senior Fall</b> .....	<b>17</b>
ENGR 401 Senior Project I .....	2
CHE 429 Chemical Reaction Engineering .....	3
CHE 425 Process Design I .....	3
CHE 427 Chemical Engineering Lab II (W) .....	1
Technical Electives** .....	5
ASC 400 Values Seminar (W) <sup>†</sup> .....	3

<b>Senior Spring</b> .....	<b>14</b>
ENGR 402 Senior Project II .....	2
CHE 428 Process Design II (W) .....	3
Technical Electives** .....	6
Humanities/Social Science Elective .....	3

### TOTAL CREDITS **130**

\*Students may take ENGR 112 Computer Prog. & Engr. Problem Solving, ENGR 113 Computer-Aided Engineering Design, or ENGR 114 Engineering Graphics and Computer-Aided Design in lieu of ENGR 115.

\*\*Students completing this curriculum must take no more than one technical elective outside of the School of Engineering, unless they add technical electives in addition to those specified above. Students considering an initial career in the chemical process or petroleum industries should select technical electives from: ENGR 312, ENGR 315, ME 215, ME 352, CHEM 300- or 400-level courses, and, if qualified, graduate engineering courses. Students considering an initial career in the biochemical or pharmaceutical industries should select from: CHE 430; CHE 460/BME 460; CE 445; BCH 451 and 452; BIOL 261 and 262; CHEM 300- or 400-level courses; and, if qualified, graduate engineering courses. Students considering other initial career orientations may take technical electives at the 200 level or above, including those previously listed, as well as many other courses offered by any department in the School of Engineering. Students should check with their academic advisor before choosing technical electives. Students enrolled in a dual degree program and those taking biomedical engineering, mathematics, chemistry, or biology minors should check with their academic advisor before choosing technical electives.

<sup>†</sup>Students may substitute PHIL 352 Business Ethics (W).

### DUAL DEGREES WITH CHEMICAL ENGINEERING

Students interested in a dual degree with biomedical engineering or a dual degree with chemistry should contact the chairmen of the departments and the dean's office for details about the curriculum. Students wishing to pursue a dual degree must get written permission from both departments.

## CIVIL ENGINEERING

Civil engineers use imagination, creativity, and technical expertise to design, construct, and maintain the physical and operational infrastructure systems that keep society functioning. Buildings, bridges, railroads, airports, highways, mass transit systems, dams, waste disposal facilities, environmental protection systems, water supplies, harbors, and beaches are some of the results of civil engineering work. This wide range of projects makes civil engineering graduates well positioned for productive careers.

Widener's civil engineering program provides a broad-based education in a supportive environment that encourages inquisitive, analytical, and creative thinking, while exposing students to real-world practical aspects of the civil engineering profession. Full-time faculty members have an earned doctorate and most have a professional engineering license. 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 mechanical engineering. Minors in business, mathematics, sciences, and liberal arts are also available.

### PROGRAM EDUCATIONAL 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.

### STUDENT 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 civil engineering systems, components, and processes to meet desired needs within realistic constraints.
- An ability to function on multidisciplinary teams.
- An ability to identify, formulate, and solve problems in at least four 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, public policy and leadership concepts, as well as the importance of professional licensure.

## CURRICULUM—CIVIL ENGINEERING Credits

<b>Freshman Fall</b> .....	<b>16.5</b>
ENGR 111 Engineering Techniques .....	2
MATH 141 Calculus I .....	4
CHEM 145 General Chemistry I .....	3
CHEM 147 General Chemistry Lab I (W) .....	1
ENGL 101 Reading, Thinking, & Writing .....	3
Humanities Elective .....	3
Physical Education Elective .....	0.5
<b>Freshman Spring</b> .....	<b>16.5</b>
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
<b>Sophomore Fall</b> .....	<b>16</b>
MATH 241 Multivariable Calculus .....	4
PHYS 162 Physics II .....	3
ENGR 213 Statics .....	3
CE 205 Surveying with CAD Applications .....	3
Humanities Elective .....	3
<b>Sophomore Spring</b> .....	<b>17</b>
MATH 242 Elementary Differential Equations .....	3
CE 206 Structures & Materials Lab (W) .....	2
CE 250 Transportation Engineering .....	3
ENGR 214 Dynamics .....	3
ENGR 323 Mechanics of Deformable Bodies .....	3
Social Science Elective .....	3
<b>Junior Fall</b> .....	<b>18</b>
CE 342 Structural Analysis I .....	3
CE 347 Environmental Engineering .....	3
ENVR 300 Geology for Engineers** .....	3
ENGR 315 Probability, Statistics, & Random Processes .....	3
ENGR 326 Materials Engineering .....	3
Humanities Elective .....	3
<b>Junior Spring</b> .....	<b>17</b>
CE 304 Water Resources & Envr Engr Lab (W) .....	2
CE 334 Reinforced Concrete Design .....	3
CE 343 Soil Mechanics .....	4
ENGR 312 Engineering Economics .....	2
ENGR 320 Fluid Mechanics .....	3
Social Science Elective .....	3
<b>Senior Fall</b> .....	<b>17</b>
CE 435 Hydraulics & Hydrology .....	3
CE 441 Structural Steel Design .....	3
CE 446 Foundation Engineering .....	3
CE Elective <sup>††</sup> .....	3
ENGR 401 Senior Project I .....	2
Humanities or Social Science Elective .....	3
<b>Senior Spring</b> .....	<b>15</b>
ASC 400 Values Seminar (W) <sup>†</sup> .....	3
CE 445 Professional Practice Seminar .....	1
CE 450 Highway Engineering .....	3
CE Electives <sup>††</sup> .....	6
ENGR 402 Senior Project II .....	2
<b>TOTAL CREDITS</b> .....	<b>133</b>

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

\*\*Students may substitute BIOL 219 Microbiology, ENVR 171 Principles of Environmental Science, ENVR 201 Environmental Geology, ENVR 261 Geographic Information Systems, or other approved science course with permission of the department chairman.

<sup>†</sup>Students may substitute PHIL 352 Business Ethics (W).

Continued on next page.

†† CE electives must include either CE 330 Water & Wastewater Treatment or CE 345 Structural Analysis II. Additional CE electives include CE 401 Land Development, CE 448 Municipal & Industrial Waste Engineering, CE 449 Construction Engineering & Management, CE 453 Advanced Soil & Rock Engineering, CE 457 Environmental Impact Analysis, CE 462 Additional Topics in Structural Design, CE 488 Special Topics in Civil Engineering, and ME 474 Introduction to Finite Element Analysis. 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. Additional minors are also available in engineering and liberal arts.

### PROGRAM EDUCATIONAL 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 use the appropriate tools and technologies to enhance their productivity in their professional field.

### STUDENT 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 within 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 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.
- An ability to apply knowledge of probability, statistics, and other topics of advanced mathematics.
- An ability to demonstrate knowledge of basic hardware and software to solve engineering problems.

### 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 472 Controls II
- EE 474 Computers II
- EE 476 Intro. to Image Processing
- EE 479 Optical Fiber Communication Systems
- EE 482 Computer Networking & Data Communications
- EE 483 Wireless Communication Systems
- EE 484 Digital Signal Processing
- EE 485 EE 485 Introduction to Mechatronics
- 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 chair. Students may also apply this course, when enrolled in the accelerated bachelor's/master of science in engineering degree program, toward their graduate studies in electrical engineering.

### CURRICULUM—ELECTRICAL ENGINEERING Credits

<b>Freshman Fall</b> .....	<b>16.5</b>
ENGR 111 Engineering Techniques .....	2
MATH 141 Calculus I .....	4
CHEM 145 General Chemistry I .....	3
CHEM 147 General Chemistry Lab I (W) .....	1
ENGL 101 Reading, Thinking, & Writing .....	3
Humanities Elective .....	3
Physical Education Elective .....	0.5
<b>Freshman Spring</b> .....	<b>14.5</b>
ENGL 102 Literature & Critical Writing .....	3
ENGR 112 Computer Prog. & Engr. Problem Solving .....	2
MATH 142 Calculus II .....	4
PHYS 161 Physics I .....	3
PHYS 163 Physics Lab I .....	1
EE 101 Introduction to Microcontrollers .....	1
Physical Education Elective .....	0.5
<b>Sophomore Fall</b> .....	<b>17</b>
ENGR 213 Statics .....	3
ENGR 219 Electric Circuits .....	3
ENGR 223 Electric Circuits Lab .....	1
ENGR 312 Engineering Economics .....	2
MATH 241 Multivariable Calculus .....	4
PHYS 162 Physics II .....	3
PHYS 164 Physics Lab II .....	1

<b>Sophomore Spring</b> .....	<b>17</b>
EE 220 Linear Electrical Systems .....	3
EE 230 Logic Design .....	3
EE 232 Logic Design Lab .....	1
MATH 242 Elementary Differential Equations .....	3
PHYS 261 Modern Physics with Applications .....	3
PHYS 263 Physics III Lab* .....	1
Social Science Elective .....	3
<b>Junior Fall</b> .....	<b>16</b>
ENGR 315 Probability, Statistics, & Random Processes .....	3
EE 313 Electromagnetics .....	3
EE 333 Instrumentation Lab .....	1
EE 347 Introduction to Electronics .....	3
Engineering Science Technical Elective** .....	3
Humanities Elective .....	3
<b>Junior Spring</b> .....	<b>15</b>
ENGR 328 Computational Methods in Engineering .....	3
EE 305 Professional Practices Seminar (W) .....	1
EE 346 Introduction to Signal Analysis .....	3
EE 348 Microelectronics .....	3
EE 345 Junior Design Lab .....	2
Social Science Elective .....	3
<b>Senior Fall</b> .....	<b>17</b>
ENGR 401 Senior Project I .....	2
EE 471 Controls I .....	3
EE 473 Computers I .....	3
EE 477 Communications Systems .....	3
EE 435 Power Engineering .....	3
ASC 400 Values Seminar (W)*** .....	3
<b>Senior Spring</b> .....	<b>17</b>
ENGR 402 Senior Project II .....	2
Senior Technical Electives <sup>†</sup> .....	9
Social Science Elective .....	3
Humanities/Social Science Elective .....	3

**TOTAL CREDITS** **130**

\*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, ENGR 325 Thermodynamics, or ENGR 326 Materials Engineering. EE students enrolled in the Engineering Honors Program (EHP) need to take ENGR 325 honor section.  
 \*\*\*Students may substitute PHIL 352 Business Ethics (W).  
<sup>†</sup>The student's faculty advisor must approve the senior technical elective choices.

**DUAL DEGREES WITH ELECTRICAL ENGINEERING**

Students interested in a dual degree with biomedical engineering, mechanical engineering, or physics should contact the chairman of the electrical engineering department or the dean's office for details about the curriculum. Students wishing to pursue a dual degree 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 EDUCATIONAL 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.

**STUDENT 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 either thermal or mechanical system areas.

<b>CURRICULUM—MECHANICAL ENGINEERING</b>	<b>Credits</b>
<b>Freshman Fall</b> .....	<b>16.5</b>
ENGR 111 Engineering Techniques .....	2
CHEM 145 General Chemistry I .....	3
CHEM 147 Chemistry Lab I (W) .....	1
MATH 141 Calculus I .....	4
ENGL 101 Reading, Thinking, & Writing .....	3
Humanities Elective .....	3
Physical Education Elective .....	0.5
<b>Freshman Spring</b> .....	<b>15.5</b>
ENGR 114 Engineering Graphics & Computer-Aided Design* ..	2
ENGR 115 Intro. to Computer Programming Using MATLAB ...	2
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
<b>Sophomore Fall</b> .....	<b>18</b>
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
<b>Sophomore Spring</b> .....	<b>16</b>
ENGR 214 Dynamics .....	3
ENGR 323 Mechanics of Deformable Bodies .....	3
MATH 242 Differential Equations .....	3
ME 215 Fundamentals of Engineering Materials & Design (W) ..	4
Social Science Elective .....	3
<b>Junior Fall</b> .....	<b>17</b>
ME 303 Mechanical Measurements I (W) .....	2
ME 351 Kinematics .....	3
ENGR 320 Fluid Mechanics .....	3
ENGR 328 Computational Methods in Engineering .....	3
ENGR 325 Thermodynamics .....	3
Humanities Elective .....	3
<b>Junior Spring</b> .....	<b>16</b>
ME 304 Mechanical Measurements II (W) .....	2
ME 346 Thermodynamics II .....	3
ME 352 Mechanics of Engineering Materials .....	3
ME 353 Engineering Vibrations .....	3
ENGR 312 Engineering Economics .....	2
Social Science Elective .....	3
<b>Senior Fall</b> .....	<b>16</b>
ENGR 401 Senior Project I .....	2
EE 417 Controls I .....	3
ME 407 Mechanical Engineering Seminar I .....	1
ME 455 Heat Transfer .....	3
ME 461 Design .....	4
ASC 400 Values Seminar (W) <sup>††</sup> .....	3
<b>Senior Spring</b> .....	<b>15</b>
ENGR 402 Senior Project II .....	2
ME 408 Mechanical Engineering Seminar II .....	1
Mechanical Engineering Design Elective** .....	3
Mechanical Engineering Technical Electives <sup>†</sup> .....	6
Humanities/Social Science Elective .....	3
<b>TOTAL CREDITS</b>	<b>130</b>

\*Students may take ENGR 113 Computer-Aided Engineering Design in lieu of ENGR 114.

\*\*Mech. engineering design electives: ME 462 Design of Mech. Systems, ME 464 Design of Fluid/Thermal Systems.

<sup>†</sup>Mech. engineering technical electives: ME 470 Future Energy Systems, ME 474 Intro. to Finite Element Analysis; ME 477 Intro. to Composite Materials; ME 488 Special Topics in Mech. Engineering; ENGR 499 Independent Study. Other courses are possible with approval of the academic advisor and consent of the instructor.

<sup>††</sup>Students may substitute PHIL 352 Business Ethics (W).

## DUAL DEGREES WITH MECHANICAL ENGINEERING

Students interested in a dual degree with biomedical engineering, electrical engineering, or physics should contact the chairman of the mechanical engineering department or the dean's office for details about the curriculum. Students wishing to pursue a dual degree must get written permission from both departments.

## ROBOTICS ENGINEERING

Robotics engineering is an emerging discipline that is appearing in a wide variety of industries and is on the cusp of impacting every aspect of the way we work and live. This multidisciplinary field integrates knowledge from various areas such as smart sensors, controls, and electrical and mechanical engineering. The overarching goal of robotics engineers is to create systems that can do work that is dangerous or not suitable for humans, or perform tasks with speed and accuracy that are otherwise unachievable.

A degree in robotics engineering provides an excellent springboard into an engineering career in a variety of potential fields. Some examples of robotics engineering applications include intelligent, collaborative, and adaptive robots' assistive devices and rehabilitation; autonomous vehicles; precision and remote surgery; military/law enforcement; environmental remediation; and office/consumer appliances. Job growth for robotics engineers is anticipated to rise rapidly to meet the demand to invent, research, design, manufacture, sell, and service robotic systems and components.

The robotics engineering program provides a broad-based education in a supportive environment that encourages inquisitive, analytical, and creative thinking and exposes students to real-world practical aspects of the engineering profession.

### PROGRAM EDUCATION OBJECTIVES

Graduates of Widener's robotics engineering program are expected to:

- Successfully practice in a wide array of industries and government.
- Engage in lifelong learning through professional development and/or the pursuit of advanced degrees in robotics or related fields.
- Communicate effectively and collaborate on cross functional project teams.
- Demonstrate a commitment to ethical decision making and professionalism.

### STUDENT OUTCOMES

Over the course of their studies, graduates of the robotics 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.

### DUAL DEGREES WITH ROBOTICS ENGINEERING

Students have the option to pursue dual degrees with other majors such as biomedical engineering, electrical engineering, mechanical engineering, and computer science. Additional credits are required to satisfy the requirements of each degree earned. Students should contact the department chair to coordinate their plan of study early in the freshman year.

## CURRICULUM—ROBOTICS ENGINEERING Credits

<b>Freshman Fall</b> .....	<b>16.5</b>
ENGL 101 Reading, Thinking, & Writing .....	3
ENGR 111 Engineering Techniques .....	2
MATH 141 Calculus I .....	4
PHYS 161 Physics I .....	3
PHYS 163 Physics Lab I .....	1
Humanities/Social Science Elective .....	3
Physical Education Elective .....	0.5
<b>Freshman Spring</b> .....	<b>16.5</b>
ENGR 112 Computer Prog. & Engr. Problem Solving .....	2
ENGR 114 Engr. Graphics & Computer-Aided .....	2
MATH 142 Calculus II .....	4
PHYS 162 Physics II .....	3
PHYS 164 Physics Lab II .....	1
RE 101 Intro. to Microcontroller in Robotics Systems .....	1
Humanities/Social Science Elective .....	3
Physical Education Elective .....	0.5
<b>Sophomore Fall</b> .....	<b>16</b>
ENGR 213 Statics .....	3
ENGR 219 Electric Circuits .....	3
ENGR 223 Electric Circuits Lab .....	1
ENGR 312 Engineering Economics .....	2
MATH 241 Multivariable Calculus .....	4
Humanities Elective .....	3
<b>Sophomore Spring</b> .....	<b>16</b>
EE 230 Logic Design .....	3
EE 232 Logic Design Lab .....	1
ENGR 214 Dynamics .....	3
ENGR 323 Mechanics of Deformable Bodies .....	3
MATH 242 Elementary Differential Equations .....	3
Humanities/Social Science Elective .....	3
<b>Junior Fall</b> .....	<b>18</b>
EE 347 Introduction to Electronics .....	3
ENGR 315 Probability, Statistics, & Random Processes .....	3
ME 351 Kinematics .....	3
RE 301 Mechanics of Robotics Systems .....	3
RE 304 Object-oriented Prog. For Robotics Applications .....	3
Humanities/Social Science Elective .....	3
<b>Junior Spring</b> .....	<b>16</b>
ENGR 328 Computational Methods in Engineering .....	3
MATH 331 Linear Algebra .....	4
RE 302 Signal Analysis in Robotics Systems .....	3
RE 303 Machine Design for Robotics Systems .....	3
Humanities/Social Science Elective .....	3
<b>Senior Fall</b> .....	<b>15</b>
ASC 400 Values Seminar (W) <sup>††</sup> .....	3
EE 417 Controls I .....	3
EE 473 Computers I .....	3
ENGR 401 Senior Project I .....	2
RE 404 Professional Seminar (W) .....	1
Technical Elective* .....	3
<b>Senior Spring</b> .....	<b>16</b>
ENGR 402 Senior Project II .....	2
RE 401 Robotics & Mechatronics Lab (W) .....	2
RE 402 Intro. to Mechatronics .....	3
RE 403 Control of Robotics Systems .....	3
Technical Elective .....	3
Humanities/Social Science Elective .....	3
<b>TOTAL CREDITS</b> .....	<b>130</b>

\*Students may take 400-level courses in BME, EE, and ME.

\*\*Students may substitute PHIL 352 Business Ethics (W).

# School of Human Service Professions

The purpose of the School of Human Service Professions is to provide academic programs devoted to educating undergraduate and graduate students for professions that have as their primary focus the provision of human services. The school consists of the following academic units: the Center for Education, the Center for 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 EDUCATION

*The State Board of Education adopted changes specific to elementary education programs. New certification guidelines became effective January 1, 2013, regardless of a candidate's enrollment date.*

The Center for Education prepares teacher candidates to become "knowledgeable and reflective practitioners." To reach this goal, the center 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 (Pre-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 131 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.

## COMMUNITY ENGAGED TEACHER EDUCATION (CETE)

CETE (Community Engaged Teacher Education) represents a block of service learning courses integrated around the theme of social justice. In CETE, the development of cultural proficiency, culturally responsive pedagogy, and civic engagement within a community of practice support our goal of social justice education. The purpose of CETE is to simultaneously increase teacher candidates' pedagogical content knowledge and accommodate culturally responsive pedagogy (CRP) and cultural proficiency through service learning.

CETE will accomplish this goal through the contributions of all stakeholders (Widener faculty, Stetser Elementary teachers, CUSD, and the community mentors of Chester). This team contributes their varied assets and expertise as equal partners in the development of CETE.

Teacher candidates are immersed in the school and community using interdisciplinary themes to connect the theoretic bases of their coursework with the reality of the classroom through CRP. Their courses include literacy education, special education, science methods, and urban anthropology. Field work occurs in Stetser classrooms while course work is held at the Asbury AME Church. The interdisciplinary content of coursework and relationships with community mentors will help our teacher candidates realize the importance of real connection with their students within the context of their community.

As an integrated set of service learning courses, teacher candidates will develop characteristics of responsible citizenship and leadership while applying course content in the context of an identified community need. Service learning is a required component of these courses.

Each CETE course focuses on different facets of teaching in a diverse, urban environment utilizing an immersion experience that identifies and utilizes the assets found in the community to increase ALL Stetser students' integrated knowledge bases (science, literacy, special education, and anthropology).

### 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 undergraduate education, accreditation, and licensure regarding their individual situation as soon as they are admitted to the university.

Applications for admission to teacher candidacy are available at the Center for Education and through the center's website at [www.widener.edu](http://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 such as the basic skills assessment battery and GPA requirements.

The director of undergraduate education makes the determination to admit students to teacher candidacy, in consultation with the advisor as needed, based on evidence that the students have completed or acquired the following:

- At least 48 semester hours of coursework.
- Passing scores on the basic skills assessment battery: CORE Assessment or PAPA. Transfer students are required to pass the basic skills battery and may have to delay their admittance to the teacher certification programs' higher level courses until they pass this battery of tests. SAT scores of 500 or more in each subtest with a 1550 total score or ACT scores above 23 in each subtest can be utilized to exempt a candidate from taking the PAPA or CORE basic skills assessment battery.
- 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.
- A 2.8 GPA, but note that an overall 3.0 GPA is required to be recommended for certification upon completing any teacher preparation program in Pennsylvania.
- To meet the GPA standards set by the State Department of Education, a "C" or better is required in all education courses.
- A 2.9 overall GPA is required for student teaching in order to achieve the 3.0 overall GPA for licensure.
- Two favorable faculty recommendations.
- Satisfactory scores on *annual* writing samples.
- A score of at least "emergent" on the portfolio review transition point II.

Students who do not apply for admission to teacher candidacy upon completing 60 semester hours of coursework will be barred from scheduling additional education courses: 1300- and 1400-level coursework or methods courses for secondary students who seek certification and licensure. 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 all Secondary Education students: During ED 101

#### 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 (two artifacts and rationale(s) for each standard)

- 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, the majority of 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 work and/or participation in athletics and other collegiate extracurricular programs) do not interfere with these field and teaching experiences.

Prior to engaging in any field experience, education majors must obtain three criminal background clearances as mandated by the Pennsylvania Department of Education and submit them to Castlebranch. Secondary certification students must submit copies of three clearances to the Office of Certification and Licensure. The three required 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 are directed to complete their clearances in the summer months for the following academic year. Transfer students will need new clearances at the time of their admission to Widener. Once obtained, students must contact the Office of Certification for submission of clearances to Castlebranch. Secondary certification seekers must bring copies to the Office of Certification and Licensure. Each clearance has its own cost and processing turnaround time, so students should carefully plan ahead to obtain these three clearances. Without clearances on file, students will not be able to fully participate in the ED courses, which will likely impact the grade earned for the course. Questions about criminal background clearances may be directed to the Office of Certification at 610-499-4373.

**Special Note:** The Center for Education maintains a strict dress code policy for all students engaged in field experiences. The policy calls for males to wear a dress shirt, tie, dress slacks, and dress shoes. Women must wear either a skirt or dress pants with a dress 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. For a complete explanation, please refer to the Center for Education website on Campus Cruiser.

### 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 undergraduate education and the student's academic advisor. A GPA of 2.9 must be achieved before approval for student teaching. All students planning to student teach must attempt the PECT or PRAXIS content test before they student teach. 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 with a B or better, the writing sample requirement, maintaining an overall GPA of 2.9, and the development of a portfolio according to INTASC principles.

Seniors in the Pre-K–4/SPED program will participate in the Community-Engaged Teacher Education (CETE) program beginning in the fall semester of the senior year and continuing through the following spring semester, followed by the student teaching semester providing teacher candidates a full year of public school residency and teaching before graduating.

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, and they may not 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 they are seeking certification in Pre-K–4/SPED. 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 Widener faculty member 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 be expected to communicate via SKYPE (or other protocol) with faculty at Widener as requested. They will also be under the direction of a cooperating teacher from the elementary/secondary school in which they are doing their student teaching.

### 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 undergraduate education 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 Center for Education runs the Widener University Child Development Center, a full-time laboratory preschool for children two to six years of age. Many students in the Elementary Education: The Early Years program complete the field experiences for their undergraduate courses in education at this school. The school is licensed by the Pennsylvania Department of Education as a nursery school and by the Welfare Department as a child care center. The Child Development Center is an ACEI (Association for Childhood Education International) nationally accredited program.

### WRITING REQUIREMENT

Undergraduate majors in the Center for Education must take two writing enriched courses from the College of Arts and Sciences and two courses from the following: ED 101, 1202, 1205, 1221, 1302, 1305, 1402, 1410, and 1424.

### 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.
- Take and pass a basic skills assessment battery, CORE or PAPA, or qualifying Scores on SAT or ACT prior to formal entry in to the teacher certification program and prior to taking professional core courses (1300 and 1400 level course work). Please meet with your advisor for guidance.
- 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 requirements.
- Pass the portfolio requirement with at least a score of proficient.
- Earn a passing score on the PECT or Praxis II content tests as required by the Pennsylvania Department of Education.
- Be approved by the director of undergraduate education and appropriate faculty members.
- Achieve a 2.9 GPA prior to student teaching semester.

### BACHELOR'S DEGREES IN EDUCATION 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 education students must have criminal record checks, child abuse clearances, and FBI fingerprints uploaded into Castlebranch prior to the first ED class (education students must renew clearances each summer, including the summer before entering Widener in preparation for field experiences). Failure to have these records will result in a reduction in a course grade. Students not participating in field experiences in ED courses that require it will not meet minimum expectations for these courses.

- Secondary students must have copies of three clearances in the Office of Certification and Licensure before an ED class that requires field experiences.
- Admission for student teaching requires an overall 2.9 GPA and a completed attempt to pass PECT or PRAXIS II content tests.
- PA certificates do not guarantee another state will grant a teaching certificate. For direction and assistance in planning for an out-of-state certificate, contact Dr. Marcia Bolton at [mvbolton@mail.widener.edu](mailto:mvbolton@mail.widener.edu).

**CURRICULUM—ELEMENTARY EDUCATION:  
THE EARLY YEARS WITH SPED CERTIFICATION Credits**

<b>Freshman Fall</b> .....	<b>17.5</b>
ANTH 105 Cultural Anthropology .....	3
ED 101 Intro. to Teaching & Educational Technology .....	4
ED 1101 Family & Community Relations .....	3
ENGL 101 Reading, Thinking, & Writing .....	3
FRS 101 Freshman Seminar .....	1
PSY 105 Introduction to Psychology .....	3
Physical Education Elective .....	0.5
<b>Freshman Spring</b> .....	<b>16.5</b>
ED/PSY 202 Child Psychology* .....	3
ED 1102 Effective Instructional Practices & Delivery Methods for All Levels of Special Education Support .....	3
ED 1104 Emergent Literacy .....	3
ED 1311 A Cross-Cultural Comparison: Education in the U.S. & Trinidad** .....	1
ENGL 102 Literature & Critical Writing .....	3
MATH 111 Mathematical Ideas I .....	3
Physical Education Elective .....	0.5
<i>Portfolio Requirement – Transition Point I</i>	
<b>Sophomore Fall</b> .....	<b>18.0</b>
ED 1201 Early Literacy .....	3
ED 1202 Advocacy, Collaboration, & Cooperative Learning .....	3
HIST 121 or 122 American Civilization I or II .....	3
Math 112 Mathematical Ideas II .....	3
English Literature Elective† .....	3
HIST Elective*** .....	3
<b>Sophomore Spring</b> .....	<b>18.0</b>
ED 288 Introduction to Cultural Proficiency .....	3
ED 1200 Classroom Mgmt .....	3
ED 1203 Mathematics Methods I .....	3
ED 1204 Engaging Young Children, Integrating Curriculum, & Instruction .....	3
ED 1205 Special Education Processes & Procedures, Screening, Assessment, IEP Development, & Evaluation .....	3
ED 1206 Literacy Foundations I* .....	3
<i>Apply for teacher candidacy.</i>	
<i>Portfolio Requirement – Transition Point II</i>	
<b>Junior Fall</b> .....	<b>19.0</b>
CHEM 100/111 Chemistry & Everyday Life .....	4
EC 201 Macroeconomics, EC 202 Microeconomics, or Politic Science Elective .....	3
ED 1302 Literacy Foundations II .....	3
ED 1304 Mathematics Methods II .....	3
ED 1305 Intensive Reading, Writing, & Mathematics Intervention Approaches .....	3
Elective†† .....	3
<i>Note: Apply for student teaching.</i>	

<b>Junior Spring</b> .....	<b>18.0</b>
ED 1308 Integrating the Arts .....	3
ED 1309 Evidence-Based Effective Instruction— Students with Behavioral Disabilities .....	3
ED 1323 Social Studies Methods .....	3
ED 1401 Evidence-Based Effective Instruction— Pervasive Developmental Disorders* .....	3
ED 1402 Evidence Based Effective Instruction— Low Incidence Disabilities* .....	3
Science Elective .....	3
<b>Senior Fall (CETE)</b> .....	<b>14.0</b>
ANTH 261 Urban Anthropology .....	4
ED 1306 Teaching for Literacy in Today’s Diverse Classroom* ..	4
ED 1307 Science Methods* .....	3
ED 1310 Subject Area Content Access for Students with Learning Disabilities* .....	3
<i>Portfolio Requirement – Transition Point III</i>	
<b>Senior Spring</b> .....	<b>15</b>
ED 1405 Collaboration & Inclusion (6600) .....	3
ED 1410 Student Teaching .....	12
<i>Portfolio Requirement – Transition Point IV</i>	
<b>TOTAL CREDITS</b> .....	<b>131</b>

\*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 for this class and its accompanying field experience.

\*\*ED 1311 is an international travel, service learning course that is offered every other spring semester. It is an elective and can be taken at any spring semester.

\*\*\*Recommended: *Poverty & Society, Sociology of Youth, The Family, Race Relations in American Society*

†Literature courses dealing with CRP issues: e.g., *Southern Literature, African American Literature, Literature & The Environment, Literature & Critical Writing, Gender & Genre, Gay & Lesbian Experience*

††Recommended: *Race & Racism, Intro to Sociology, Civic Engagement, Social Activism, Social Deviance*

**SECONDARY EDUCATION PROGRAMS**

Students can pursue secondary teacher certification in biology, chemistry, earth and space science (see science), English, French (see modern language), mathematics, physics, social studies (history or political science), and Spanish (see modern language). See the individual majors in the College of Arts and Sciences section for requirements and curricula for each certification listed above.

Education courses required for secondary certification include ED 101, 250, 306, 307, 308, 309, 310, 1405, 1410, 1421, 1422, and an appropriate course in teaching methods for the selected certification area. 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.

**CERTIFICATE IN PROFESSIONAL WRITING**

<b>REQUIREMENTS— PROFESSIONAL WRITING CERTIFICATE</b>	<b>Credits</b>
PRWR 100 Fundamentals of Professional Writing .....	3
PRWR 215 Effective Business Communication .....	3
PRWR 300 Techniques in Professional Writing .....	3
PRWR 405 Practicum in Professional Writing .....	3
<b>TOTAL CREDITS</b> .....	<b>12</b>

## CENTER FOR SOCIAL WORK EDUCATION

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### 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 and transfer students are formally considered for admission to the BSW program 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 45 credits, completed SW 107, be enrolled in SW 321 and SW 331, and be meeting the academic performance standards. All four-year social work majors must submit an application for admission to the BSW program in the fall semester of their junior 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 45 credit hours.
- Completed SW 107.
- Enrolled in SW 321 and SW 331.

- 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 in the fall 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 should be discussed with the BSW program director.
- Enrolled in appropriate social work courses according to the academic plan 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 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; variations of credits count for some dual degree programs).

### 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  
DISTRUBUTION REQUIREMENTS**

**Science and Mathematics (12 credits)**

- Four 3-credit courses in science or mathematics

**Humanities (12 credits)\***

- One 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 take one of the four humanities courses at the 300 level or two semesters of a modern language at the elementary or intermediate level. In addition, double majors (e.g., social work/psychology, social work/women’s studies) must take one course in literature, art history, music, or philosophy.*

*\*\*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 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 unless granted permission by the BSW program director.

**FLEXIBLE SCHEDULE OPTIONS**

The BSW program has traditional day courses, as well as evening, weekend, and hybrid courses. All courses are available to all students. Dual degree students are encouraged to take advantage of available course sections when they are offered.”

**SOCIAL WORK MINOR**

Students may elect to take a social work minor with a total of 21 credit hours. Required courses include: SW 107, SW 270, and SW 342. The remaining 12 credit hours could include SW 320, 321, 330, 331, 341, 440, or 441. Additionally, some students may elect to take SW 350/SW 351 to fulfill research requirements. *Note that some courses have prerequisites from the fall semester.*

**BSW WITH MINOR IN LEADERSHIP STUDIES**

BSW students are encouraged to pursue a minor in leadership studies through the Oskin Leadership Institute. A total of 18 leadership credits are required. These include one introductory leadership theory course (3 credits); three leadership-in-context courses (9 credits); two leadership development modules (1.5 credits each); and one leadership capstone course (3 credits).

**REQUIREMENTS—SOCIAL WORK MAJOR Credits**

**Introductory courses (21 credits)**

ANTH 105 Cultural Anthropology . . . . .	3
ENGL 101 Reading, Thinking, & Writing . . . . .	3
PSY 105 Introduction to Psychology . . . . .	3
SOC 105 Introduction to Sociology . . . . .	3
SW 107 Introduction to Social Work & Social Welfare . . . . .	3
Science Electives 1 and 2 . . . . .	6

**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 69**

*\*See specific dual degree ladders for research requirements.*

<b>CURRICULUM—SOCIAL WORK</b>	<b>Credits</b>
<b>Freshman Fall</b> .....	<b>16.5</b>
ENGL 101 Reading, Thinking, & Writing .....	3
FRS 101 Freshman Seminar .....	1
PSY 105 Introduction to Psychology .....	3
SW 107 Introduction to Social Work & Social Welfare .....	3
Science Elective 1 .....	3
Developmental Course (if required) .....	3
Physical Education Elective 1 .....	0.5
<b>Freshman Spring</b> .....	<b>15.5</b>
ANTH 105 Cultural Anthropology .....	3
SOC 105 Introduction to Sociology .....	3
Humanities Elective 1 .....	3
Science Elective 2 .....	3
Free Elective .....	3
Physical Education Elective 2 .....	0.5
<b>Sophomore Fall</b> .....	<b>15</b>
Humanities Elective 2 .....	3
Science Elective 3 .....	3
Social Science Elective 1 .....	3
Free Electives .....	6
<b>Sophomore Spring</b> .....	<b>15</b>
Humanities Electives 3 & 4 .....	6
Science Elective 4 .....	3
Free Electives .....	6
<b>Junior Fall</b> .....	<b>15</b>
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
<b>Junior Spring</b> .....	<b>15</b>
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
<b>Senior Fall</b> .....	<b>15</b>
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
<b>Senior Spring</b> .....	<b>15</b>
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
<b>TOTAL CREDITS</b>	<b>122</b>

## DUAL DEGREES & CONCENTRATIONS

The BSW program has numerous dual degree options for students. These include psychology; sociology (applied practice track); gender, women, and sexuality studies; criminal justice; fine arts; and K–12 school counselor certification. All students enrolled in these programs must consult with their advisors in social work and the corresponding program for accurate academic advisement in both programs.

Please note that courses in the following dual degrees may be taken out of order so that students can complete all curricular requirements: Psychology; Gender, Women, & Sexuality Studies; Sociology; Fine Arts; and Criminal Justice.

### DUAL DEGREE IN SOCIAL WORK/PSYCHOLOGY

Students may elect to earn a dual degree in social work and psychology. This is accomplished by using free electives to complete requirements for the psychology major, including the general education requirements. Students who follow the curriculum below receive a BSW degree and a BA in psychology.

<b>CURRICULUM—SOCIAL WORK/ PSYCHOLOGY DUAL DEGREE**</b>	<b>Credits</b>
<b>Freshman Fall</b> .....	<b>15.5/16.5</b>
ENGL 101 Reading, Thinking, & Writing .....	3
FRS 101 Freshman Seminar (optional) .....	(1)
MATH 101, 116, or 117 (math requirement)* .....	3
PSY 105 Introduction to Psychology* .....	3
SW 107 Introduction to Social Work & Social Welfare .....	3
Humanities Elective 1 .....	3
Physical Education Elective 1 .....	0.5
<b>Freshman Spring</b> .....	<b>16.5</b>
ANTH 105 Cultural Anthropology .....	3
PSY Domain 1* .....	3
Free Elective or MATH 116 or 117 if MATH 101 taken in fall ...	3
Humanities Elective 2 .....	3
Science Elective with Laboratory .....	4
Physical Education Elective 2 .....	0.5
<b>Sophomore Fall</b> .....	<b>16</b>
PSY 385 Statistical Methods w/ Lab* .....	4
PSY Domain 2* .....	3
SOC 105 Introduction to Sociology .....	3
SW 330 Human Behavior & Cultural Diversity I .....	3
Humanities Elective 3 (W) .....	3
<b>Sophomore Spring</b> .....	<b>16</b>
PSY 387 Research Design & Lab* .....	4
PSY Domain 3* .....	3
SW 331 Human Behavior & Cultural Diversity II .....	3
Science/Math Elective 2 .....	3
Science/Math Elective 3 .....	3
<b>Junior Fall</b> .....	<b>16</b>
SW 320 Generalist Social Work Practice with Individuals, Families, & Groups I .....	3
SW 341 Social Work History & Policy I .....	3
PSY Elective with Lab (W)* .....	4
PSY Elective 1 .....	3
Science/Math Elective 4 .....	3
<b>Junior Spring</b> .....	<b>15</b>
ASC 400 Values Seminar .....	3
PSY Domain 4* .....	3
SW 321 Generalist Social Work Practice with Individuals, Families, & Groups II .....	3
SW 342 Social Work History & Policy II .....	3
Humanities Elective 4 (W) .....	3

<b>Senior Fall</b> .....	<b>15</b>
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
PSY Elective 2 .....	3
<b>Senior Spring</b> .....	<b>15</b>
PSY 430 Current Issues in Psychology .....	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** **126**

\*A minimum grade of C is required to meet psychology major requirements.

\*\*All dual degree students should consult the psychology section of the catalog to review psychology requirements.

**DUAL DEGREE IN SOCIAL WORK/  
GENDER, WOMEN, & SEXUALITY STUDIES**

Students may elect to earn a dual degree in social work and gender, women, and sexuality studies. This is accomplished by using free electives to complete requirements for the gender, women, and sexuality studies major, including the general education requirements. Students who follow the curriculum below receive a BSW degree and a BA in gender, women, and sexuality studies.

**CURRICULUM—SOCIAL WORK/GENDER, WOMEN,  
& SEXUALITY STUDIES DUAL DEGREE\*\*\*** **Credits**

<b>Freshman Fall</b> .....	<b>15.5</b>
ANTH 105 Cultural Anthropology .....	3
ENGL 101 Reading, Thinking, & Writing .....	3
SW 107 Introduction to Social Work & Social Welfare .....	3
GWS 101 Introduction to Gender, Women, & Sexuality Studies* .....	3
Science Elective 1 .....	3
Physical Education Elective 1 .....	0.5
<b>Freshman Spring</b> .....	<b>15.5</b>
MATH Skills Requirement (Science Elective 2) .....	3
POLS 101 American Governments & Politics .....	3
PSY 105 Introduction to Psychology .....	3
SOC 105 Introduction to Sociology .....	3
GWS/Humanities Elective* 1 .....	3
Physical Education Elective 2 .....	0.5
<b>Sophomore Fall</b> .....	<b>16</b>
SW 330 Human Behavior & Cultural Diversity I .....	3
SOC 257 Sex & Gender in Society .....	3
GWS/Humanities Electives* 2 .....	3
GWS/Social Science Elective* 1 .....	3
MATH/Science Elective 2* .....	4
<b>Sophomore Spring</b> .....	<b>15</b>
GWS 355 Feminist Theories and Methodology .....	3
SW 331 Human Behavior & Cultural Diversity II .....	3
GWS/Humanities Elective* 3 .....	3
GWS/Social Science Elective* 2 .....	3
MATH/Science Elective 4* .....	3
<b>Junior Fall</b> .....	<b>15</b>
SW 270 Human Sexuality or Social Science Elective 3 .....	3
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
Math/Science Elective* .....	4

<b>Junior Spring</b> .....	<b>15</b>
ASC 400 Values Seminar .....	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 Elective .....	3

<b>Senior Fall</b> .....	<b>15</b>
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

<b>Senior Spring</b> .....	<b>15</b>
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**

\*See the “Requirements—Gender, Women, and Sexuality Studies” major in the catalog. Please also refer to the “General Education Distribution Requirements” under the Center for Social Work Education section of the catalog for details. SOC 257 fulfills the upper level social science elective. The math/science elective 4 must be a 4-credit (lab) elective. SW 351 fulfills the QA requirement.

\*\*Dual degree students should meet with the GWS director for advisement on College of Arts and Sciences requirements.

**DUAL DEGREE IN SOCIAL WORK/SOCIOLOGY**

Students may elect to earn a dual degree in social work and sociology. This is accomplished by using free electives to complete requirements for the sociology major, including the general education requirements. Students who follow the curriculum receive both a BSW and a BA in sociology.

Students wishing to earn a dual degree with sociology must choose the Applied Sociology concentration (see the “Requirements—Sociology Major with Applied Sociology Concentration” section of the catalog). Note: Sociology 105 should be taken freshman year; Sociology 355 should be taken fall of junior year; Sociology 382 should be taken spring of junior year; and Sociology 405 should be taken spring of junior year. Also note that Sociology 355, 382, and 405 are only offered one time each year. The social work field placement substitutes for the Sociology 423 internship requirement.

**DUAL DEGREE IN SOCIAL WORK/CRIMINAL JUSTICE**

Students may elect to earn a dual degree in social work and criminal justice. This is accomplished by using free electives to complete requirements for the criminal justice major, including the general education requirements. Students who follow the curriculum below receive a BSW degree and a BA in criminal justice.

**CURRICULUM—SOCIAL WORK/CRIMINAL  
JUSTICE DUAL DEGREE** **Credits**

<b>Freshman Fall</b> .....	<b>16</b>
SW 107 Introduction to Social Work & Social Welfare .....	3
ENGL 101 Reading, Thinking, & Writing .....	3
CJ 105 Introduction to Criminal Justice .....	3
MATH 101 (if required) .....	3
FRS 101 Freshman Seminar .....	1
Science Elective 1 .....	3

<b>Freshman Spring</b> .....	<b>15</b>
POLS 101 American Government & Politics .....	3
PSY 105 Introduction to Psychology .....	3
SOC 105 Introduction to Sociology .....	3
Humanities Elective 1 (Philosophy/Aesthetics) .....	3
MATH Skills Requirement (Science Elective 2) .....	3
<b>Sophomore Fall</b> .....	<b>15.5</b>
SW 330 Human Behavior & Cultural Diversity I .....	3
CJ 210 Criminal Courts .....	3
SOC 201 Criminology .....	3
Humanities Elective 2 (History/Art History) .....	3
Science Elective 3 .....	3
Physical Education Elective 1 .....	0.5
<b>Sophomore Spring</b> .....	<b>15.5</b>
SW 331 Human Behavior & Cultural Diversity II .....	3
CJ 215 Corrections .....	3
CJ 315 Juvenile Justice System .....	3
Humanities Elective 3 (w/ Diversity Content) .....	3
Science Elective 4 .....	3
Physical Education Elective 2 .....	0.5
<b>Junior Fall</b> .....	<b>15</b>
SW 320 Generalist Social Work Practice with Individuals, Families, & Groups I .....	3
SW 341 Social Work History & Policy I .....	3
CJ 325 Law/Procedure .....	3
Humanities Elective 4 (300 Level) .....	3
Free Elective .....	3
<b>Junior Spring</b> .....	<b>16</b>
SW 321 Generalist Social Work Practice with Individuals, Families, & Groups II .....	3
SW 342 Social Work History & Policy II .....	3
CJ 380 Criminal Justice Research Methods .....	4
Criminal Justice Core Requirement* .....	3
ASC 400 Values Seminar .....	3
<b>Senior Fall</b> .....	<b>15</b>
SW 420 Social Work Practice with Individuals, Families, & Groups I .....	3
SW 423 Social Work Field Placement I*** .....	3
SW 409 Social Work Capstone I or CJ 409 Senior Research I** .....	3
SW 440 Social Work with Organizations .....	3
CJ 405 Ethics .....	3
<b>Senior Spring</b> .....	<b>15</b>
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 or CJ 410 Senior Research II** .....	3
SW 441 Social Work with Communities .....	3
Criminal Justice Core Requirement* .....	3
<b>TOTAL CREDITS</b> .....	<b>123</b>

\*See Criminal Justice section for CJ core requirement courses.

\*\*Select either SW 409/410 or CJ 409/410 for the senior capstone project.

\*\*\*Students may substitute SW 423/SW 424 for CJ 423.

### **CURRICULUM—SOCIAL WORK MAJOR/ K–12 SCHOOL COUNSELOR CERTIFICATION Credits**

Students may elect to take the social work major with the school counselor certification track. This is accomplished by using the free electives to complete requirements for the school counselor certification, including the general education requirements. Students who follow the curriculum below will receive a BSW degree and a K–12 school counselor certification.

<b>Freshman Fall</b> .....	<b>16.5</b>
ENGL 101 Reading, Thinking, & Writing .....	3
FRS 101 Freshman Seminar .....	1
PSY 105 Introduction to Psychology .....	3
SW 107 Introduction to Social Work & Social Welfare .....	3
Developmental Course (if required)^ or ED 250 .....	3
Math/Science Elective 1 .....	3
Physical Education Elective 1 .....	0.5
<b>Freshman Spring</b> .....	<b>15.5</b>
ANTH 105 Cultural Anthropology .....	3
ED 650 Professional School Counseling Foundations .....	3
SOC 105 Introduction to Sociology .....	3
Humanities Elective 1 .....	3
Math/Science Elective 2 .....	3
Physical Education Elective 2 .....	0.5
<b>Sophomore Fall</b> .....	<b>15</b>
ED 250 Effective Instructional Practices & Delivery Methods^ (if not taken in freshman fall) or Free Elective .....	3
ED 653 Counseling Theories & Interventions .....	3
PSY 202 Child Psychology or PSY 211 Developmental Psychology .....	3
Humanities Elective 2 .....	3
Math/Science Elective 3 .....	3
<b>Sophomore Spring</b> .....	<b>15</b>
ED 1422 English Language Learners .....	3
Humanities Elective 3 .....	3
Humanities Elective 4 .....	3
Math/Science Elective 4 .....	3
<b>Junior Fall</b> .....	<b>15</b>
ED 651 Career Counseling across the Lifespan .....	3
SW 320 Generalist Social Work Practice with Individuals, Families, & Group 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
<b>Junior Spring</b> .....	<b>18</b>
ED 657 Ethical & Legal Issues in School Counseling .....	3
ED 659 Orientation to Professional Counseling .....	3
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
<b>Senior Fall</b> .....	<b>15</b>
ED 660 Collaboration & Inclusion .....	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** .....	3
SW 440 Social Work with Organizations .....	3
<b>Senior Spring</b> .....	<b>15</b>
ED 671 or ED 672 Internship in Counseling I or II .....	3
SW 410 Senior 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
<b>TOTAL CREDITS</b> .....	<b>122</b>

^Total credit count of 128 if developmental course is required.

\*For SW 409 or SW 410, students need to craft their capstone research project to incorporate a school-based research project around leadership. This should be done in consultation with the SW instructor. Collaboration with counseling program faculty is also required.

\*\*The social work major seeking school counselor certification will meet with the social work field coordinator to secure a social work field placement (SW 423/SW 424) that incorporates a K–12 school-based component.

**CURRICULUM—SOCIAL WORK MAJOR  
WITH FINE ARTS CONCENTRATION\*** **Credits**

Students may elect to take the social work major with a fine arts concentration. This is accomplished by using free electives to complete requirements for the fine arts concentration, including the general education requirements. Students who follow the curriculum below receive a BSW degree only.

<b>Freshman Fall</b> .....	<b>16</b>
SW 107 Introduction to Social Work & Social Welfare .....	3
ENGL 101 Reading, Thinking, & Writing .....	3
PSY 105 Introduction to Psychology .....	3
Developmental Course (if required) .....	3
FRS 101 Freshman Seminar .....	1
Science Elective 1 .....	3
Optional Performance Class*	
<b>Freshman Spring</b> .....	<b>15.5</b>
AS 111 Drawing I or AS 121 Painting I .....	3
ANTH 105 Cultural Anthropology .....	3
ENG 102 Advanced Composition & Literature .....	3
SOC 105 Introduction to Sociology .....	3
Math Skills Requirement (Science Elective 2) .....	3
PE 102 Physical Education 1 .....	0.5
Optional Performance Class*	
<b>Sophomore Fall</b> .....	<b>15.5</b>
MUS 101 History & Literature of Music I .....	3
AH 101 Art History I .....	3
SW 330 Human Behavior & Cultural Diversity I .....	3
Science Elective 3 (Math) .....	3
CJ/GWS/SOC/PSY Elective (200 Level) .....	3
PE 101 Physical Education 2 .....	0.5
Optional Performance Class*	
<b>Sophomore Spring</b> .....	<b>15</b>
ARTS 101 .....	3
SW 331 Human Behavior & Cultural Diversity II .....	3
100-level Studio Instruction or Dance .....	3
Science Elective 4 (Quantitative Reasoning) .....	3
300 level Art History course (w/ diversity content) .....	3
Optional Performance Class*	
<b>Junior Fall</b> .....	<b>15</b>
AH 102 Art History II or	
MUS 102 History & Literature of Music II .....	3
300-level AH or MUS course .....	3
SW 320 Generalist Social Work Practice	
w/ Individuals, Families, & Groups I .....	3
SW 341 Social Work History & Policy I .....	3
SW 350 Social Work Research Methods I .....	3
Optional Performance Class*	
<b>Junior Spring</b> .....	<b>15</b>
300 level Music History course .....	3
SW 321 Generalist Social Work Practice	
w/ Individuals, Families, & Groups II .....	3
SW 342 Social Work History & Policy II .....	3
SW 351 Social Work Research Methods II .....	3
SW/ARTS 360 Arts-Informed Social Work .....	3
Optional Performance Class*	
<b>Senior Fall</b> .....	<b>15</b>
300 level AH or MUS course .....	3
SW 409 Social Work Capstone I** .....	3
SW 420 Social Work Practice w	
w/ Individuals, Families, & Groups I .....	3
SW 423 Social Work Field Placement I*** .....	3
SW 440 Social Work with Organizations .....	3
Optional Performance Class*	

<b>Senior Spring</b> .....	<b>15</b>
SW 410 Senior Work Capstone II** .....	3
SW 421 Social Work Practice	
w/ Individuals, Families, & Groups II .....	3
SW 424 Social Work Field Placement II*** .....	3
SW 441 Social Work with Communities .....	3
ASC 400 Values Seminar (WE) .....	3
Optional Performance Class*	

**TOTAL CREDITS\*** **121**

\*Students may also enroll in dance and/or music performance classes. Students can earn three or more credits in these classes. However, such credits are only counted after a certain number of semesters are completed. Students need a minimum of 121 credits for the degree, not counting optional performance classes. Students should speak to their advisors about credit accumulation for dance and music.

\*\*In SW 409 & SW 410, students will need to craft their capstone research project to incorporate arts-informed social work practice. This should be done in consultation with the instructor.

\*\*\*The social work major with fine arts concentration student will meet with the social work field department to develop a social work field placement (SW 423/SW 424) that incorporates a field placement experience with a fine arts component. This may include the use of art therapeutic techniques such as music, movement, drawing, and painting with client populations.

**FIVE-YEAR BSW/MSW PROGRAM**

Eligible Widener BSW students may apply for the accelerated 5-year BSW/MSW advanced standing program as part of their BSW candidacy application. Admission occurs during the fall semester of the junior year and requires a GPA of 3.4 or higher. This program grants BSW students permission to take three MSW courses during their undergraduate studies that count toward their BSW degree, but does not grant admission to the MSW program. If, in their senior year, BSW students apply to the MSW program at Widener and get accepted, the graduate course credits (9 credits total) are subsequently transferred to the MSW program. This program enables students to complete a 30-credit MSW curriculum ladder instead of the regular 39-credit Advanced Standing program. This option both reduces the cost and time of graduate education.

**CURRICULUM—FIVE-YEAR BSW/MSW** **Credits**

<b>Freshman Fall</b> .....	<b>16</b>
SW 107 Introduction to Social Work & Social Welfare .....	3
ENGL 101 Reading, Thinking, & Writing .....	3
PSY 105 Introduction to Psychology .....	3
Developmental Course (if required) or Free Elective .....	3
Science Elective 1 .....	3
Freshman Seminar .....	1
<b>Freshman Spring</b> .....	<b>15.5</b>
ANTH 105 Cultural Anthropology .....	3
SOC 105 Introduction to Sociology .....	3
Humanities Elective 1 .....	3
Science Elective 2 .....	3
Free Elective .....	3
Physical Education Elective 1 .....	0.5



<b>Sophomore Fall</b> .....	<b>15.5</b>
Humanities Elective 2 .....	3
Social Science Elective 1 .....	3
Science Elective 3 .....	3
Free Electives .....	6
Physical Education Elective 2 .....	0.5
<b>Sophomore Spring</b> .....	<b>15</b>
Humanities Electives 3 and 4 .....	6
Science Elective 4 .....	3
Free Electives .....	6
<b>Junior Fall</b> .....	<b>15</b>
SW 320 Generalist Social Work Practice with Individuals, Families, and Groups I .....	3
SW 330 Human Behavior and Cultural Diversity I .....	3
SW 341 Social Work History and Policy I .....	3
SW 350 Social Work Research Methods I .....	3
Free Elective .....	3
<b>Junior Spring</b> .....	<b>15</b>
SW 321 Generalist Social Work Practice with Individuals, Families, and Groups II .....	3
SW 331 Human Behavior and Cultural Diversity II .....	3
SW 342 Social Work History and Policy II .....	3
SW 351 Social Work Research Methods II .....	3
MSW Elective* .....	3
<b>Senior Fall</b> .....	<b>15</b>
SW 420 Social Work Practice with Individuals, Families & Groups I .....	3
SW 423 Social Work Field Placement I .....	3
SW 409 Social Work Capstone I .....	3
SW 440 Social Work with Organizations .....	3
MSW Elective* .....	3
<b>Senior Spring</b> .....	<b>15</b>
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
MSW Elective* .....	3
<b>Subtotal Credits</b> .....	<b>122</b>
<b>Graduate with BSW</b>	
<b>Summer or Fall</b>	
SW 507 Personal & Professional Writing Module	
<b>Fall Semester</b> .....	<b>15</b>
SW 503 Interpersonal Processes .....	3
SW 630 Clinical Social Work Practice with Individuals .....	3
SW 633 Clinical Social Work Practice with Families .....	3
SW 657 Field Instruction III .....	3
MSW Elective .....	3
<b>Spring Semester</b> .....	<b>15</b>
SW 502 Human Behavior & the Social Environment II .....	3
SW 639 Clinical Practice Seminar .....	3
SW 658 Field Instruction IV .....	3
SW 636 Organizations & Program Development .....	3
SW 664 Treating Trauma .....	3
<b>Subtotal Credits</b> .....	<b>30</b>
<b>TOTAL CREDITS</b> .....	<b>152*</b>

**Graduate with MSW**

*Note: This is instead of the 39 credits required for regular advanced standing students – the accelerated students are saving 9 credits by doing them in their BSW junior and senior years.*

*\*Students may select from one of the following electives: SW 648, 655, 659, 663, 674, 680, or 683.*

## 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 PT program, visit [www.widener.edu/ipte](http://www.widener.edu/ipte).

### PRE-PHYSICAL THERAPY PATHWAYS IN THE HUMANITIES AND SOCIAL SCIENCES

Identified majors within the College of Arts and Sciences have an opportunity to pursue a pre-physical therapy pathway. Humanities and social science students can do so by completing their major requirements along with meeting the general prerequisite courses for the graduate program in physical therapy (see list below). Simply completing the specified courses does not guarantee admission into a graduate program. Students should consult with their undergraduate academic advisor or an advisor at the Institute for Physical Therapy Education for details about minimum grade requirements and conditions for completing a reserved seat admissions program.

#### Science Requirements

- Anatomy & Physiology: BIOL 121, 123, 122, 124
- Biology: BIOL 230
- Chemistry: CHEM 101, 103, 102, 104
- Physics: PHYS 121, 143, 122, 144

#### Social Science Requirements

- PSY 385
- Two most recent PSY electives
- Most recent ANTH or SOC elective

### PRE-PHYSICAL THERAPY PATHWAYS IN THE SCIENCES

Science students wishing to pursue pre-physical therapy concentrations can do so by completing their major requirements along with meeting the general prerequisite courses for the graduate program in physical therapy (see list below). Simply completing the specified courses does not guarantee admission into a graduate program. Details about minimum grade requirements for completing a reserved seat admissions program are in the following sections.

#### Science Requirements

- Anatomy & Physiology: BIOL 307 or 327, BIOL 303 or 325
- Biology: Most recent BIOL elective
- Chemistry: CHEM 146, 148, 255, 257 (BA) or CHEM 255, 257, 256, 258 (BS)
- Physics: PHYS 141, 143, 142, 144
- Statistics: BIOL 299

#### Social Science Requirements

- Two most recent PSY electives
- Most recent ANTH or SOC elective

### **THREE-PLUS-THREE RESERVED SEAT PROGRAM**

Undergraduate students may major in a variety of majors offered in the College of Arts and Sciences 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 curricula, 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 summer after their third year of study at the university. Students following these curricula must meet all requirements of their selected major as described in the sections of this catalog pertaining to the Science, Social Science, and Humanities Divisions. Students following these curricula must also satisfy the general education requirements. Please see the relevant sections of this catalog for details. Students who successfully complete the prescribed program of study and meet the prescribed requirements outlined in the reserved seat agreement retain a reserved seat in Widener's graduate physical therapy program.

To remain a part of the reserved seat program, the student's prescribed requirements include maintaining 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 at Widener University with a minimum grade of B (this does not include a B-). Students must also have a cumulative GPA of 3.3 or higher by the end of the fall semester prior to matriculating into the graduate program. Students who fail to meet these requirements can still apply for admission to the graduate physical therapy program. See "Alternate 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 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 their undergraduate major is conferred upon completion of the first year of graduate study. Students pursuing a pre-physical therapy pathway should consult regularly with an advisor in the physical therapy program in the School of Human Service Professions in addition to their science, social science, or humanities faculty advisor.

### **FOUR-PLUS-THREE RESERVED SEAT 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 College of Arts and Sciences has identified a variety of majors compatible with the pre-physical therapy four-plus-four program. The requirements and curricula information are described in the science, social science, and humanities areas of the Colleges of Arts and Science section of this catalog. 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 and meet the prescribed requirements retain a reserved seat in 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 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 pathways should consult regularly with their science, social science, or humanities 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 reserved seat 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 Admissions Coordinator of the Institute for Physical Therapy Education at [physicaltherapy@widener.edu](mailto:physicaltherapy@widener.edu). All applicants that are not in the Widener reserved seat programs must apply via the Physical Therapy Centralized Application Service (PTCAS). Review the physical therapy website for details, [www.widener.edu/ipte](http://www.widener.edu/ipte).

# 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.

## SCHOOL OF NURSING UNDERGRADUATE STUDENT 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 980 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. Non-native English speaking applicants born outside the United States but who have attended high school in the United States since the 9th grade must submit their official high school transcript and either the SAT or TOEFL. An interview may be required.

**CURRICULUM—NURSING: Full-Time BSN Program for Those Admitted Fall 2015 or Earlier Credits**

<b>Freshman Fall</b> .....	<b>14.5</b>
CHEM 105/106 General, Organic, & Biochemistry w/ Lab* . . .	4
ENGL 101 Reading, Thinking, & Writing** .....	3
PSY 105 Introduction to Psychology(F/S) .....	3
Freshman Seminar .....	1
Humanities Elective (F/S) .....	3
Physical Education Elective* .....	0.5
<b>Freshman Spring</b> .....	<b>16.5</b>
BIOL 121/123 Anatomy & Physiology I (Includes Lab) .....	4
ENGL 102 Literature & Critical Writing .....	3
SOC 105 Introduction to Sociology (F/S) .....	3
NURS 125 Introduction to Nursing (W, S) .....	3
Social Science 100-Level Elective (F/S) .....	3
Physical Education Elective* .....	0.5
<b>Sophomore Fall</b> .....	<b>16</b>
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
<b>Sophomore Spring</b> .....	<b>16</b>
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
ALLH 390 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.

<b>Junior Fall</b> .....	<b>16</b>
NURS 302 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
<b>Junior Spring</b> .....	<b>16</b>
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
<b>Senior Fall</b> .....	<b>16</b>
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 Nursing Practice III .....	1
Nursing Elective (W, S, F/S) .....	3
<b>Senior Spring</b> .....	<b>13</b>
NURS 445 Nursing Leadership (C) .....	5
NURS 485 Population Health (C, F/S) .....	5
NURS 475 Knowledge Synthesis for Nursing Practice IV .....	3

**TOTAL CREDITS 124**

\*Math 101 is a prerequisite for chemistry—or a SAT score of 530 or higher, ACT score of 21 or higher, or math placement score of 3 or higher.

\*\*Students in the university’s Honors Program take ENGL 103 plus one additional elective in lieu of ENGL 101 and 102.

+Veterans, incoming transfer students, 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 the 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.

\*\*\*Minor in a foreign language or social work.

Note: The School of Nursing, the College of Arts and Sciences, and the School of Human Service Professions have developed curricular plans to provide students the opportunity to complete a minor while obtaining a nursing degree. Contact the assistant dean of student services in the School of Nursing for more information.

**CURRICULUM—NURSING: Full-Time BSN Program  
for Those Admitted Fall 2016 and Later** **Credits**

<b>Freshman Fall</b> .....	<b>14.5</b>
CHEM 105/106 General, Organic, & Biochemistry w/ Lab* . . . . .	4
ENGL 101 Reading, Thinking, & Writing** .....	3
PSY 105 Introduction to Psychology(F/S) .....	3
Freshman Seminar .....	1
Humanities Elective (F/S) .....	3
Physical Education Elective* .....	0.5
<b>Freshman Spring</b> .....	<b>16.5</b>
BIOL 121/123 Anatomy & Physiology I (Includes Lab) .....	4
ENGL 102 Literature & Critical Writing .....	3
SOC 105 Introduction to Sociology (F/S) .....	3
NURS 125 Introduction to Nursing (W, S) .....	3
Social Science Elective (F/S) .....	3
Physical Education Elective* .....	0.5
<b>Sophomore Fall</b> .....	<b>16</b>
BIOL 122/124 Anatomy & Physiology II (Includes Lab) .....	4
NURS 202 Introduction to Gerontological Nursing (S) .....	3
PHIL 350 Ethics (F/S) .....	3
Sociology or Psychology 200-Level Elective (F/S) .....	3
Humanities Elective (F/S) .....	3
<b>Sophomore Spring</b> .....	<b>16</b>
BIOL 219/220 Microbiology w/ Lab .....	4
NURS 205/206 Pharmacokinetics & Medication Administration (L) .....	3
NURS 216 Nutrition in Health Care (F/S) .....	3
NURS 261/262 Health Assessment (L) .....	3
ALLH 390 Statistical Methods (F/S) .....	3
<i>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.</i>	
<b>Junior Fall</b> .....	<b>14</b>
NURS 302 Introduction to Informatics .....	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 374 Knowledge Synthesis for Nursing Practice I .....	1
<b>Junior Spring</b> .....	<b>17</b>
NURS 306 Pathopharmacology II .....	2
NURS 331 Medical Surgical Nursing II (C) .....	5
NURS 334 Family Focused Care of Children (C, F/S) .....	5
NURS 371 Research Design & Evidence-Based Nursing Practice (WE) .....	4
NURS 375 Knowledge Synthesis for Nursing Practice II .....	1
<b>Senior Fall</b> .....	<b>16</b>
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 Nursing Practice III .....	1
Nursing Elective (W, S, F/S) .....	3
<b>Senior Spring</b> .....	<b>13</b>
NURS 445 Nursing Leadership (C) .....	5
NURS 485 Population Health (C, F/S) .....	5
NURS 475 Knowledge Synthesis for Nursing Practice IV .....	3
<b>TOTAL CREDITS</b> .....	<b>123</b>

\*Math 101 is a prerequisite for chemistry—or a SAT score of 530 or higher, ACT score of 19 or higher, or math placement score of 3 or higher.

\*\*Students in the university's Honors Program take ENGL 103 plus one additional elective in lieu of ENGL 101 and 102.

+Veterans, incoming transfer students, 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 the 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.

\*\*\*Minor in a foreign language or social work.

Note: The School of Nursing, the College of Arts and Sciences, and the School of Human Service Professions have developed curricular plans to provide students the opportunity to complete a minor while obtaining a nursing degree. Contact the assistant dean of student services in the School of Nursing for more information.

**ACCELERATED BSN OPTION**

The accelerated BSN option at Widener University mirrors the traditional day program, but in an evening and weekend format. Students who have completed the prerequisite general education courses can enjoy the flexibility of completing upper-division BSN courses in five semesters. Classes, labs, and clinical experiences occur in the evening and on weekends. Students can maintain active involvement in campus activities, including student clubs and organizations.

**CURRICULUM—NURSING: Full-Time Accelerated  
BSN Program** **Credits**

<b>Fall I</b> .....	<b>13</b>
NURS 103 Nursing Seminar .....	1
NURS 125 Introduction to Nursing (W, S) .....	3
NURS 202 Introduction to Gerontological Nursing (S) .....	3
NURS 205/206 Pharmacokinetics & Medication Administration (L) .....	3
NURS 261/262 Health Assessment (L) .....	3
<i>Students must have a minimum cumulative average of 3.0 or higher to progress into Spring I and earn a C or higher in all required and elective courses; a C- is not acceptable.</i>	
<b>Spring I</b> .....	<b>14</b>
NURS 302 Introduction to Informatics .....	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 374 Knowledge Synthesis for Nursing Practice I .....	1
<b>Summer</b> .....	<b>17</b>
NURS 306 Pathopharmacology II .....	2
NURS 331 Medical Surgical Nursing II (C) .....	5
NURS 334 Family Focused Care of Children (C, F/S) .....	5
NURS 370 Research Design & Evidence-Based Nursing Practice (WE) .....	4
NURS 375 Knowledge Synthesis for Nursing Practice II .....	1
<b>Fall II</b> .....	<b>16</b>
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 Nursing Practice III .....	1
Nursing Elective (W, S, F/S) .....	3
<b>Spring II</b> .....	<b>13</b>
NURS 445 Nursing Leadership (C) .....	5
NURS 475 Knowledge Synthesis for Nursing Practice IV .....	3
NURS 485 Population Health (C, F/S) .....	5
<b>TOTAL CREDITS</b> .....	<b>73</b>

## SPECIAL ACADEMIC PROGRESSION 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. Students with a GPA of less than 2.90 at the end of the fall semester sophomore year may not progress to the spring semester nursing courses NURS205/206 and NURS261/262.
- Matriculated students may take a maximum of nine semester credits off campus. The associate dean of academic affairs or the assistant dean of students approval must be acquired for all courses taken off campus prior to the start of the class. A "Course Transfer Authorization" must be completed for all courses taken off campus. See *Undergraduate Student Handbook* for more details.
- NURS 205/206 and NURS 261/262 must be completed in the semester immediately preceding the start of the junior year. Sophomore students who do not progress but who have taken NURS 205/206 or NURS 261/262 are required to repeat those courses in the semester immediately preceding the junior year.

### 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. 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 who fail or withdraw from an upper division nursing course must repeat the course in the same semester it is offered in the following year. Students may not move forward to subsequent courses until all prior courses from the semester the student is enrolled is complete. If the course withdraw or failure occurs in the spring semester, senior year, the student must also repeat NURS 475 with the failed or withdrawn 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.
  - 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.
  - 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 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 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.

**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 as little as 12 months as a full-time student or in 3 years as a part-time student. Students can enter the program in any semester—fall, spring, or summer. Courses are delivered online to enable students to maintain full-time employment while completing the course of study. 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.

**PROGRAM OF STUDY FOR RN TO BSN STUDENTS**

<b>Liberal Studies/Sciences†</b> .....	<b>56</b>
Humanities Electives—must include:	
ENGL 102 Literature & Critical Writing .....	12
Social Science Electives—must include:	
Intro to Psychology and Intro to Sociology .....	12
Science Electives—must include:	
Human Anatomy & Physiology .....	12
Additional courses:	
ENGL 101 Reading, Thinking, & Writing .....	3
Statistics .....	3
Free Electives .....	14
<b>Nutrition in Health (NURS 216) or NLN Challenge</b> .....	<b>3</b>
<b>Pennsylvania RN license (33 bloc credits)</b> .....	<b>33</b>
<b>RN to BSN Courses††</b> .....	<b>30</b>
<i>Term 1 (9 credits)</i>	
NURS 442 Nursing Theories and Professional Practice** .....	3
NURS 446 Research Design for the RN** .....	3
NURS 447 Evidence-Based Practice for the RN** .....	3
<i>Term 2 (12 credits)</i>	
NURS 443 Population Health for the RN (W)* .....	6
NURS 444 Genetics and Genomics** .....	3
NURS 448 Gerontology for the RN** .....	3
<i>Term 3 (9 credits)</i>	
NURS 440 Leadership and Management for the RN** .....	6
NURS 441 Healthcare Policy for the RN* .....	3
<b>TOTAL CREDITS</b> .....	<b>122</b>

†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.

## 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.

## NURSES EDUCATED TOGETHER (NET) MATH 101 LIVING AND LEARNING COMMUNITY

The Math LLC is devoted to a select group of students currently enrolled in Math 101 to share common residential and academic experiences. Student academic success is supported through residential experiences in which LLC members share a particular interest in academics, social, and cultural issues and activities. LLCs bring academics into the residence halls through on-site classes, exclusive programming, and opportunities to engage with faculty. Students participating in LLCs experience an environment that is conducive to building a strong, interconnected peer support system that will serve the students throughout their academic careers. LLCs provide a unique living experience. Students apply to the Math 101 LLC 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 Math 101 during the fall of the freshman year are considered.

## 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](http://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	Sophomore	Junior	Senior
	Year	Year	Year	Year
CPR	—	—	\$60–90	—
Criminal check, drug testing, & child abuse clearance*	—	\$157	—	—
Student uniforms & equipment	—	\$250	—	—
Physical exams, immunizations	—	\$300	\$100	—
National Council of State Board of Nursing fees**	—	—	—	\$250
<b>Payable to Widener University</b>				
Membership in NSNA, SNAP, WUSNA	\$60	\$60	\$60	\$60
Testing fees	\$30	\$220	\$155	\$375
Nursing Clinical Fee	—	—	\$145	\$145
Nursing Technology Fee	\$23	\$65	\$155	\$65
NCLEX Review	—	—	—	\$275
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.*



# Undergraduate Courses

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\*Chinese, French, German, Italian, Japanese, Spanish, modern language general offerings

# ACCOUNTING

*Most 300- and 400-level courses require at least junior standing.*

## **ACCT 105 FINANCIAL ACCOUNTING (FORMERLY ACCT 204)**

In this course, students learn the steps in the accounting cycle leading up to the preparation and basic analysis of corporate financial statements. Students complete a comprehensive project that requires them to produce a journal, ledger, trial balances, income statement, retained earnings statement and balance sheet. They use accounting theory and practice as it falls within the framework of U.S. Generally Accepted Accounting Principles (GAAP). They receive a brief Introduction to International Financial Reporting Standards (IFRS) and be made aware of the opportunities within the accounting profession and the major organizations that influence and contribute to its body of knowledge, such as the FASB and SEC. Finally, ethical issues confronted by the accountant are also introduced and discussed. Guest speakers from public accounting and private industry address the students during the semester. Students may not receive credit for both ACCT 105 and ACCT 204. Prerequisites: Second-semester freshman standing or permission from the head of the Department of Accounting, Economics, and Finance. 3 semester hours

## **ACCT 205 MANAGERIAL ACCOUNTING**

One of the most interesting and exciting challenges of business organizations is how to manage, control, and reward the best use of the company's resources by its managers and employees to deliver great performance. This requires understanding how to measure the resources used in developing the company's products and services. In this course, students develop a strong understanding of how a company tracks the costs of building things and serving its customers. In addition, students develop the skills necessary to measure fixed versus variable costs, analyze profitability, and figure out when things are not going according to plan. Students also sharpen their knowledge of budgeting plans for the organization and how successful organizations plan for the future. Throughout the course, students continue to hone their problem solving skills while developing an understanding of how managerial accounting helps solve several types of business problems, including financial statement analysis, long term investment decisions, break-even analysis, and ethical issues in decision making. The course shows students how to analyze modern business organizations using real-world companies and provides visual aids, including specially prepared videos, to help students substantially sharpen their analytical skills. The course also introduces students to Bloomberg Market Concepts to enhance their understanding of important concepts in financial markets using Bloomberg terminals. Prerequisite: Sophomore standing, ACCT 105, or permission from the head of the Department of Accounting, Economics, and Finance. 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 105 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 105, 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 105, ACCT 205, and junior standing. 3 semester hours

## **ACCT 308 INTERMEDIATE ACCOUNTING I**

Students examine, in-depth, financial accounting theory and practice as it falls within the framework of U.S. Generally Accepted Accounting Principles (GAAP). Students will be able to prepare a comprehensive set of corporate financial statements and identify the limitations in such financial statements. They will obtain a detailed understanding of the accounting and reporting issues associated with the asset-side of the balance sheet. They will learn to further analyze and evaluate financial information including alternative methods of accounting permitted under GAAP. They will also gain a basic understanding of International Financial Reporting Standards (IFRS) and the convergence projects of the FASB and IASB. In addition, the students are made further aware of the opportunities within the accounting profession and the organizations that influence and contribute to its body of knowledge. Selected projects require the use of spreadsheet software. Guest speakers from public accounting speak to students about accounting careers. Prerequisite: ACCT 105 (formerly ACCT 204) and 205. Corequisite: MIS 180. 4 semester hours

## **ACCT 309 INTERMEDIATE ACCOUNTING II**

The course is a continuation of ACCT 308 where students will learn a wide range of issues faced in measuring a firm's financial status and performance. They will obtain a detailed understanding of the accounting and reporting issues associated with the liability and stockholders' equity-side of the balance sheet. They will further develop and strengthen their 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. Students will learn and understand such advanced financial reporting topics as, off-balance sheet financing, leases long-term debt, accounting for pensions, revenue recognition, income taxes, earnings per share, and the statement of cash flows. Guest speakers from public accounting speak to students about accounting careers. Prerequisite: ACCT 308 and MIS 180. A grade of "B" or better in ACCT 308 is required, or passing a proficiency exam administered by the Accounting, Economics and Finance Department. Students who earn a grade below a C in ACCT 308 are not eligible to take the proficiency exam. These students must retake ACCT 308 and earn a grade of "B" or better to enroll in ACCT 309. 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, standard costing, process costing, 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 105 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 and Quickbooks. Prerequisite: ACCT 105 and ACCT 205, and MIS 180. Corequisite: MIS 290. 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 105 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 105 and ACCT 205. 3 semester hours

#### **ACCT 402 ADVANCED ACCOUNTING CONCEPTS**

This course explores advanced topics in accounting that are crucial to understanding and analyzing financial statements and are therefore heavily tested on the CPA exam. These topics include accounting for business combinations, consolidated financial statements, financial instruments, foreign currency transactions, interim financial statements, and segment reporting; as well as governmental and not-for-profit accounting. As CPA review course materials are integrated throughout the course, students become familiar with the structure and content of the exam. Guest speakers provide a "real world" perspective of the importance and relevance of the subject matter. Prerequisite: ACCT 308 or permission of the department head of accounting, economics and finance. 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 105 and ACCT 205. 3 semester hours

#### **ACCT 405 FEDERAL INCOME TAXATION**

A study of the federal income tax law as related primarily to individuals, but also covering business activities in which an individual may become involved. Students will be taught skills that they can use throughout their career including the ability to learn to read Code and Regulations, to use critical thinking to decide how tax law should be applied, to solve client problems, and to research tax issues. Topics include the determination of what constitutes income, exclusions, deductions, credits and other tax and financial planning issues. Tax ethics will also be discussed. Prerequisite: ACCT 105 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 105 and ACCT 205. 3 semester hours

#### **ACCT 408 PRINCIPLES OF ESTATE PLANNING**

This course provides an overview of estate taxation and planning. The course covers the 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, as well as computation of the estate tax liability. 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) multi-level tax benefits of charitable giving. Prerequisite: ACCT 105 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 105 and ACCT 205. 3 semester hours

#### **ACCT 414 CASE STUDIES IN MANAGERIAL ACCOUNTING**

This course involves an in-depth study of selected topics in managerial accounting using a case method format. Students examine issues using both a conceptual and pragmatic approach. Outside readings from professional journals supplement the textbook material and are used as a vehicle for introducing new topics and reinforcing concepts addressed in the cases. Group presentations of cases are used throughout the course. Prerequisite: ACCT 105, ACCT 205, and junior standing. 3 semester hours

#### **ACCT 415 AUDITING, ATTESTATION, AND PROFESSIONAL RESPONSIBILITY**

This course introduces students to audit firms and the auditing process. Students engage in fundamental concepts, principles, and standards that guide the examination of financial statements. Students develop an in-depth understanding of auditor responsibilities and objectives, internal controls and risk assessment in evaluating the nature, timing and extent of audit evidence to support the audit opinion. Considerable attention is paid to the auditor's professional responsibilities, quality control and professional standards as they apply to audits of both public and non-public organizations. Students will explore ethical issues likely to be encountered by a CPA in audit practice are discussed regularly including the impact of Sarbanes-Oxley Act on the profession. Students will also learn techniques to investigate white collar crime and fraud. The opportunity to enhance a student's resume is provided through the documentation of a corporate procedure. Prerequisites: 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. Prerequisite: ACCT 105, 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 105 and ACCT 205. 3 semester hours

#### **ACCT 435 SELECTED TOPICS IN 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. These topics will be supported by hands-on computer experience using the Internet and SAS. Prerequisite: ACCT 105, ACCT 205, MIS 180, 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 105, 205, either 308 or 309, and junior standing. 3 semester hours

#### **ACCT 451 ACCOUNTING SEMINAR**

Students engage in quality research by participating in several hands on papers. First, the student obtains a strong overview of the research paper process by enhancing an existing paper working with another student. Next the student is encouraged to write a corporate "white paper" for a company they have targeted for employment. This analysis will prepare each student to navigate the interview process with the company by understanding how the corporation operates. Last the students conduct research focused on a major issue facing the accounting profession. With one-on-one guidance from the instructor, the student creates a paper for possible publication. Students are also encouraged to enter their paper in a competition, for a conference or in a peer-reviewed journal. Along with the instructor, the Widener Writing Center aides students in the development of their writing skills. This course is designed to empower students by helping them enhance their resume or enhancing their graduate school application. This is a writing enriched course. Prerequisites: 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. 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 introduces students to the study of human cultural diversity. By examining different cultural systems from around the world, students learn concepts and methods for investigating why humans think and behave the way they do. This course provides students with the competence to live and work with people from different cultural backgrounds. It also enables students to see the world through a different cultural "lens" and reflect critically on the cultural beliefs and practices that govern their own lives. Topics include race, ethnicity, nationalism, language, gender, sexuality, religion, warfare, political organization, economic systems, migration, healing, kinship, marriage, and the family. No prerequisite. 3 semester hours

#### **ANTH 204 BIOLOGICAL/PHYSICAL ANTHROPOLOGY**

This course introduces students to the study of human physical and biological diversity. It focuses on the ways culture and the environment have interacted to shape the evolution of ancient and modern humans. By examining the relationship between modern humans, non-human primates, and ancient hominid ancestors, students gain an understanding of how we developed the adaptations that define our species. This course will also introduce students to the processes that have led to biological variation among different human populations, such as differences in skin color, body form, eye shape, hair form, growth patterns, and susceptibility to disease. A two-hour lab gives students hand-on experience with the tools and techniques anthropologists use to study fossil remains, primates, genes, and other physical specimens. Meets the general education requirement for a science course with lab OR a social science elective. This course also fulfills the quantitative reasoning (QR) general education requirement. No prerequisite. 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 239 WOMEN AND DEVELOPMENT IN LATIN AMERICA (SAME AS SOC 239 AND GWS 239)**

This team-taught service-learning travel course engages students in thinking about the challenges of development in Latin America, with particular emphasis placed upon the gendered dimensions of both development theory and practice. Through a combination of readings, films, lectures, discussion, and travel to a developing region in Mexico, Central America, or South America where women play key roles in development, students will be challenged to understand the burdens placed on women in underdeveloped nations as well as the roles that women have played in that region's development. During all phases of this course, students are expected to reflect on their readings, service, and other experiences. 3 semester hours

**ANTH 241 EAST ASIAN CIVILIZATION (SAME AS GP 241)**

From Samurai to Anime, from the Opium Wars to the Vietnam Conflict, East Asian civilization has long been an object of fascination and fear in Europe and the United States. This course introduces students to the cultural diversity of Southeast Asia. Students will survey the religion, politics, economics, and art of the region and reflect critically on the cultural divide said to separate “the East” from “the West”. Using the theories and methods of anthropology, students will trace the cultural connections between ancient belief systems, like Buddhism, Taoism, and Confucianism, and modern cultural forms, such as Kung Fu movies, K-Pop, and Communism. No prerequisite. 3 semester hours

**ANTH 245 NATIVE AMERICANS: CULTURE AND CONQUEST**

This course surveys the fascinating culture and history of Native Americans. Students will come away with the knowledge and skills to address complex questions, such as: Who were the first Americans? When did they arrive and from where did they come? How did some Native American tribes, like the Maya, Aztec, and Inca, manage to construct large, complex civilizations, while others continued to live in small, mobile groups? How did contact with European colonists impact their traditional way of life? What are the challenges confronting contemporary Native Americans and what does their future hold? No prerequisite. 3 semester hours

**ANTH 246 RUM, RASTA, AND REVOLUTION**

The Caribbean region is known for its crystal clear waters, white sand beaches, and, most of all, cultural diversity. It is the region that gave birth to Calypso, Reggae, and Santería, where dreadlocked Rastafarians live alongside modern-day witches (brujas) and Voodoo priests who claim to have the power to raise the dead. The region’s key place in the history of the African slave trade and European colonialism infused it with a mixture of West African, Native American, European, and East Indian cultural traditions. This course introduces students to the tremendous cultural diversity of the Caribbean region and gives them an opportunity to understand the historical processes that made the region what it is today. No prerequisites. 3 semester hours

**ANTH 248 RUM, RASTA, AND REVOLUTION FIELD STUDY**

This course consists of a semester-long service-learning project that culminates with a trip to the Caribbean during the Spring Break holiday. Students collaborate with local community partners to complete valuable service while gaining firsthand experience exploring the culture and history of the Caribbean. Pre-/Corequisite: ANTH 246. 3 semester 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 lead 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 254 MAGIC, WITCHCRAFT, AND RELIGION**

From the beginning of time, humans have sought knowledge of the ghosts, spirits, gods, and demons they believe inhabit our world and govern our lives. Humans create elaborate beliefs and rituals to try to influence these supernatural beings, who are capable of bringing both wonderful blessings and tragic misfortune. This course introduces students to these beliefs and rituals- from magic to sorcery to divination to organized religious ritual- in order to discover what they can tell us about the lives of the people who practice them. No prerequisite. 3 semester hours

**ANTH 255 RACE AND RACISM (FORMERLY ANTH 208)**

This course examines how and why modern humans have come to classify one another by race. Students will learn the biological basis for the traits we use to define race, such as skin color, hair texture, eye color, nose shape, and stature. The course will then explore the ways that different societies have used race to determine how rights, privileges, and opportunities will be distributed. Students will compare the formation of the US racial hierarchy with those of other countries, past and present. No prerequisite. 3 semester hours

**ANTH 257 UNDER THE INFLUENCE: DRUGS AND ALTERED STATES IN SOCIETY**

This course examines the relationship between mind-altering substances and society. Topics include analyzing the historical, political and recreational use of drugs such as marijuana, cocaine, LSD, Methamphetamine and MDMA. Relevant anthropological frameworks will be employed to consider the traditional role of drugs in the customs and practices of non-Western peoples and how drug patterns have been influenced by processes such as globalization. This course also evaluates different drug policies and forms of enforcement, paying particular attention to the U.S. War on Drugs and its effects on the Western Hemisphere. Current literature and events will lead us to problematize the deadly heroin epidemic, controversial pharmaceutical products, doping in sports and other interesting topics related to the complex relationship between the human experience and drugs. No prerequisite. 3 semester hours

**ANTH 258 LEADERS, THE LED, AND THE EVOLUTION OF POLITICS**

What makes great leaders and why do people follow them? Leaders are not born; they learn what it takes to lead. Great leaders have certain qualities and skills that will make others want to follow them. However, leadership strategies that are highly effective in one culture may be useless in others. To be successful in the modern globalizing world, leaders must appreciate the value of a wide range of leadership methods. This course introduces students to the study of leadership in the cross-cultural perspective. Students investigate how people become leaders and examine the specific ways cultural factors impact people’s reactions to different leadership styles. No prerequisites. 3 semester hours

**ANTH 259 ANTHROPOLOGY THROUGH THE LENS**

From history to philosophy, to religion, to folklore, to art, to eating habits, much of what we know (or at least think we know) about other peoples and cultures comes from what we have seen in movies and films, but the accuracy of these films has a lot to do with who made them and why. In this course, students explore the politics of representation by examining a series of films that attempt to depict cultural “others.” This course introduces students to the basic theories and methods of visual anthropology. Students apply these by analyzing excerpts of commercial and ethnographic representations of culture in film. No prerequisite. 3 semester hours

**ANTH 260 WORD, SOUND, POWER: LANGUAGE IN THE HUMAN EXPERIENCE**

While virtually all animals communicate with one another, humans are the only species on earth with the capacity to create and use language. As a means of building and sharing knowledge, language has enabled mankind to survive and thrive in virtually every environment on this planet. This course introduces students to the field of linguistic anthropology in order to address the following questions:

What is language? How do humans acquire language? Where and when did written and spoken languages first originate? What can language tell us about the way people see themselves and the world? What is the difference between “standard” dialects and “slang”? How can language both empower and disempower? How do languages change over time? No prerequisite. 3 semester hours

#### **ANTH 261 URBAN ANTHROPOLOGY: CHESTER**

In this course, students embark on a guided exploration of the history and culture of the city of Chester, PA. Students learn the research methods employed by anthropologists working in modern urban centers and then partner with a community service organization in Chester to conduct their own original fieldwork. As participant-observers, students not only get firsthand experience interacting with local residents and investigating the culture of a community service organization, they also provide a valuable service to the city Widener calls “home.” No prerequisite. 3 semester hours

#### **ANTH 262 CHASING THE DREAM: LATINO EXPERIENCES IN THE UNITED STATES**

This course explores the varied experiences of Latinos in the United States of America. In this class, students become familiar with the dynamics of different Latino group(s) from the Latin American and Caribbean regions. Course material covers diverse nationalities and groups such as Mexicans, Salvadorians, Cubans, Colombians, Ecuadorians, Puerto Ricans and Dominicans. Particular attention is paid to the history that informs current politics and social dynamics of Latino lived realities in this country. We cover how themes and processes such as colonialism, language, identity and culture play an important role in understanding the relationship between the United States and the Latino population. Contemporary issues explored also include education, immigration, national identity and politics as we see these themes shape dialogue, debate, and culture. No prerequisite. 3 semester hours

#### **ANTH 382 RESEARCH METHODS IN ANTHROPOLOGY**

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 412 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 semester hours

#### **ANTH 412 SENIOR RESEARCH IN ANTHROPOLOGY**

Anthropology majors have the option of a semester-long research project, working with a faculty member, on a topic of their choosing. Alternatively, they can engage in a practicum placement, which culminates in a reflection paper and journal. Required of all majors in anthropology. Prerequisites: ANTH 382 and ANTH major. 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**

##### **SPECIAL TOPICS IN ANTHROPOLOGY**

Topics offered in response to student and/or faculty interest. 3 semester hours each

## **ART HISTORY**

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#### **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**

This course acquaints students 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 are 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 is 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**

This course looks at studies over the past twenty years that have re-evaluated 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. This course fulfills the requirements for the GWS major and minor. 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**

**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

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## ARTS

See courses listed under Fine Arts.

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## ARTS AND SCIENCES

**ASC 105 QUANTITATIVE REASONING  
IN EVERYDAY LIFE**

This course is intended to fulfill the quantitative reasoning requirement in the College of Arts and Sciences, particularly for non-science majors. The purpose of this course is for students to explore how numbers can be used and misused. Using examples from published sources such as print and Internet media, students evaluate the validity of conclusions drawn from numerical data. Students examine how data can be presented in different ways, including graphs and tables, to influence the reader. 2 lecture hours weekly. 1 semester hour

**ASC 390 WAYS OF KNOWING (HONORS)**

Students strive to understand how knowledge is constructed. To understand our complex world, students must develop a multidimensional consciousness of the human condition. This course explores these ideas using a case-study approach that concentrates specifically on Africa. Students explore the differences among science, religion, ethics, culture, and other ways of understanding our diverse world. Open only to students in the Honors Program in General Education. 3 semester hours

**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

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### 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 one 100-level studio art classes. 3 semester hours

## ASTRONOMY

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### ASTR 100 INTRODUCTION TO ASTRONOMY (FORMERLY ASTR 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

### ASTR 103 INTRODUCTION TO EARTH SCIENCE (SAME AS ESSC 103)

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. No prerequisites. 3 semester hours

### ASTR 104 THE GREAT ASTRONOMERS

This course is designed for students in any major who are interested in the lives and accomplishments of great astronomers. The course provides an historical approach to the gradual accumulation of astronomical knowledge. Students examine the theories and models proposed by astronomers in accordance with the current status of observations available during the astronomers' lifetimes. The course looks at the change in perspectives that occurred following the Copernican revolution, showing how some of the insights that followed were prefigured in early Greek astronomy. This course lays a foundation for understanding some of the major themes in current astronomical theories. Prerequisite: none. 3 hours lecture. 3 semester hours

### ASTR 110 ASTRONOMY LABORATORY (FORMERLY ASTR 118)

This laboratory course is designed to complement ASTR 100. 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: ASTR 100. 2 hours laboratory. 1 semester hour

### ASTR 113 EARTH SCIENCE LABORATORY (SAME AS ESSC 113)

Lab associated with ASTR 103. Selected laboratory and/or field exercises related to appropriate text topics on planet Earth. No prerequisites. Corequisite: ASTR 103. 2 lab hours weekly. 1 semester hour

### ASTR 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 Widener Observatory 16-inch reflecting telescope. For non-science majors in the Honors Program. 3 semester hours

### ASTR 200 ASTRONOMY AND ASTROPHYSICS (FORMERLY ASTR 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. Prerequisite: PHYS 161. Corequisite: MATH 131 or MATH 141. 3 hours lecture. 1 hour observing. 3 semester hours

### ASTR 205 FRONTIERS OF ASTRONOMY

This course is designed for students in any major who are interested in the rapidly expanding field of our astronomical knowledge, including the origins of the universe. The course provides introductory coverage of the recent history of astronomy, especially cosmology, and brings students up to date with current fields of investigation in the solar system, the galaxy, and the universe itself. Some elementary facets of theories that changed physics during the 20th century will be addressed in a non-mathematical way. Prerequisite: one introductory science course in ASTR, BIOL, CHEM, ESSC, ENVR, or PHYS, or permission of the instructor. 3 hours lecture. 3 semester hours

### ASTR 207 LIFE IN THE UNIVERSE

This course is designed for students in any major who are interested in the nature of life, especially the current intriguing possibility of the existence of extraterrestrial life. The course provides an introductory coverage of topics in the fields of astronomy, biology, chemistry, and geology to explore profound scientific questions about astrobiology, including "How did life begin on Earth?" "What are the most extreme



forms of life currently known?" and "Is it reasonable to imagine life beyond Earth?" Prerequisite: one introductory science course in ASTR, BIOL, CHEM, ESSC, ENVR, or PHYS, or permission of the instructor. 3 semester hours

**ASTR 210 ASTRONOMY AND ASTROPHYSICS LABORATORY (FORMERLY ASTR 278)**

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: ASTR 200. 1 semester hour

**ASTR 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, ASTR 200, MATH 241 and CSCI 131 or equivalent. 3 hours class. 3 semester hours

**ASTR 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: ASTR 200. 3 hours lecture/laboratory/projects. 3 semester hours

## **BIOCHEMISTRY**

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**BCH 102 BIOCHEMISTRY SEMINAR I (FORMERLY BIOCHEMISTRY SEMINAR II)**

This course enhances biochemistry majors' understanding of the biochemistry discipline. The course involves active learning strategies, student presentations, guest lectures, field trips, and other activities designed to acquaint students with and promote understanding of the discipline. This course may not be used to satisfy the science general education requirement. Prerequisite: biochemistry major and SCI 190 or permission of the instructor. 2 hours lecture. 1 semester hour

**BCH 301 BIOCHEMISTRY SEMINAR II (FORMERLY 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. Prerequisite: BCH 451. 2 hours lecture. 1 semester hour

**BCH 302 BIOCHEMISTRY SEMINAR III**

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, BCH 451/453, 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 designed for biochemistry, ACS-certified chemistry, and pre-health profession students. The major goals of the course are (1) to introduce the language of biochemistry, (2) to provide an understanding of the physical, chemical, and biological context in which biochemistry takes place, (3) to develop problem solving and analytical analysis skills, and (4) to develop the ability to work in teams and small groups. The course provides the structural framework of biochemistry through examination of the molecular components of the cell and protein dynamics. The class discusses the thermodynamics of biological systems, amino acids, and protein structure, carbohydrates, lipids and membrane structure, membrane transport systems, and enzyme dynamics-kinetics and mechanisms of catalysis. The course utilizes an active learning method that poses problems that require critical thought, research, and collaboration within small learning groups. A strong background in general and organic chemistry is required. Additionally, a prior or concurrent biology course is highly recommended. The Biochemistry Department recommends a C or better in CHEM 145, 146, 147, 148, 255, 256, 257, and 258. Prerequisite: CHEM 256. Corequisite: BCH 453. 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. No prerequisites. 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. No prerequisites. 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. No prerequisites. 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. Fulfills the general education requirement in science. No prerequisites. 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. No prerequisites. 3 hours lecture. 3 hours lab. 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. No prerequisites. 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. No prerequisites. 3 hours lecture. 3 semester hours

### **BIOL 118 NEUROANATOMY, FUNCTION, AND DISEASE: HOW YOUR BRAIN WORKS (HONORS)**

The brain is a complex organ that is the center of the human nervous system. The wide array of human behaviors is a function of how the brain receives, processes, and responds to sensory input from our environment. This course explores the anatomy of the brain and how that anatomy powers human brain function. Neurological diseases

are examined in the context of the physiological function of nervous tissue. No prerequisites. 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, CHEM 101–103, or CHEM 145–147. 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 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 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 biology curriculum, focuses on the cellular processes common to all life. Topics include biochemistry, cellular organization, and membrane structure and function. Additionally, energy metabolism, including cellular respiration and photosynthesis are examined in detail. Special attention is given to the processes comprising the central dogma of molecular biology (DNA replication, transcription, and translation), with a focus on gene expression. In the laboratory, students are trained in experimental design and basic molecular biology techniques, including DNA and protein analysis. Experiments are inquiry-based and designed to reinforce the concepts learned in lecture. Prerequisite: BIOL 161, 162, and CHEM 102 or 146 (or permission of the 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 STATISTICS**

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. The laboratory portion is dedicated to statistical methods and their application. 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. Fulfills one interorganismal biology elective. 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 MOLECULAR BIOLOGY OF THE CELL**

This course for pre-medical students and biology and biochemistry majors focuses on the current understanding of cellular structure and function. Emphasis is placed on specific cellular processes and the molecular interactions that govern them. The consequences of cellular dysfunction, including the development of cancer and other diseases are discussed in depth. The course employs primary journal articles, and discussion revolves around the analysis of experimental results. There is a focus on experimental design, both in the lecture and laboratory. Laboratory topics include microscopy, cellular responses to inhibition of normal cellular processes, and the study of cancer cell behavior. Fulfills one cell and molecular biology elective. 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. Fulfills one organismal biology elective. Prerequisite: BIOL 261 and CHEM 255. 3 hours lecture. 3 hours laboratory. 4 semester hours

#### **BIOL 305 NEUROBIOLOGY**

Neurobiology is an upper-level biology course that explores the structure and function of the nervous system of humans and other animals. Topics include the history of neuroscience, cellular and molecular basis for cell signaling, neuroanatomy, sensory and motor systems, learning and memory, and neural mechanisms involved in behavior. The course emphasizes how the nervous system is built, how it changes with experiences during life, how it functions in normal behavior, and how it is disrupted by injury and disease.

Laboratory activities include a dissection of preserved brain, staining and mounting brain tissue onto slides, and analysis of brain tissue at the cellular level. Fulfills 1 organismal biology elective. Prerequisites: BIOL 161, 162, 165, 261. 3 hours lecture and 3 hours lab. 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. Fulfills one cell and molecular biology elective. 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. Fulfills one organismal biology elective. Prerequisite: BIOL 262. 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. Fulfills one organismal biology elective. 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. Fulfills one organismal biology elective. Prerequisite: BIOL 262 or permission of instructor. 3 hours lecture. 3 hours laboratory. 4 semester hours

#### **BIOL 310 MOLECULAR BIOLOGY OF THE GENE**

This course for pre-medical students and biology and biochemistry majors focuses on the molecular mechanisms that mediate the processes comprising the Central Dogma of Molecular Biology. Attention is given to prokaryotic and eukaryotic gene expression mechanisms and the molecular interactions that mediate them. A theme of the course is the study of how these gene regulatory mechanisms lead to significant phenotypic complexity in eukaryotes, including mammals. Analysis of the seminal experiments that led to the current understanding of gene regulation is a strong focus of the course and includes critical reading of primary journal articles. There is a focus on experimental design, both in the lecture and laboratory. Laboratory topics include molecular cloning techniques and gene expression analysis. Fulfills one cell and molecular biology elective. Prerequisite: BIOL 262 and CHEM 255. 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. Fulfills one organismal biology elective. 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. Fulfills one interorganismal biology elective. 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. Fulfills one interorganismal biology elective. 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. Fulfills one cell and molecular biology elective. Prerequisite: BIOL 262 and CHEM 255. 3 hours lecture. 3 hours laboratory. 4 semester hours

**BIOL 316 MOLECULAR EMBRYOLOGY**

Students examine the molecular basis of embryological development using examples taken from a small subset of model organisms. Emphasis is placed on recent experimental findings and critical readings from current scientific literature. Relationships between development and evolution are considered. In the laboratory, students design and conduct investigations in gene expression and developmental mechanisms. Fulfills one cell and molecular biology elective. Prerequisites: BIOL 262 and 299, CHEM 255 and 257. 6 hours integrated laboratory and lecture 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 318 EVOLUTION OF SEX**

This course explores the relationship between sexual reproduction and evolutionary theory in a diverse array of organisms and sexual systems. Course topics include the origin and maintenance of sex, costs and benefits of sex, and conflicts of interest between genders. Class discussions focus on critical papers in the primary literature. The laboratory includes student-designed experiments on mate

choice and sexual selection. Fulfills one interorganismal biology elective. Prerequisite: BIOL 262. 3 hours lecture. 3 hours laboratory. 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. Fulfills one cell and molecular biology elective. 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. Fulfills one cell and molecular biology elective. Prerequisite: BIOL 261. 3 hours lecture. 3 hours laboratory. 4 semester hours

**BIOL 324 HORMONES AND BEHAVIOR**

Hormones and Behavior is an upper-level biology course that covers topics ranging from the molecular aspects of hormones and their receptors (synthesis, structure, function, location), to behaviors and physiological responses affecting and affected by hormones. Students study topics such as the hormonal basis of sex differences, reproductive and parenting behavior, and cognitive disorders. The lab component focuses on a select group of topics such as the effects of hormones on immune system development and social behavior. The lab concludes with a student presentation on topics of interest in the field of hormones and behavior. Fulfills 1 organismal biology elective. Prerequisites: BIOL 161, 162, 261, and 262. 3 hours lecture. 3 hours lab. 4 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. This course facilitates 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. Fulfills one organismal biology elective. 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. Fulfills one cell and molecular biology elective. 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. Fulfills one organismal biology elective. Prerequisite: BIOL 262. 3 hours lecture. 3 hours 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. Fulfills one interorganismal biology elective. 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 345 BIODIVERSITY: EVOLUTIONARY ECOLOGY, BIOINFORMATICS, AND CONSERVATION BIOLOGY**

This course facilitates students' understanding and appreciation of (1) the incredible diversity of Earth's biota, especially that found in neotropical Central and South American habitats in comparison to southeastern Pennsylvania; (2) the prodigious and intricate processes of evolutionary ecology from which this biodiversity emerges; (3) direct engagement in the measurement of biodiversity using methods of DNA barcoding and other bioinformatics methods; (4) engagement with the archiving and preservation of specimens at internationally recognized natural history museums in Philadelphia and Latin America; and (5) perspectives on human land use, development, and international efforts at conservation and management for biodiversity preservation spanning urban Chester, PA, and Latin

America. Fulfills one interorganismal biology elective. Prerequisite: BIOL 262 or permission of the instructor. 3 hours lecture, 3 hours lab. 4 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. Fulfills one interorganismal biology elective. Prerequisites: BIOL 261 or instructor's permission. 3 hours lecture. 6 hours laboratory. 4 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 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). 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

#### **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. Prerequisites: Junior or senior standing and prior completion of BIOL 299. Credit to be arranged

#### **BIOL 188, 288, 388, 488**

##### **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 320 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. This course may count as an accounting elective. Prerequisites: Junior standing. 3 semester hours

## **BUSINESS LAW**

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### **BLAW 250 LEGAL AND ETHICAL ENVIRONMENT OF BUSINESS (FORMERLY BLAW 150)**

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. Students may not receive credit for both BLAW 150 and BLAW 250. Prerequisites: Sophomore standing. 3 semester hours

### **BLAW 260 BUSINESS LAW**

This course is designed to supplement BLAW 250 in providing the necessary legal education for the accounting major, and is also highly suggested for all other students, especially other business majors. The course covers many of those legal areas that affect a business in daily operations. Among the topics included are an in-depth treatment of contract law, the Uniform Commercial Code, and debtor-creditor relationships. The course is offered only in the spring semester. Prerequisites: Sophomore standing. Students interested in taking the CPA exam should take this course. 3 semester hours

### **BLAW 280 SPORTS AND THE LAW (FORMERLY SMGT 280)**

This course includes an analysis of the legal process within the sport enterprise. A historical overview of the changes in sport law and the factors that have influenced them are discussed. Additionally, there is an in-depth analysis of contract law, tort law, constitutional law, administrative law, antitrust law, labor law, collective bargaining, and arbitration as it relates to sports. Issues dealing with both amateur and professional athletics are included. Among the more recent developments being studied are discrimination in amateur athletics and the role of free agency in professional sports. The approach used includes lectures, discussions, class presentations, guest lectures, 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**

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*For chemistry majors and minors, 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 a C- 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. 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. 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, and enzymes. 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 120 SUSTAINABLE CHEMISTRY**

This course is open to all students who have an interest in sustainability and the role of chemistry in the environment and a sustainable world. The course introduces basic chemical concepts through their relationship with our natural world using a triple-bottom line and cradle-to-cradle approach. The chemical topics discussed include matter, chemical nomenclature, reactivity, atomic theory, molecular structure, stoichiometry, energy relationships, solutions,

solubility, acids and bases, radiation, electrochemistry, and polymers. These topics are broached using the following environmental issues: air pollution, the ozone layer, global climate change, energy, water, acid rain, nuclear power, alternative energy, and recycling. Prerequisite: MATH 101 or at least Level 3 on the Mathematics Assessment. 3 semester hours

#### **CHEM 145 GENERAL 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**

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**

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**

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, <sup>1</sup>H- and <sup>13</sup>C-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, <sup>1</sup>H- and <sup>13</sup>C-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 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. Prerequisites: MATH 131 or 141, CHEM 255, CHEM 257. Corequisite: CHEM 367. 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 255 or permission of instructor. Corequisites: CHEM 368. 3 class hours. 3 semester hours

**CHEM 367 ANALYTICAL CHEMISTRY LABORATORY**

The core of this laboratory course will focus on analyzing a diverse array of samples and matrices (biological, chemical, environmental, agriculture, and others) using classical analytical quantitative methods of analysis. Sampling, experimental design, data reduction methods, and computer applications are also included. Corequisite: CHEM 365. 3 laboratory hours. 1 semester hour

**CHEM 368 INSTRUMENTAL ANALYSIS LABORATORY**

This laboratory focuses on the optimization and application of different instrumental techniques, including computer interfacing, spectroscopy, chromatography, and electrochemistry. Emphasis is placed on instrumental techniques used for environmental and clinical applications. Computers are used extensively for analyzing and presenting data. Corequisite: CHEM 366. 3 laboratory hours. 1 semester hour

**CHEM 375 INORGANIC CHEMISTRY**

This course presents an introduction to the chemistry of the elements with a focus on chemical bonding, periodic properties, and the chemistry of metals and non-metals. This course is intended to provide knowledge of the fundamental properties of important elements and their compounds. Major topics to be covered include the solid state, coordination compounds, materials chemistry, and organometallic chemistry. Prerequisites: CHEM 145–148, 255, and 257. 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, 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, 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. Pre- or corequisites: CHEM 385 and 386. 3 hours weekly. 1 semester hour

**CHEM 390 CHEMICAL LITERATURE**

This course provides an introduction to the organization and utilization of chemical literature and software. Traditional (e.g., books) and online/electronic (e.g., Scifinder) techniques for information management are examined. The main focus of the course involves the preparation of a research paper on a topic of the student's choosing and an oral presentation of the research topic to the class near the end of the semester. 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, 258, and 390. 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 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 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

366, 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 375 and 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 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: CHEM 390, 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**

**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 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, ETHICS, AND CONTEMPORARY ISSUES**

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 (W)**

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 VIDEO PRODUCTION I**

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 AND 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 Widecast 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 (W)**

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**

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. 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 340 LEADERSHIP COMMUNICATION**

Strong leadership is the cornerstone of every successful organization. While most of us can name common qualities shared among leaders, defining leadership is a challenging task. Articulating, comprehending, and responding to leadership issues requires keen communication skills. Leadership involves a number of interrelated qualities, skills, and philosophies. This course explores the transient and long-term nature of leadership within groups and organizations. We also focus on individual traits shared by leaders. No prerequisites. 3 semester hours

**COMS 345 GENDER & COMMUNICATION**

This course evaluates the role of communication and how cultural expectations are transmitted (and continually reproduced) through language, non-verbal communication, and social traditions. Students study historical movements and current research in gender communication to gain an informed appreciation of the social and personal

roles of gender. This course fulfills the requirements for the GWS major and minor. 3 semester hours

### **COMS 360 VIDEO PRODUCTION II**

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 PR EVENT PLANNING AND CAMPAIGNS**

This course reviews and evaluates major trends and successful business practices in event planning management. Students study public relations case studies and manage a portfolio of events for clients throughout the semester. Students analyze their work through communication theory from public relations, interpersonal and organizational communication. Prerequisite: COMS 275 or COMS 280. 3 semester hours

### **COMS 380 IMC CAMPAIGNS**

This course reviews and evaluates various strategies and case studies in understanding advertising/public relations problems and solutions. Student teams design their own IMC (integrated marketing communications) campaign for real-life clients, in real time, by incorporating various IMC tools. Prerequisite: COMS 275 or COMS 280. 3 semester hours

### **COMS 382 COMMUNICATION RESEARCH (W)**

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. No prerequisites. 4 semester hours

### **COMS 384 VISUAL EFFECTS IN FILM AND TELEVISION**

Visual effects have become ubiquitous in the television and film industries. This course examines the process of planning, designing, and producing visual effects for the television and film industry. Topics include visual effect formats and structure as framework for visual effects in a film/video production. Adobe After Effects is a premier software package used in the television and film industry. Students learn and use Adobe After Effects to complete visual effects coursework assignments. At the conclusion of the course, students will have planned and completed various visual effects. The class is conducted as a lecture laboratory workshop with all students designing and producing visual effects and constructively studying and critiquing the effectiveness of visual effects. Does not fulfill the social science general education requirement. Prerequisite: COMS 260. 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**

These courses serve as a capstone experience for the communication studies student. Students work in teams to create communication materials for clients. Students perform primary and secondary research to guide their choices. Both semesters must be completed successfully. 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 project 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**

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. Credit may not be received for both CSCI 131 and CSCI 151. 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**

This course involves 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 INTRODUCTION TO COMPUTER SCIENCE I**

This is the first course in a two-semester sequence that introduces students to algorithmic problem-solving and programming in a high-level language. The course covers the fundamentals of imperative programming: basic data types, arithmetic, Boolean logic, conditional statements and loops. Students gain experience solving problems through programming by writing and testing their own code in weekly lab sessions. The course also includes an introduction to the Linux operating system. No previous experience with programming

is required. Credit may not be received for both CSCI 151 and CSCI 131. 3 hours lecture; 3 hours laboratory. 4 semester hours

**CSCI 152 INTRODUCTION TO COMPUTER SCIENCE II**

This course is the continuation of CSCI 151. Topics include functions, formal and actual parameters, and one- and two-dimensional arrays. Credit may not be received for both CSCI 143 and CSCI 152. Prerequisite: CSCI 151. 3 hours lecture; 3 hours laboratory. 4 semester hours

**CSCI 175 INTRODUCTION TO GAME DESIGN**

Basic concepts of game design are introduced, including game genres, rules, strategies, core mechanics, game animation and simulation, multiplayer and online games. The course is centered on the development of working games. A variety of projects are assigned throughout the semester. No previous experience with programming is required. 3 semester hours

**CSCI 200 DATA MINING (SAME AS DMI 200)**

This is an introductory course on data mining. Data mining is a relatively new field that refers to the process of exploration and analysis of large quantities of data in order to discover meaningful patterns and knowledge. The course focuses on predictive analytics algorithms and computational methods to discover and report influential and meaningful patterns in data and predict future behavior. Prerequisites: MATH 117 or MATH 120 or MATH 131, or MATH 141. 3 semester hours

**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 311 MOBILE APP DEVELOPMENT**

This course introduces students to the design and implementation of apps for mobile devices. Students learn how to design and construct a user interface using common components such as buttons and layouts. Students also learn how to implement the program logic through source code. Concepts are introduced and reinforced through a series of lab projects. By the end of the course, students will have created an app of their own design. Prerequisite: CSCI 131 or CSCI 143 or CSCI 152. 3 semester hours

**CSCI 329 BIOINFORMATICS**

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 257 and 258 or CSCI 247 and 248. 3 hours lecture. 3 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 257 and 258 or CSCI 247 and 248. 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 parallelizing 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 257 and 258 or CSCI 247 and 248. 3 semester hours

**CSCI 350 PARALLEL COMPUTING II**

A continuation of CSCI 349 Parallel Computing I. More advanced topics of parallel computing are discussed. This course also emphasizes more applications of parallel computing. At the end of the course, every student is required to complete a project for solving some problem pertaining to his/her academic field of study. Prerequisite: CSCI 349. 3 semester hours

**CSCI 355 ARTIFICIAL INTELLIGENCE I**

Basic concepts of tree searching, heuristic search, game playing, first order logic knowledge representation, and automated reasoning are introduced in conjunction with a thorough study of programming in LISP. Recursion is emphasized. Logic programming is also discussed. Prerequisites: PHIL 120 and CSCI 257 and 258 or CSCI 247 and 248. 3 semester hours

**CSCI 356 ARTIFICIAL INTELLIGENCE II**

Various areas of artificial intelligence are introduced including vision processing, natural language processing, advanced and current topics in expert systems, mathematical theorem proving, machine learning, and neural network. Prerequisite: CSCI 355. 3 semester hours

**CSCI 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 257 and 258 or CSCI 247 and 248. 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 257 and 258 or CSCI 247 and 248. 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 cryptanalysis tools. Before modern cryptographic algorithms are discussed in detail, an overview of the classical encryption algorithms is given. Both symmetric (private key) and asymmetric (public key)

encryption schemes are analyzed. The course also focuses on methods and algorithms for data integrity and authenticity and protection of information. Prerequisites: CSCI 131 or 151; MATH 151 or PHIL 120. 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 257 and 258 or CSCI 247 and 248. 3 semester hours

#### **CSCI 393 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, evidence acquisition, and data decryption. Students learn investigative and analytical techniques to acquire and protect potential legal evidence. The various laws and regulations dealing with computer forensic analysis are discussed. Students are introduced to the emerging international standards for computer forensic analysis, as well as a formal methodology for conducting computer forensic investigations. Prerequisites: MATH 151 or PHIL 120 or PHIL 105, and CSCI 131 or CSCI 143 or CSCI 151. 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 257 and 258 or CSCI 247 and 248. 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 257 and 258 or CSCI 247 and 248. 3 semester hours

#### **CSCI 435 DATABASE SYSTEMS II**

The contents of this course include the theory of expert systems, logic programming and database systems, and their application to science problems. Emphasis is placed on new ideas and general concepts of knowledge base systems, including principles, architectures, techniques and tools, algorithms for efficient processing of queries, heuristic search in problem solving, inferences and reasoning, and current topics in database systems. Prerequisite: CSCI 434. 3 semester hours

#### **CSCI 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 257 and 258 or CSCI 247 and 248. 3 semester hours

#### **CSCI 452 OPERATING SYSTEMS II**

Continuation of Operating Systems I. Source-code level study of the kernel of an operating system, such as UNIX. Distributed and real-time operating systems, virtual machines, reliability, security, performance analysis. Lab assignments include performance measurement with software and hardware monitors. Prerequisite: CSCI 451. 3 semester hours

#### **CSCI 462 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**

##### **SPECIAL TOPICS IN COMPUTER SCIENCE**

Topics offered in response to student and/or faculty interest. 3 semester hours each

## **CREATIVE WRITING**

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#### **CRWR 153 INTRODUCTION TO CREATIVE WRITING I**

Focused on the genres of fiction and creative nonfiction, CRWR 153 is one of two courses that introduces students to the discipline of creative writing. Students study works by classic and contemporary short story writers and essayists, using them as models for their own fiction and creative nonfiction. Through activities such as writing exercises, craft analyses, and classroom workshops, students hone creative writing skills, as well as understand what it takes to establish a writing life of their own. 3 semester hours

#### **CRWR 154 INTRODUCTION TO CREATIVE WRITING II**

Focused on the genres of poetry and drama, CRWR 154 is one of two courses that introduces students to the discipline of creative writing. Students study works by classic and contemporary poets and dramatists, using them as models for their own poetry and plays. Through activities such as writing exercises, craft analyses, and classroom workshops, students hone creative writing skills, as well as understand what it takes to establish a writing life of their own. 3 semester hours

#### **CRWR 305 CREATIVE NONFICTION**

This course is an in-depth study of creative nonfiction. Students work on enhancing writing skills in such areas as journal writing, autobiography/memoir, literary journalism, biography, and history. Prerequisite: CRWR 153 or permission of instructor. 3 semester hours

#### **CRWR 306 ADVANCED FICTION WRITING**

This course explores in detail the fundamental technical aspects of fiction writing: characterization, point of view, imagery, setting, dialogue, plot, and theme. Using classic and contemporary short fiction as models, students complete a variety of exercises and write and revise full-length stories. Prerequisite: CRWR 153 or permission of instructor. 3 semester hours

**CRWR 307 ADVANCED POETRY WRITING**

This course explores in detail the fundamental aspects of poetry writing: imagery, figurative language, diction, lineation, meter, and form. Using classic and contemporary poetry as models, students compose a variety of traditional and free verse poems. Prerequisite: CRWR 154 or permission of instructor. 3 semester hours

**CRWR 308 PLAYWRITING**

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: CRWR 154 or permission of instructor. 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 Jonathan Swift, Eugene Ionesco, Flannery O'Connor, David Sedaris, and Anne Sexton provide models for students' work. Prerequisite: CRWR 153 and CRWR 154 or permission of instructor. 3 semester hours

**CRWR 361 WRITING FOR PUBLICATION**

In this course, students examine developments in contemporary creative writing. Small press and major press work are read. By examining these works as models for student writing, students learn how to write for and publish in various kinds of publications. In addition, students learn about the history of literary publishing and trends that may shape the future of publishing and further connect students with the literary community. Students submit work to magazines and presses. Prerequisites: 300-level CRWR course or permission of instructor. 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, flash writing, setting, and character. Prerequisite: CRWR 153 and CRWR 154 or permission of instructor. 3 semester hours

**CRWR 405 WRITING PRAXIS**

A course for creative writing majors to earn credit while gaining practical experience working under the supervision of professionals in relevant fields. Interested students must consult with the instructor to approve the proposed experience and, if approved, to determine the appropriate requirements and schedule of appropriate communication between the student, instructor, and professional supervisor. The course does not satisfy a humanities or upper-level creative writing requirement. It may be repeated for additional elective credit. 3 semester hours

**CRWR 409 SENIOR SEMINAR (FOR CREATIVE WRITING MAJORS ONLY)**

This capstone course gives 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. Prerequisite: Grades of C or better in all required creative writing courses. 3 semester hours

**CRWR 188, 288, 388, 488****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**

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. This course fulfills the requirements for the GWS major and minor. 3 semester hours

**CJ 235 DIVERSITY IN CRIMINAL 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 240 DOMESTIC TERRORISM**

This course explores domestic terrorism, or terrorism committed by Americans on American soil. Students study the history and case studies of domestic terrorism, such as the Oklahoma City bombing, eco-terrorists, the Unabomber crime spree, the DC Snipers, and political assassinations. This course also focuses on hate groups and militias (nearly 1,000 hate groups are active in the United States).



Students examine the U.S. governmental responses to cults, hate groups, and militias, including law enforcement and state-sponsored violence. Students learn the organizational structure and philosophies behind domestic terrorism events and how to interpret terrorist acts from various theoretical perspectives. Prerequisite: CJ 105. 3 semester hours

**CJ 245 WOMEN AND CRIMINAL JUSTICE**

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 offenses 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. This course fulfills the requirements for the GWS major and minor. 3 semester hours

**CJ 247 UNDERSTANDING AND MANAGING STRESS (SAME AS PSY 247)**

This course focuses on the research surrounding the physiological underpinnings of stress, the positive and negative consequences of stress, and specific stress management skills. Understanding and Managing Stress is a service learning course that provides a special opportunity for Widener students and prison inmates to learn together in classes held at the Chester State Correctional Facility. This unique classroom environment creates an understanding of the similar and unique stressors of college and prisoners, offering lively and educationally beneficial discussions throughout the semester. Prerequisite: PSY 105 or CJ 105; sophomore standing or above; PSY or CJ major. 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 265 COMMUNITY-BASED CORRECTIONS (FORMERLY CJ 355)**

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 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 is 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 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 268 CYBER CRIME**

The ever growing advances of technology have resulted in the increase in the commission of cyber crimes—crimes that involve a computer, any computer technology, or the Internet. This course reviews the history of cyber crime, types of cyber crime, laws that pertain to cyber crime, and efforts by state and U.S. federal law enforcement to combat cyber crime. The role of and investigations by computer forensic experts are also explored. No prerequisites. 3 semester hours

**CJ 270, 271 SUPERVISED RESEARCH TOPICS IN CRIMINAL JUSTICE**

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, IRB application, data collection, data analysis, report writing, and project presentation. Regular meetings with the supervising faculty member and a final written report and presentation are required. These courses may be taken for two semesters for a maximum of 6 credits (CJ 270 during one semester and CJ 271 during another semester). There is no requirement to take both courses. This course may be used to fulfill one criminal justice elective requirement only. Additional credit for this course will be applied to general elective required credits. Prerequisites: CJ105 and permission of instructor prior to registration. 3 semester hours each

**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 310 CRIMINAL VIOLENCE IN AMERICA (HONORS)**

This course provides students with an overview of criminal violence in America. To this end, the class explores violent offenses and behaviors by discussing the frequency of and theoretical explanations for such violence. Criminal justice policy responses to criminal violence are also examined. No prerequisites. 3 semester hours

**CJ 315 JUVENILE JUSTICE SYSTEM**

This course provides an overview of the juvenile justice system and related juvenile issues. It focuses on the law enforcement, court, and corrections responses to those in the juvenile justice system. Topics include probation, pre-trial diversion programs, detention, and sealing of juvenile records. The course examines how the juvenile justice system addresses issues of child abuse, gangs, and egregious violent crime. Prerequisite: CJ 105. 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 380 CRIMINAL JUSTICE RESEARCH AND ANALYSIS**

This course is designed to help students understand the many ways in which academics study crime and conduct research in the criminal justice field. The major goal of this course is to develop a research proposal on a topic of the student's choice and to apply the appropriate statistical analyses for the research question. Topics include problem formation, research designs, research ethics, sampling issues, data sources, and data analysis. This course includes lab exercises for application of the material learned. 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, or permission of instructor. 3 semester hours

#### **CJ 405 ETHICS IN CRIMINAL JUSTICE**

This senior-level seminar addresses various aspects and approaches to the practice and study of ethics in the criminal justice system. Topics include philosophical approaches to crime, justice, and punishment, as well as practical ethics for those who work in the system. After studying the concepts of ethical justice, students apply ethical principles to law, law enforcement, and corrections. Required for all seniors in the major. Prerequisite: Senior standing in the major. Students from other majors, by permission of instructor only. 3 semester hours

#### **CJ 409, 410 SENIOR RESEARCH**

Research in an area of special interest. Required of all majors in criminal justice. 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. 3–6 semester hours

#### **CJ 499 INDEPENDENT STUDY**

Individual study for specially qualified advanced students. Requires permission of criminal justice faculty member. 3 semester hours

## **DANCE**

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#### **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 122. 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 122 DANCE REPERTOIRE III**

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. Students may enroll in the course up to eight times. Corequisite: DAN 101 or DAN 102. 0.5 semester hours

## **DIGITAL MEDIA INFORMATICS**

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#### **DMI 101 INTRODUCTION TO INFORMATICS (W)**

This course introduces students to the field of informatics and serves as a foundation course to the digital media informatics, business informatics, and health informatics majors. Through lecture and lab activities, students learn about the growth of computer technologies and their impact on the media and business in modern society. Students participate in several computer-based exercises. Key components of the course include an introduction and definition of informatics; computers and how they work; data and knowledge representation; business information systems; digital media technology;

health care data systems; and computerized technology trends. Does not fulfill social science or science general education requirements. This is a writing-enriched course. No prerequisites. 3 semester hours

#### **DMI 200 DATA MINING (SAME AS CSCI 200)**

This is an introductory course on data mining. Data mining is a relatively new field that refers to the process of exploration and analysis of large quantities of data in order to discover meaningful patterns and knowledge. The course focuses on predictive analytics algorithms and computational methods to discover and report influential and meaningful patterns in data and predict future behavior. Prerequisites: MATH 117 or MATH 120 or MATH 131, or MATH 141. 3 semester hours

#### **DMI 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

#### **DMI 188, 288, 388, 488 SPECIAL TOPICS IN DIGITAL MEDIA INFORMATICS**

Topics offered in response to student and faculty interest. 3 semester hours each

## **EARTH AND SPACE SCIENCE**

#### **ESSC 103 INTRODUCTION TO EARTH SCIENCE (SAME AS ASTR 103)**

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. 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 EARTH SCIENCE LABORATORY (SAME AS ASTR 113)**

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 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, and 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 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 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 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 SPECIAL TOPICS IN ENVIRONMENTAL SCIENCE**

Topics offered in response to student and/or faculty interest. 3 semester hours each

## **ECONOMICS**

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#### **EC 101 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. Students may not receive credit for both EC 101 and EC 201. Prerequisite: Second-semester freshman. 3 semester 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 101 on student transcripts. Students cannot receive credit for both EC 103 and EC 101. This course is restricted to university honors students. 3 semester hours

#### **EC 104 HONORS PRINCIPLES OF MICROECONOMICS**

This course is an introduction to microeconomic principles and their use in the analysis of economic problems. The decision-making processes of households and firms are explored. Topics include price determination and resource allocation under various market structures, market failures to optimally allocate resources, and the impact of the global economy on decision-making. Teamwork may be used to solve problems. Student groups may apply course content to examine businesses they interview. To enhance student engagement, a game format may be used to review material. 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 202 PRINCIPLES OF MICROECONOMICS**

This course provides an introduction to product and resource markets; failures of markets to effectively allocate resources; demand and supply decisions by households, businesses, and government; and the impact of international trade. Topics include market systems, consumer behavior, production functions and costs, output pricing under various market structures, and input pricing. Throughout the course, students may work in teams to solve problems. Working in groups, students may interview representatives of businesses, and use the findings from the interviews to apply course content. To further engage students, a game format may be used to review content. 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 101 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 101 and 202 or equivalents. 3 semester hours

#### **EC 311 MICROECONOMIC THEORY**

This course explores the economic behavior of households and businesses under various market conditions; consumer demand; production theory and costs of production; output pricing strategies in different situations; factor pricing and resource use; government regulation and resource allocation. Also explored are the effects of government policies on consumers and producers in competitive markets; pricing of public goods; the use of subsidies and taxes for goods with external benefits and costs. Throughout the course, students may work in teams to solve problems. Prerequisite: EC 202 or equivalent, MATH 118 or equivalent. Course offered only in spring 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 101 or equivalent, MATH 117. 3 semester hours

**EC 315 WOMEN, MEN, AND WORK**

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; employment discrimination; and harassment based on gender, sexual orientation, or transgender status. Students may view and discuss films on labor issues. Students may work in teams to: solve problems; interview households and explore the allocation of members' time to labor market work and household responsibilities; examine and compare labor issues in countries around the world. This course may be used as a human resource management elective. Prerequisite: EC 202. Course offered only in spring semester. 3 semester hours

**EC 316 THE ECONOMICS OF SPORTS (SAME AS SMTG 410)**

See SMTG 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 335 INVESTMENTS (SAME AS FIN 305)**

This course explores the theory and practice of investments, covering topics such as risk and return, capital market structure, security analysis, bond valuation, and portfolio management. Special emphasis is placed on how economic forces influence the pricing of financial assets. Understanding of investment theory is stressed and is tied in with application of techniques such as asset valuation and portfolio theory. Students apply a "top-down" valuation method to determine if a security is over-valued or under-valued and make subsequent trading decision using StockTrak. Data and information from Bloomberg is extensively used for making investment decisions. This course fulfills one of the requirements for the Certified Financial Planner (CFP®) examination. Also cross-listed with FIN 305. Students may not receive credit for both courses. Prerequisite: FIN 303. 3 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. This course is cross listed with FIN 401. Students may not receive credit for both. Prerequisite: EC 101 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 101 and 202 or equivalents. 3 semester hours

**EC 408 INTERNATIONAL ECONOMICS**

This course is the mixture of the concepts and practice in international economics and offers thorough insight regarding topics in international economics such as theories of absolute advantage and comparative advantage, factor pricing and terms of trade, protectionism including

the use of tariffs and non-tariffs protection, balance of payment, and foreign exchange market. Students build a comprehensive understanding in the international trade and finance through working on theories and their applications and will be able to construct the analytical skills to help in reading and understanding issues in international economics. Finally, students apply the analytical skills to construct their own opinion on one of many current issues in international economics as a course paper. Prerequisite: EC 101 and 202. 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 101 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 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

**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: ACCT 405, ACCT 408, FIN 305. Corequisites: ACCT 409 and FIN 320, but it is recommended to complete these prior to taking EC 453. 3 semester hours

**EC 497 INTERNSHIP IN ECONOMICS**

This is a required internship course for students majoring in economics. The purpose of this internship is to provide students with career-relevant on-the-job experiences where knowledge of economics obtained from classroom theory is integrated with actual practical work experiences. Each student is required to work for a minimum of 150 hours per semester in an economics related position. Internship positions can be paid or unpaid, but most positions are paid. Grading is based on the following elements, supervisor's evaluation, internship activity logs, internship project, and final presentation. Students must receive internship approval for academic credit prior to starting an internship. Prerequisites: economics major, EC 101, EC 202, and junior standing.

**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

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### ED 101 INTRODUCTION TO TEACHING

Intended for students who want to learn more about the teaching profession, this course provides 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 are 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. 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. All students must have required clearances before the semester begins. The course aligns with the ACEI (Association for Childhood Education International) standards and elements. 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. All students must have required clearances before the semester begins. Please contact the Office of Field Experience and Certification for more information. 3 semester hours

### ED 202 EDUCATIONAL PSYCHOLOGY (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.* 3 semester hours

### ED 250 INTRODUCTION TO SPECIAL EDUCATION

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. 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. All students must have required clearances before the semester begins. Please contact the Office of Field Experience and Certification for more information. 3 semester hours

### ED 288 CULTURAL PROFICIENCY AND CULTURALLY RESPONSIVE PEDAGOGY

ED 288 is an introduction to cultural proficiency and culturally responsive pedagogy. Students learn the basic tools of cultural proficiency, including guiding principles, the foundation upon which the approach is based; a continuum, which indicates unique ways of interpreting and responding to difference; barriers to individual and organizational change; and the essential elements, which represent standards for individual behavior and organizational practices. 3 semester hours

### ED 306 METHODS—SECONDARY EDUCATION SOCIAL STUDIES/CITIZENSHIP

This course prepares 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. This course aligns with the NCSS (National Council of Social Studies) standards and elements. 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. All students must have required clearances before the semester begins. Please contact the Office of Field Experience and Certification for more information. Prerequisite: Completed application for teacher certification. 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 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: Completed application for teacher certification. 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 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: Completed application for teacher certification. 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 and the standards of NSTA (National Science Teachers Association). 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. All students must have required clearances before the semester begins. Please contact the Office of Field Experience and Certification for more information. Prerequisite: Completed application for teacher certification. 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 outside of regularly scheduled class times, which enable them to relate the course content to teaching and to the standards in ACTFL (America Council on the Teaching of Foreign Languages). All students must have required clearances before the semester begins. Please contact the Office of Field Experience and Certification for more information. Prerequisite: Completed application for teacher certification. 3 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. As part of a special topics course, students may participate in field experiences 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 and advisement. 3 semester hours each

#### **FE1—FIELD EXPERIENCE 1 STATEMENT FOR ED 11XX AND 12XX COURSES**

*For ED 1100-level and 1200-level courses, students participate in field experience stages 1 and 2 as defined by the Pennsylvania State Department of Education. Students must have required clearances on file in the Office of Certification before entering the field experience placement. Candidates work with groups of students in school or in after-school settings under the supervision of a certified teacher.*

#### **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. 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. All students must have required clearances before the semester begins. Please contact the Office of Field Experience and Certification for more information. (PA Department of Education Pre-K–4 Program Specific Guidelines, 2009). 3 semester hours

#### **ED 1102 EFFECTIVE INSTRUCTIONAL PRACTICES AND DELIVERY METHODS FOR ALL LEVELS OF SPECIAL EDUCATION SUPPORT**

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 and large and small group class discussions. 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. All students must have required clearances before the semester begins. Please contact the Office of Field Experience and Certification for more information. Students are strongly advised to take ED 1102 before ED 1103. 3 semester hours

#### **ED 1104 EMERGENT LITERACY**

Through practice, this course explores research-based instruction for the emergent literacy learner. Candidates in this course both apply and align literacy theory to instructional methods, materials, and the Pennsylvania Department of Education and Common Core Standards for teaching language arts to young children in the Pre-K classroom. Play and the active nature of constructive learning are emphasized. Differentiation for diverse learners is also included. 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. All students must have required clearances before the semester begins. Please contact the Office of Field Experience and Certification for more information. 3 semester hours

#### **ED 1200 CLASSROOM MANAGEMENT**

This course examines the issues involved with the control of behavior in an elementary school classroom setting. The course covers 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 childhood behaviors. Student motivation and the relationship between curriculum content and student motivation is 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. 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. All students must have required clearances before the semester begins. Please contact the Office of Field Experience and Certification for more information. 3 semester hours

#### **ED 1201 EARLY LITERACY**

This course introduces key issues in early literacy research and instruction in the kindergarten classroom. Students engage in discussion of and planning for differentiated instruction in all the language arts (reading, writing, listening, speaking, viewing, and visual representation). Students learn integrated approaches to teaching methods and materials for literacy curriculum for the diverse language and learning needs of emergent, beginning readers and writers. This course examines issues, theories, processes, and contexts involved in oral language and early literacy development and the implications for curriculum and instruction in the early grades. 3 semester hours

#### **ED 1202 FAMILY, COLLABORATION, AND ADVOCACY**

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. Candidates evaluate the effects of professional decisions and actions on students, families, and other professionals in the learning community and actively seek out opportunities to grow professionally. Candidates develop an understanding of the importance of establishing and maintaining a positive collaborative relationship with families, school colleagues, and agencies in the community. 3 semester hours

#### **ED 1203 MATHEMATICS METHODS I**

This course prepares pre-service early childhood teachers to effectively teach mathematics to students in kindergarten through grade 4. 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 counting, algebra, geometry, measurement, and data analysis and probability. 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. All students must have required clearances before the semester begins. Please contact the Office of Field Experience and Certification for more information. 3 semester hours

#### **ED 1204 ENGAGING YOUNG CHILDREN, INTEGRATING CURRICULUM, & INSTRUCTION**

The course focuses on creating a developmentally appropriate classroom and fostering partnerships with children, parents, schools, and community. Topics include planning the content curriculum and enhancing cognitive, language arts, physical development, art education, mathematics, and social development. The course covers the development of the social child and the implications of this development for learning within the community. 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, including self-concept, self-regulation, social interactions, and care and self-reliance. Candidates learn to integrate the development of social and personal skills throughout instruction, including getting along with others (parents, teachers, and peers); 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 others' behavior and emotions; 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, and peer relationships, development of character, aspirations, and civic virtues to develop instruction that develops students' intellect.

Candidates examine Pennsylvania Early Learning Standards Pre-K–4 for Art and Humanities, Motor Development, Health, Safety, and Nutrition. This course covers specific early childhood topics that include historical contributions to early childhood education, developmentally appropriate early childhood programs, state and federal regulations and standards, and ACEI Standards. This course also describes the information pre-K–4 candidates will need to know in order to develop professional attitudes and behaviors. Candidates will demonstrate knowledge of and competence in fostering professionalism in school and community settings. 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. All students must have required clearances before the semester begins. Please contact the Office of Field Experience and Certification for more information. 3 semester hours

**ED 1205 SPECIAL EDUCATION PROCESSES AND PROCEDURES: 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. 3 semester hours

**ED 1206 LITERACY FOUNDATIONS I**

This course introduces key issues in early elementary literacy methods, research, and instruction. Candidates engage in discussion of and planning for differentiated instruction in all the language arts (reading, writing, listening, speaking, viewing, and visual representation). Students learn integrated approaches to teaching methods and materials for literacy curriculum for the diverse language and learning needs of early fluent readers and writers. Candidates learn about instructional strategies and materials appropriate for teaching reading and writing for primary grades (1–2). 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. 3 semester hours

**FE2—FIELD EXPERIENCE 2  
STATEMENT FOR ED 13XX AND 14XX COURSES**

*For ED 1300-level and 1400-level courses, students participate in field experience stage 3 as defined by the Pennsylvania State Department of Education. Students must have required clearances on file in the Office of Certification before entering the field experience placement. Candidates teach groups of students in school or in after-school settings under the supervision of a certified teacher. For this phase of clinical (field) experience, candidates will have been admitted to the teacher certification program and have taken at least one methods course but will not be in full control of the class.*

**ED 1302 LITERACY FOUNDATIONS II**

This course introduces key issues in the development of strategic reading and writing of both narrative and informational texts in upper elementary students (grades 3–4). Students become familiar with theoretically sound, research-based instructional strategies and assessments appropriate for the teaching of advanced and content-area reading and writing. Candidates continue to engage in discussions of and planning for differentiated instruction to support all the language arts (e.g., reading, writing, listening, speaking, and visual representation). 3 semester hours

**ED 1304 MATHEMATICS METHODS II**

This course prepares preservice primary grade teachers to effectively teach mathematics in grades kindergarten through four. 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. 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. All students must have required clearances before the semester begins. Please contact the Office of Field Experience and Certification for more information. 3 semester hours

**ED 1305 INTENSIVE READING, WRITING, AND MATHEMATICS INTERVENTION APPROACHES**

This course involves development and implementation of effective curriculum specially designed instruction and materials to educate students with special needs in reading, writing, and mathematics. 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. All students must have required clearances before the semester begins. Please contact the Office of Field Experience and Certification for more information. 3 semester hours

**ED 1306 TEACHING FOR LITERACY IN TODAY'S DIVERSE CLASSROOM**

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 and align with the NCTE and ACEI standards. 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. 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. All students must have required clearances before the semester begins. Please contact the Office of Field Experience and Certification for more information. (Adapted from the Pennsylvania Department of Education Pre-K–4 Program Specific Guidelines, 2009). 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 and align to the NSTA standards. 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 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. 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. 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. All students must have required clearances before the semester begins. Please contact the Office of Field Experience and Certification for more information. 3 semester hours

**ED 1309 EVIDENCE-BASED EFFECTIVE INSTRUCTION—LOW INCIDENCE 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. 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. Emphasis is on promoting culturally relevant pedagogy of students with and without learning disabilities in general education. Academic and behavioral success and instructional learning strategies are identified, discussed, and implemented. 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. All students must have required clearances before the semester begins. Please contact the Office of Field Experience and Certification for more information. 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 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. 3 semester hours

**ED 1323 SOCIAL STUDIES METHODS (FORMERLY ED 1303)**

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 field experiences 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. 3 semester hours

**ED 1401 EVIDENCE -BASED EFFECTIVE INSTRUCTION—PERVASIVE DEVELOPMENTAL DISORDERS**

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 intellectual disabilities, severe behavior disorders, and autistic spectrum disorders. Objectives stress adapting environments, materials, and instruction to facilitate inclusion and teaching functional life skills within a special education curriculum. 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. All students must have required clearances before the semester begins. Please contact the Office of Field Experience and Certification for more information. Completion of ED 1306-1310 before this course is strongly advised. 3 semester hours

**ED 1402 EVIDENCE-BASED EFFECTIVE INSTRUCTION LOW INCIDENCE DISABILITIES**

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. 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. All students must have required clearances before the semester begins. Please contact the Office of Field Experience and Certification for more information. 3 semester hours

**ED 1405 COLLABORATION AND COMMUNICATION**

This course is taken concurrently with student teaching and 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. Completion of ED courses 1401 and 1402 before this course is strongly advised. 3 semester hours

#### **ED 1410 STUDENT TEACHING**

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. Student teaching semesters are aligned to program standards ACEI and CEC. Prerequisite: Permission of the director of field experience and certification. 12 semester hours

#### **ED 1421 LITERACY DISABILITIES**

This course involves development and implementation of effective curriculum and materials to educate students with special needs in reading, writing, and mathematics. 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. All students must have required clearances before the semester begins. Please contact the Office of Field Experience and Certification for more information. 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. 3 semester hours

#### **TED 1211 TECHNOLOGY: INSTRUCTIONAL, ASSISTIVE, UNIVERSAL DESIGN TO SUPPORT READING, MATHEMATICS AND WRITING**

Consistent with the concepts and applications of universal design for learning (UDL), this course provides experiences that help develop knowledge of technology integration and its ability to support students with diverse abilities, including students who are English language learners (ELL). Students acquire instructional technology strategies that support differentiated practices and can be applied to the construction of lesson and activity plans and instructional goals and objectives that incorporate content, pedagogy, and developmental considerations consistent with state learning standards. Students have opportunities to create assessments utilizing a variety of technologies. Additionally, the course assists students' understanding of the various types of adaptive and assistive technologies used in special education. 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

## **ENGINEERING**

#### **ENGR 100 UNDERGRADUATE ENGINEERING RESEARCH**

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 107 ENGINEERING HONORS SEMINAR I**

Workshops and activities presenting aspects of leadership and professional development, including critical thinking, communication

skills, civic and professional engagement, collaboration, creativity and innovation, and engineering ethics. 0 semester hours

#### **ENGR 111 ENGINEERING TECHNIQUES**

This course helps freshmen understand the engineering profession and its various disciplines through a variety of seminars and interdisciplinary projects. Attributes and skills that are essential to a successful college life and career, such as professionalism, sense of community, communication skills, ethics, time and stress management, meeting deadlines, and entrepreneurial mindset are emphasized. The course is also designed to help freshmen make a successful transition to academic and extracurricular campus life at Widener, and to become familiar with campus resources, policies, and procedures. One-hour seminar and one two-hour project session per week. Corequisite: MATH 120. 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 architectural, construction, design, civil site, 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 115 INTRODUCTION TO COMPUTER PROGRAMMING USING MATLAB**

This course provides an introduction to structured computer programming using the MATLAB environment. Emphasis is on problems of engineering interest. Topics include variables, arrays, loops, conditionals, and functions. One lecture and one two-hour lab per week. 2 semester hours

#### **ENGR 200 UNDERGRADUATE ENGINEERING RESEARCH**

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 207 ENGINEERING HONORS SEMINAR II**

A continuation of ENGR 107, this course includes additional workshops and activities presenting aspects of leadership and professional development, such as critical thinking, communication skills, civic and professional engagement, collaboration, creativity and innovation, and engineering ethics. Prerequisite: ENGR 107 or consent of instructor. 0 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 213H HONORS 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. Supplemental work includes solution of open-ended problems and application of software to solve more

complex problems. 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**

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**

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. Topics include 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, as well as application and computer techniques to the solution of problems. Prerequisites: ENGR 214 and MATH 241. 3 semester hours

#### **ENGR 320H HONORS FLUID MECHANICS**

A study of incompressible fluids at rest and in motion. Topics include 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, as well as application and computer techniques to the solution of problems. Supplemental work includes open-ended problems, a design project, and additional or more in-depth coverage of class topics. 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 exergy; thermodynamic processes and thermodynamic cycles; equations of state and other thermodynamic relations for simple compressible substances; and introduction to power and refrigeration cycles are the focus of this class. Prerequisites: CHEM 145, PHYS 161, and MATH 142 or 133. 3 semester hours

#### **ENGR 325H HONORS THERMODYNAMICS**

Properties of pure substances; the ideal gas; the principle of corresponding states; first and second laws of thermodynamics; enthalpy, entropy, and exergy; thermodynamic processes and thermodynamic cycles; equations of state and other thermodynamic relations for simple compressible substances; and introduction to power and refrigeration cycles are the focus of this class. Additional topic areas may be added at the instructor's discretion, such as the role of thermodynamics in analyzing energy and environmental concerns, unsteady-state processes, heat transfer mechanisms, and biological systems. A project is assigned requiring analysis of a complex multistep process. Prerequisites: CHEM 145, 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 328 COMPUTATIONAL METHODS IN ENGINEERING**

Application of computational methods to solve engineering problems from various disciplines using numerical solutions typically used in linear algebra, nonlinear systems of equations, differentiation and integration, and ordinary differential equations. Corequisite: MATH 242. 2 hours lecture and 2 hours lab. 3 semester hours

#### **ENGR 400 UNDERGRADUATE ENGINEERING RESEARCH**

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 engineering 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 healthcare. Introduction to biological and biomedical problems and solutions using fundamental concepts and tools from electrical, mechanical, and chemical engineering. Prerequisites: CHEM 145 and PHYS 161. 1 semester hour

### **BME 303 BIOMEDICAL ENGINEERING LABORATORY I**

This course provides an introduction and hands-on experience of laboratory techniques and tools used for biological measurement and data analysis in biomedical engineering. One lecture and one 3-hour lab per week. This is a writing enriched course. Prerequisites: BIOL 121, BME 220. Corequisite: ENGR 323. 2 semester hours

### **BME 304 BIOMEDICAL ENGINEERING LABORATORY II**

Experimental techniques covering a range of advanced topics in biomedical engineering. BME 304 is a continuation of BME 303. This is a writing enriched course. Prerequisite: BME 303. Corequisites: BME 350 and BME 360. 1 semester hour

### **BME 338 BIOMEDICAL DEVICES**

An examination of policies and procedures relating to medical device design and approval. Topics are applied through the study of a currently marketed medical device. Prerequisites: ENGR 214 and ENGR 323. 3 semester hours

### **BME 340 BIOINSTRUMENTATION**

Study of fundamental principles in bioinstrumentation. Topics include design and building of biomedical instrumentation, data acquisition, and signal processing. Prerequisites: ENGR 219 and BIOL 122. 3 semester hours

### **BME 350 BIOTRANSPORT**

Topics include the principles and applications of biotransport fundamentals, macroscopic biotransport, 1-D steady and unsteady state transport, and general multidimensional microscopic transport. Prerequisites: ENGR 325, MATH 242, and BIOL 122. 4 semester hours

### **BME 360 BIOMATERIALS**

This course covers materials used in biomedical applications, biological/biomaterials interactions, host responses, and materials evaluations. Topics include chemical structures of materials used in medicine, physical and mechanical properties, biocompatibility, tissue-biomaterial interactions, and immune response. Prerequisites: CHEM 145 and BIOL 122. 3 semester hours

### **BME 338 BIOMEDICAL DEVICES**

An examination of policies and procedures relating to medical device design and approval. Topics are applied through the study of a currently marketed medical device. Prerequisites: ENGR 214 and ENGR 323. 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/her interest. Prerequisite: Senior status. 1 semester hour

### **BME 420 BIOMEDICAL ENGINEERING SEMINAR II**

Students study ethical theories and codes in BME. Topics include security, confidentiality, privacy, and bioethical dilemmas. Prerequisite: Senior status. 1 semester hour

### **BME 430 THERMODYNAMICS OF BIOLOGICAL SYSTEMS**

The study of the formation of energy-rich macromolecules and the relation of this process compared to classical thermodynamics. Understanding of the complexity of living systems in terms of open system, non-equilibrium thermodynamics. Prerequisites: ENGR 325 and BIOL 122. 3 semester hours

### **BME 432 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. Prerequisite: BME 350 or CHE 329. 3 semester hours

### **BME 440 BIOHEAT AND MASS TRANSFER**

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; Students will study cryobiology, artificial kidneys, and hemodialysis fundamentals. Prerequisites: ENGR 325 and BIOL 122. 3 semester hours

### **BME 442 CELL AND TISSUE ENGINEERING**

This course introduces 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. Prerequisite: BME 360. 3 semester hours

### **BME 445 SYSTEMS IN BIOMEDICAL ENGINEERING**

Students are introduced to computational and theoretical systems biology at the cellular and molecular level. Topics include organizational patterns of biological networks, analysis of metabolic networks, and signal transduction networks. Prerequisites: BME 340, BME 350. 3 semester hours

### **BME 446 BIOMEDICAL FLUID MECHANICS**

This course introduces and applies the fundamentals of fluid mechanics to biological cardiovascular, respiratory and other biofluid systems. Prerequisites: MATH 241 and BME 350 or ENGR 320 or CHE 329. 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. Prerequisite: BME 340. 3 semester hours

### **BME 460 REGULATORY AND MANUFACTURING PRACTICES**

Understanding the regulatory structure and regulations governing the manufacture of health care and pharmaceutical products. Regulatory requirements for the design, construction, and operations of manufacturing facilities. Quality control and quality management systems used in the pharmaceutical and health care industries. Prerequisites: Senior status. 3 semester hours

### **BME 465 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, orthopedic biomechanics, and injury biomechanics. Prerequisites: ENGR 214, ENGR 323. 3 semester hours

### **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 314 INTRODUCTION TO PROCESS CONTROL**

This course introduces students to process control concepts and applications, including computer simulations of chemical engineering processes, identification and measurement of appropriate monitored and manipulated variables, real-time and Laplace Domain analyses of controlled systems and optimization of system performance, as well as brief laboratory experimentations using automatic control systems. Corequisite: MATH 242. 3 semester hours

**CHE 327 CHEMICAL ENGINEERING LABORATORY I**

Principles of material and energy balances, fluid mechanics, heat transfer, and multi-stage mass 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. Prerequisite: CHE 329. 1 semester hour

**CHE 329 TRANSPORT PHENOMENA**

The transport of momentum, heat, and mass. Emphasis is placed on the discussion of engineering problems and the mathematical description of underlying principles. Topics include motion of viscous and inviscid fluids, including boundary-layer theory and turbulent momentum transfer; stream functions and velocity profiles; fluid rheology; conductive, convective, and radiative heat transfer; application of fundamental principles to analysis of fluids-handling equipment; application of fundamental principles to analysis of heat transfer operations. Corequisites: MATH 242 and either CHE 222 or ENGR 325. 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**

Underlying principles of mass transfer operations, including both staged and continuous contacting, molecular diffusion and convective mass transfer. Application of principles to the design and operation of binary and multicomponent distillation, gas adsorption, and liquid extraction processes. Introduction to adsorption and membrane permeation operations. Prerequisite: CHE 222. Corequisites: CHE 329 and 330. 4 semester hours

**CHE 425 PROCESS DESIGN I**

Development of process design methods for continuous processing, with emphasis on an integrated industrial system, including chemical, reactors; relationship of reactor design choices to performance and physical design parameters; design basis; choice of unit operations; choice of process operating conditions; estimation of capital and operating costs, their effect on profitability; rules of thumb for equipment design choices; relationship between design choices and costs; process optimization; computer simulation techniques for equipment; and process design and flow sheeting. Corequisite: CHE 332. 3 semester hours

**CHE 427 CHEMICAL ENGINEERING LABORATORY II**

Continuation of CHE 327 to include operations such as adsorption, distillation, drying, extraction, bioseparations, and bioreactions. This is a writing-enriched course. Prerequisites: CHE 329 and 330. 1 semester hour

**CHE 428 PROCESS DESIGN II**

Continuation of CHE 425, with emphasis on essential issues affecting the design of an integrated continuous chemical process. Operating procedures, including startup, shut down, turn down, control; redundancy and secondary equipment to ensure operability; identification of potential process safety hazards; selection of mitigation techniques; identification and mitigation of potential environmental effects; and details of mathematical techniques for optimization of individual equipment. Professional ethics and ethical codes are discussed. This is a writing-enriched course. 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 non-isothermal reactors; reaction stability and reactor hazards; introduction to hazard-mitigation techniques; introduction to fluid-fluid and catalyzed gas-solid reactors. Prerequisites: CHE 329 and 330. 3 semester hours

**CHE 430 INTRODUCTION TO BIOTECHNOLOGY**

Survey of the application of engineering principles to biotechnology. Introduction to fundamental biological principles affecting the growth of cells and their synthesis of useful biochemicals; factors affecting cell growth; growth kinetics and growth curves; sterilization and sterile processing; batch and continuous culture; bioreactors; introduction

to post-fermentation processing. Prerequisites: CHE 329 and 332, or by permission of instructor. 3 semester hours

**CHE 460 REGULATORY AND MANUFACTURING PRACTICES**

Understanding the regulatory structure and regulations governing the manufacture of health care and pharmaceutical products. Regulatory requirements for the design, construction, and operations of manufacturing facilities. Quality control and quality management systems used in the pharmaceutical and health care industries. Prerequisite: Senior status. 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 CAD 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. 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. 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. 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. 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 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: Civil engineering senior standing. 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. 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. 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 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. Prerequisite: ENGR 223 or permission from the instructor. 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. 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 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. Prerequisite: EE 347. 3 semester hours

**EE 435 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 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 or ME 353. 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 and 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; and 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 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. Prerequisite: EE 346. 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. Prerequisite: EE 346 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 483 WIRELESS COMMUNICATION SYSTEMS**

This course extends and builds on the topics covered in EE 477, with a focus on the analysis and design of wireless communication systems. Topics include transmission fundamentals, antennas, noise, detection and performance of digital modulation systems, link budget analysis, spread spectrum techniques, satellite communications, and cellular networks. Prerequisite: EE 477. 3 semester hours

**EE 484 DIGITAL SIGNAL PROCESSING**

This course applies the concepts and tools covered in EE 346, with an emphasis on the analysis and processing of signals and the design of discrete-time linear systems and digital filters. The Fourier and z-transform are utilized and covered in more depth. Prerequisite: EE 346. 3 semester hours

**EE 485 INTRODUCTION TO MECHATRONICS**

Design, modeling, and simulation of electro mechanical systems with computational elements that are designed to achieve behavioral response goals. Course topics include models and computer simulation of mechanical and electromechanical system elements, sensors, signal processing, embedded computers, control algorithms, computer interfacing, actuators, and system performance evaluation. Prerequisite: Senior status or permission from the instructor. 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. This is a writing enriched course that has an integrated laboratory. Prerequisite: CHEM 145. 4 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 353 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: ENGR 328. 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 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 470 FUTURE ENERGY SYSTEMS**

The course provides an overview of current energy systems and the related global challenges such as climate change, environmental pollution, declining supplies of oil and global energy shortage. Possible short- and long-term solutions are examined, including renewable energy sources (wind, solar, biomass, geothermal) but also conventional sources (combined gas/steam, combined heat/power). Strategies for reducing the overall energy consumption and the consumption of oil in transportation will also be discussed. Corequisite: ME 346 or permission of the instructor.

### **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 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 478 ROBOTICS**

Introduction to the area of robotics for undergraduate students. Forward and inverse kinematics; the manipulator Jacobian; trajectory planning; design, dynamics, and control of serial manipulators. Prerequisite: ENGR 214. 3 semester hours

### **ME 488 SPECIAL TOPICS IN MECHANICAL ENGINEERING**

Senior elective offering special topics according to student and faculty interest. 3 semester hours



## ROBOTICS ENGINEERING

### RE 101 INTRODUCTION TO MICROCONTROLLER IN ROBOTIC SYSTEMS

Students are introduced to the basic principles of microcontrollers through a hands-on robotic laboratory experience. The course covers building a robotic 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

### RE 301 MECHANICS OF ROBOTIC SYSTEMS

Theory and application of mathematical models to analyze, design, and control serial kinematic chains (serial manipulators). Covers the forward and inverse kinematics, the manipulator Jacobian, trajectory planning, design, dynamics include Newton-Euler and Lagrangian methods and control. Prerequisite: ENGR 214. 3 semester hours

### RE 302 SIGNAL ANALYSIS IN ROBOTIC SYSTEMS

This course focuses on the representation, design, and analysis of continuous and discrete time signals in robotic systems. Topics include linear systems, frequency response, convolution, Laplace transforms, Fourier series, Fourier transforms, Nyquist sampling theorem, z transform, and linear filters. Prerequisite: ENGR 219. 3 semester hours

### RE 303 MACHINE DESIGN FOR ROBOTICS SYSTEMS

Introduction to the design of mechanical elements and systems subjected to both steady and variable loading conditions. Consideration of failure criteria, material use, economics, reliability, codes and standards. Projects to design components and assemblages of robotic mechanical systems to given criteria by synthesis and analysis. Prerequisite: ENGR 323. Corequisite: ME 351. 3 semester hours

### RE 304 OBJECT-ORIENTED PROGRAMMING FOR ROBOTICS APPLICATIONS

This course provides an introduction to C++ programming and the concepts of object-oriented design, including functions, arrays, pointers, strings, classes, inheritance, abstract data types, encapsulation, member access control, constructors, and destructors, operator overloading, virtual functions, polymorphisms, I/O streams, templates, and exception handling. Prerequisite: ENGR 112. 3 semester hours

### RE 401 ROBOTICS AND MECHATRONICS LAB

Laboratory illustrating topics covered in courses RE 301 (Mechanics of Robotic Systems) and RE 402 (Introduction to Mechatronics). Lab sessions allow for constructing robotics and mechatronic systems that integrate mechanical, computer, and electronic components. Includes a comprehensive design project. Prerequisite: RE 301. Corequisite: RE 402. 2 semester hours

### RE 402 INTRODUCTION TO MECHATRONICS

Design, modeling, and simulation of electromechanical systems with computational elements that are designed to achieve behavioral response goals. Course topics include models and computer simulation of mechanical and electromechanical system elements, sensors, signal processing, embedded computers, control algorithms, computer interfacing, actuators, and system performance evaluation. The course includes a number of workshops during which students are guided through applications of the lecture topics. Prerequisite: EE 471. 3 semester hours

### RE 403 CONTROL OF ROBOTIC SYSTEMS

Methods of controlling a serial manipulator to track a desired position using linear and nonlinear control methods. Analysis and design of continuous linear feedback control systems. Active force control and hybrid position/force control with a robot. Prerequisite: EE 471. 3 semester hours

### RE 404 PROFESSIONAL SEMINAR

Presentation and discussion of current engineering problems and solutions. 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. 1 semester hour

## 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, and 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 READING, THINKING, AND WRITING

Success in college calls for curiosity, engagement, and a willingness to be challenged, as well as having a strong foundation in reading, writing, and thinking. First-year students at Widener begin their college career with ENGL 101, a course designed to prepare undergraduates for serious academic inquiry, full participation in the intellectual life and mission of the university, and sustained self-directed learning throughout the curriculum. Students have the opportunity to select a section of ENGL 101 focused on a particular theme or topic. Through a variety of challenging reading and writing assignments engaging with the topic of choice (including a common reading), students become more careful and discerning readers. They will express insights and craft sustained arguments supported by carefully chosen evidence from primary and secondary material, and they will strengthen their ability to ask questions, evaluate, and synthesize complex information and draw conclusions. 3 semester hours

### ENGL 102 LITERATURE AND CRITICAL WRITING (W)

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 writing and analysis. Students should consult the descriptions for ENGL 115–125 for specific information about the different focuses offered. This course contributes toward satisfying the humanities distribution requirement. All sections are writing enriched. Satisfies a humanities general education requirement for non-majors. Students who have taken ENGL 103 are exempt from taking ENGL 102 to fulfill first-year writing requirements but may take the equivalent courses ENGL 115–125 for humanities distribution credit. Students pursuing majors that require ENGL 102 should register for ENGL 102 and consult with advisors to identify the theme and focus for their preferred section. Once the 102 requirement has been completed, students may register for a course from ENGL 115 to 125 to fulfill a humanities general education requirement, as long as a different theme and focus is chosen. Students whose majors do not require ENGL 102 may register for sections of ENGL 115–125 to fulfill a humanities general education requirement. Prerequisite: ENGL 101. 3 semester hours

### ENGL 103 FRESHMAN HONORS ENGLISH (W)

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. Note: students who have taken ENGL 103 are exempt from taking ENGL 102 to fulfill first-year writing requirements but may take the equivalent courses ENGL 115–125 for humanities distribution credit. 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 115 LITERATURE AND CRITICAL WRITING—  
LITERARY GENRES (W)**

Writers of literature use imagination and aesthetic form to explore what it means to be human. This course introduces students to the principal categories of literary writing: poetry, fiction, drama, and creative non-fiction—their techniques and modes of presentation, ranging from the expressive to narrative to performative. Selected works may be grouped by instructors around a focused topic or theme and will feature a blend of classic and contemporary writing. Students engage with texts via close reading, class discussion, and writing assignments designed to stimulate critical thinking: e.g., analysis, synthesis, reflection, source-based writing, and multimodal composition. Students discover how literature produces meaning, how it entertains, increases empathic understandings of self and other, and exposes us to the diversity of experience as well as our common humanity. This course contributes toward satisfying the humanities distribution requirement. All sections are writing enriched. Satisfies a humanities general education requirement for non-majors. Students pursuing majors that require ENGL 102 should register for ENGL 102, and consult with advisors to identify the theme and focus for their preferred section. Once the 102 requirement has been completed, students may register for a course from ENGL 115 to 125 to fulfill a humanities general education requirement, as long as a different theme and focus is chosen. Students whose majors do not require ENGL 102 may register for sections of ENGL 115–125 to fulfill a humanities general education requirement. Prerequisite: ENGL 101 or 103 or equivalent. Students who have taken ENGL 103 may take ENGL 115–125 for humanities distribution credit. 3 semester hours

**ENGL 116 LITERATURE AND CRITICAL WRITING—  
POETRY AND POETIC FORM (W)**

An introduction to the reading, study, and general appreciation of poetry with emphasis on the lyric tradition as it has developed in English and on the formal aspects of poetry (rhyme, meter, diction, etc.). As a writing-enriched course, this course requires that students practice formal and informal academic writing on topics related to the study of poetry. Satisfies a humanities general education requirement for non-majors. Students pursuing majors that require ENGL 102 should register for ENGL 102, and consult with advisors to identify the theme and focus for their preferred section. Once the 102 requirement has been completed, students may register for a course from ENGL 115 to 125 to fulfill a humanities general education requirement, as long as a different theme and focus is chosen. Students whose majors do not require ENGL 102 may register for sections of ENGL 115–125 to fulfill a humanities general education requirement. Prerequisite: ENGL 101, ENGL 103, or equivalent. Students who have taken ENGL 103 may take ENGL 115–125 for humanities distribution credit. 3 semester hours

**ENGL 117 LITERATURE AND CRITICAL WRITING—  
SHORT FICTION (W)**

Many are several thousand words. Some are only a few hundred. Whatever their length, short fictions always pack a punch. With limited space, every action, every description, and every single word matters. Because such works can be "read at one sitting," Edgar Allan Poe went so far as to claim that short fiction is superior to the novel. In this writing enriched survey course, students explore various forms, techniques, and themes of this captivating genre as manifested in works from around the world. Attention is given to larger aesthetic concerns and social context. Satisfies a humanities general education requirement for non-majors. Students pursuing majors that require ENGL 102 should register for ENGL 102, and consult with advisors to identify the theme and focus for their preferred section. Once the 102 requirement has been completed, students may register for a course from ENGL 115 to 125 to fulfill a humanities general education requirement, as long as a different theme and focus is chosen. Students whose majors do not require ENGL 102 may register for sections of ENGL 115–125 to fulfill a humanities general education requirement. Prerequisite: ENGL 101 or 103 or equivalent. Students who have taken ENGL 103 may take ENGL 115–125 for humanities distribution credit. 3 semester hours

**ENGL 118 LITERATURE AND CRITICAL WRITING—  
SCIENCE FICTION, FANTASY, AND HORROR (W)**

Although they have often lacked critical respect, science fiction, fantasy, and horror are vitally important genres in fiction and mass media, especially in the twentieth and twenty-first centuries. These genres offer ways to explore questions, dreams, and worries raised by technological innovation and scientific exploration. Texts can include novels, short stories, graphic novels, film, and television, and students will use a variety of critical approaches to study how these fantastical genres provide a lens to consider very human concerns. Students should note that individual sections will usually focus on one of the three genres, and they should contact the professor of each section if they are interested in one genre in particular. All sections are writing enriched. Satisfies a humanities general education requirement for non-majors. Students pursuing majors that require ENGL 102 should register for ENGL 102, and consult with advisors to identify the theme and focus for their preferred section. Once the 102 requirement has been completed, students may register for a course from ENGL 115 to 125 to fulfill a humanities general education requirement, as long as a different theme and focus is chosen. Students whose majors do not require ENGL 102 may register for sections of ENGL 115–125 to fulfill a humanities general education requirement. Prerequisite: ENGL 101 or 103 or equivalent. Students who have taken ENGL 103 may take ENGL 115–125 for humanities distribution requirements. 3 semester hours

**ENGL 119 LITERATURE AND CRITICAL WRITING—  
SPORTS LITERATURE (W)**

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 is 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. This course contributes toward satisfying the humanities distribution requirement. All sections are writing enriched. Satisfies a humanities general education requirement for non-majors. Students pursuing majors that require ENGL 102 should register for ENGL 102, and consult with advisors to identify the theme and focus for their preferred section. Once the 102 requirement has been completed, students may register for a course from ENGL 115 to 125 to fulfill a humanities general education requirement, as long as a different theme and focus is chosen. Students whose majors do not require ENGL 102 may register for sections of ENGL 115–125 to fulfill a humanities general education requirement. Prerequisite: ENGL 101 or 103 or equivalent. Students who have taken ENGL 103 may take ENGL 115–125 for humanities distribution credit. 3 semester hours

**ENGL 120 LITERATURE AND CRITICAL WRITING—  
FILM AS NARRATIVE (W)**

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. This course contributes toward satisfying the humanities distribution requirement. All sections are writing enriched. Satisfies a humanities general education requirement for non-majors. Students pursuing majors that require ENGL 102 should register for ENGL 102, and consult with advisors to identify the theme and focus for their preferred section. Once the 102 requirement has been completed, students may register for a course from ENGL 115 to 125 to fulfill a humanities general education requirement, as long as a different theme and focus is chosen. Students whose majors do not require ENGL 102 may register for sections of ENGL 115–125 to fulfill a humanities general education requirement. Prerequisite: ENGL 101 or 103 or equivalent. Students who have taken ENGL 103 may take ENGL 115–125 for humanities distribution credit. 3 semester hours

**ENGL 121 LITERATURE AND CRITICAL WRITING—  
INTRODUCTION TO SHAKESPEARE (W)**

Shakespeare continues to be a central part of American education, and almost no student enters college without having encountered his plays. This course, therefore, is not really an introduction to Shakespeare. Instead, it is an introduction to the variety of ways to engage with the plays. In addition to reading the plays as literature, approaches may include editing the text, watching or creating performances, and interacting with adaptations, as well as considering the question of why Shakespeare is so highly regarded. This course is not open to students who have completed ENGL 336. This course contributes toward satisfying the humanities distribution requirement. All sections are writing enriched. Satisfies a humanities general education requirement for non-majors. Students pursuing majors that require ENGL 102 should register for ENGL 102, and consult with advisors to identify the theme and focus for their preferred section. Once the 102 requirement has been completed, students may register for a course from ENGL 115 to 125 to fulfill a humanities general education requirement, as long as a different theme and focus is chosen. Students whose majors do not require ENGL 102 may register for sections of ENGL 115–125 to fulfill a humanities general education requirement. Prerequisite: ENGL 101 or 103 or equivalent. Students who have taken ENGL 103 may take ENGL 115–125 for humanities distribution credit. 3 semester hours

**ENGL 122 LITERATURE AND CRITICAL WRITING—  
GENDER AND GENRE (W)**

This course examines the ways that men and women use literary expression from past to present to explore and reflect upon gender. Students study the literary forms, genres, and techniques that women writers use to share their experiences around work, family, love, sex, the body, as well as to respond to male literary tradition. This course contributes toward satisfying the humanities distribution requirement. All sections are writing enriched. Satisfies a humanities general education requirement for non-majors. Students pursuing majors that require ENGL 102 should register for ENGL 102, and consult with advisors to identify the theme and focus for their preferred section. Once the 102 requirement has been completed, students may register for a course from ENGL 115 to 125 to fulfill a humanities general education requirement, as long as a different theme and focus is chosen. Students whose majors do not require ENGL 102 may register for sections of ENGL 115–125 to fulfill a humanities general education requirement. Prerequisite: ENGL 101 or 103 or equivalent. Students who have taken ENGL 103 may take ENGL 115–125 for humanities distribution credit. 3 semester hours

**ENGL 123 LITERATURE AND CRITICAL WRITING:  
LITERATURE OF THE GAY AND LESBIAN  
EXPERIENCE (W)**

This course introduces students to writing by historical and contemporary LGBTQ writers. Skills in analysis and in critical thinking are enhanced. This course contributes toward satisfying the humanities distribution requirement and is writing enriched. Satisfies a humanities general education requirement for non-majors. Students pursuing majors that require ENGL 102 should register for ENGL 102, and consult with advisors to identify the theme and focus for their preferred section. Once the 102 requirement has been completed, students may register for a course from ENGL 115 to 125 to fulfill a humanities general education requirement, as long as a different theme and focus is chosen. Students whose majors do not require ENGL 102 may register for sections of ENGL 115–125 to fulfill a humanities general education requirement. Prerequisite: ENGL 101 or 103 or equivalent. Students who have taken ENGL 103 may take ENGL 115–125 for humanities distribution credit. 3 semester hours

**ENGL 124 LITERATURE AND THE ENVIRONMENT (W)**

The literary imagination has depicted the natural world in varied ways—as untamed wilderness, pastoral ideal, scenic and sublime landscapes, and the damaged and threatened environment of industrialized society. Whenever human impact on the non-human environment has changed, authors have continued re-imagining nature’s significance and rethinking relationships between environment, self and society. In this course, students explore how the natural environment gets mythologized, celebrated, altered, lost, lamented, and recovered

in works of classic and contemporary literature. The course investigates the work of nature writing as genre—its common tropes, archetypes, and aesthetic strategies. Students use literary interpretation as a lens for seeing and reflecting on a range of environmental issues such as sustainability, ecology, urbanization, pollution, overpopulation, consumerism, tourism, climate change, animal rights, and land stewardship. They are also asked to situate their own experience of nature into environmental discourse. This course contributes toward satisfying the humanities distribution requirement. All sections are writing enriched. Satisfies a humanities general education requirement for non-majors. Students pursuing majors that require ENGL 102 should register for ENGL 102, and consult with advisors to identify the theme and focus for their preferred section. Once the 102 requirement has been completed, students may register for a course from ENGL 115 to 125 to fulfill a humanities general education requirement, as long as a different theme and focus is chosen. Students whose majors do not require ENGL 102 may register for sections of ENGL 115–125 to fulfill a humanities general education requirement. Prerequisite: ENGL 101 or 103 or equivalent. Students who have taken ENGL 103 may take ENGL 115–125 for humanities distribution credit. 3 semester hours

**ENGL 125 LITERATURE AND CRITICAL WRITING:  
IDENTITIES AND VOICES IN AMERICAN  
LITERATURE (W)**

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. This course contributes toward satisfying the humanities distribution requirement. All sections are writing enriched. Satisfies a humanities general education requirement for non-majors. Students pursuing majors that require ENGL 102 should register for ENGL 102, and consult with advisors to identify the theme and focus for their preferred section. Once the 102 requirement has been completed, students may register for a course from ENGL 115 to 125 to fulfill a humanities general education requirement, as long as a different theme and focus is chosen. Students whose majors do not require ENGL 102 may register for sections of ENGL 115–125 to fulfill a humanities general education requirement. Prerequisite: ENGL 101 or 103 or equivalent. Students who have taken ENGL 103 may take ENGL 115–125 for humanities distribution credit. 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. Satisfies a humanities general education requirement for non-majors. 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. Satisfies a humanities general education requirement for non-majors. 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. Satisfies a humanities general education requirement for non-majors. 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. Satisfies a humanities general education requirement for non-majors. 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. Satisfies a humanities general education requirement for non-majors. 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. Satisfies a humanities general education requirement for non-majors. 3 semester hours

**ENGL 205 PROMOTING COMMUNITY LITERACY AT THE CHESTER WRITERS HOUSE**

This course introduces students to community engagement, writing center work, and literacy's power to effect social change. The Chester Writers House focuses on encouraging public artistic expression; building community; exploring a sense of voice, identity, and agency; and fostering intellectual openness, an understanding of narrative capital, and the power of story as we. As Ellen Cushman suggests in "The Rhetorician as an Agent of Social Change," "use language and literacy to challenge and alter the circumstances of daily life." This academic service-learning course prepares students to perform community writing center work, tutoring one-on-one, developing workshops, and fostering community relationships. After the successful completion of the course, students have the option to become permanent tutors at the Chester Writers House. Prerequisite: ENGL 101 or 103. 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 WRITING FOR THE PUBLIC**

This course explores the theory and practice of writing nonfiction prose for specific public purposes. It is an advanced study of modes of textual and verbal communication ranging from tweets to blogs to essays. A major focus of the course is the role of the public intellectual and writing in the public sphere, with attention given to theorists and thinkers such as Habermas, Arendt, Nussbaum, Foucault, and others. The course culminates in an extended work of long-form essay writing, examples of which make up a substantial portion of the content to be read and studied. Prerequisite: ENGL 101 or 103. 3 semester hours

**ENGL 313 GENRE STUDIES: NARRATIVE FILM**

The rise of film as an artistic medium and as a vehicle for storytelling has shaped our understanding of narrative in the 20th and 21st centuries. We can learn a great deal about how stories work in terms of character, theme, and perspective through the study of film, and an appreciation of how film directors, actors, and their creative teams have developed and exploited the medium through specific artistic choices can deepen our grasp of how narrative works in a variety of genres and contexts. This course offers the opportunity to explore cinema in depth, using critical studies and film theory to develop vocabulary and techniques to analyze an array of special topics given on a rotating basis—from screwball comedy to cinema of the 1970s; from the work of Billy Wilder to the Coen Brothers; from women in film to westerns. Satisfies a 300-level English elective for majors and minors or a humanities general education requirement for non-majors. Prerequisite: ENGL 102, ENGL 103, ENGL 120, or COMS 130, or permission of the instructor. 3 semester hours

**ENGL 314 GENRE STUDIES: GRAPHIC NARRATIVE**

Graphic narrative—fiction, nonfiction, and life writing—has emerged as an important form in late-20th- early-21st century literary study and in the literary marketplace. More than just comic

books, graphic narrative engages with subjects as personal as coming of age and mourning, as global as 9/11 and conflict in the Middle East, and everything in between. The form allows for the opportunity to think about the relationship between word and image, author and artist. This course examines the way these books use sophisticated storytelling strategies, as well as visual innovation. It provides a survey of the form and focuses on significant works of graphic narrative. Satisfies a 300-level English elective for majors and minors or a humanities general education requirement for non-majors. 3 semester hours

**ENGL 315 GENRE STUDIES: LIFE WRITING**

It seems as though everyone has a life story to tell—from memoirs and social media to biopics and reality television, people feel compelled to tell the stories of their lives, and readers and audiences feel compelled to consume them. In this course, students study and analyze the artistic and cultural phenomenon of life writing with a focus on narrative technique. Texts are drawn from biography, autobiography, memoir, graphic narrative ("autography"), and film. Satisfies a 300-level English elective for majors and minors or a humanities general education requirement for non-majors. 3 semester hours

**ENGL 316 GENRE STUDIES: LITERARY CRITICISM**

An advanced study of critical thinking and writing about literature. The course may survey major developments in literary criticism from Aristotle to the present, or it may focus specifically on a limited number of schools or approaches. Students read the works of some of the best literary critics and practice writing their own critical essays on these models. The course may combine a workshop format with lecture and discussion formats. Recommended for English majors and minors, creative writing majors and minors, and for students seeking teaching certification in English or language arts. Prerequisite: ENGL 102 or 103. 3 semester hours

**ENGL 317 GENRE STUDIES: 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). Satisfies a 300-level English elective for majors and minors or a humanities general education requirement for non-majors. 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. Satisfies a 300-level English elective for majors and minors or a humanities general education requirement for non-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. Satisfies a 300-level English elective for majors and minors or a humanities general education requirement for non-majors. 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. Satisfies a 300-level English elective for majors and minors or a humanities general education requirement for non-majors. 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. Satisfies a 300-level English elective for majors and minors or a humanities general education requirement for non-majors. 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. Satisfies a 300-level English elective for majors and minors or a humanities general education requirement for non-majors. 3 semester hours

**ENGL 330 STUDIES IN MEDIEVAL AND EARLY MODERN  
BRITISH LITERATURE**

An in-depth examination of an author, theme, or genre significant to medieval and early modern British literature. Topics vary according to student and faculty interest. Satisfies a humanities general education requirement for non-majors. 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 a humanities general education requirement for non-majors. 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. The course considers Shakespeare's influence on other authors, the plays in performance, and the variety of critical responses to his work. Satisfies a humanities general education requirement for non-majors. 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 a humanities general education requirement for non-majors. 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 a humanities general education requirement for non-majors. 3 semester hours

**ENGL 340 STUDIES IN 18TH AND 19TH CENTURY  
BRITISH LITERATURE**

An in-depth examination of an author, theme, or genre significant to 18th and 19th century British literature. Topics vary according to student and faculty interest. Satisfies a humanities general education requirement for non-majors. 3 semester hours

**ENGL 345 MILTON**

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 a humanities general education requirement for non-majors. 3 semester hours

**ENGL 346 18TH-CENTURY BRITISH LITERATURE**

A study of 18th-century literature from Great Britain, including some study of the late 17th century, the Restoration period. The course places particular emphasis on the works of Swift and Pope and examines various genres and modes of the period such as Restoration comedy, satire in prose and verse, the periodical essay, Enlightenment science and aesthetics, and literature of sensibility. Other authors studied may include Dryden, Behn, Defoe, Johnson, Wollstonecraft, and Godwin. Satisfies a humanities general education requirement for non-majors. 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 a humanities general education requirement for non-majors. 3 semester hours

**ENGL 350 STUDIES IN 19TH AND 20TH CENTURY  
BRITISH LITERATURE**

An in-depth examination of an author, theme, or genre significant to 19th and 20th century British literature. Topics vary according to student and faculty interest. Satisfies a humanities general education requirement for non-majors. 3 semester hours

**ENGL 356 VICTORIAN LITERATURE**

The Victorian Period (1832–1901) was a dynamic era caught between tradition and innovation. Victorian writers and thinkers questioned everything: the existence of God, the value of science and technology, the role of women, the purpose of work and art. They defined public life through ethical demands and social engagement and private life through new forms of intimacy and companionship—and tried to balance both. In this course, students study the poetry and prose of mid- and late-19th century England, considering social and historical context, literary technique, and relevance to our own lives. Emphasized authors may include Thomas Carlyle, Alfred Tennyson, Elizabeth Gaskell, Charles Dickens, George Eliot, Oscar Wilde. Satisfies a humanities general education requirement for non-majors. 3 semester hours

**ENGL 357 RISE OF 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 a humanities general education requirement for non-majors. 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 a humanities general education requirement for non-majors. 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 a humanities general education requirement for non-majors. 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 a humanities general education requirement for non-majors. 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 a humanities general education requirement for non-majors. 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 a humanities general education requirement for non-majors. 3 semester hours

**ENGL 365 RISE OF 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 a humanities general education requirement for non-majors. 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 a humanities general education requirement for non-majors. 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 a humanities general education requirement for non-majors. 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 a humanities general education requirement for non-majors. 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 a humanities general education requirement for non-majors. 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 a humanities general education requirement for non-majors. 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 a humanities general education requirement for non-majors. 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 a humanities general education requirement for non-majors. 3 semester hours

**ENGL 380 STUDIES IN AMERICAN LITERATURE**

An in-depth examination of an author, theme, or genre significant to American literature. Topics vary according to student and faculty interest. Satisfies a humanities general education requirement for non-majors. 3 semester hours

**ENGL 401 TEXTUAL SCHOLARSHIP**

This advanced experiential-learning course investigates how literary texts have come to be, how they have been, and how they ought to be transmitted. The primary goal of the course is for students to learn the principles behind the editions of literary texts that we read by putting them into practice. Students work closely with an instructor who is involved professionally in the editing, production, and/or representation of literary texts in print or in electronic form and thus gain experience working with literature and its transmission in academic publishing and digital humanities. The course is open only to English majors and may be repeated for free-elective credit. Students who complete 12 semester hours of ENGL 401 will receive a certificate in textual scholarship. Prerequisite: Two 300-level literature courses with grades of C or better. 3 semester hours

**ENGL 405 WRITING PRACTICE**

A course for English majors to earn credit while gaining practical experience working under the supervision of professionals in relevant fields. Interested students must consult with the instructor to approve the proposed experience and, if approved, to determine the appropriate requirements and schedule of appropriate communication between the student, instructor, and professional supervisor. The course does not satisfy a humanities or upper-level English major requirement. It may be repeated for additional elective credit. 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: At least three 300-level literature courses with grades of C or better. 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 SPECIAL TOPICS IN ENGLISH**

Topics offered in response to student and faculty interest. 3 semester hours each

## ENVIRONMENTAL SCIENCE

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### 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. No prerequisites. 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. No prerequisites. 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. No prerequisites. 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 180 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 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**

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. 3 hours lecture. 3 hours laboratory. 4 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: 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. Prerequisite: BIOL 261. 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 361 ADVANCED GEOGRAPHIC INFORMATION SYSTEMS**

This course introduces students to the advanced features of spatial data analysis and how to analyze these features within the context of a geographic information system (GIS). In this course, students explore and interpret datasets that possess a spatial relationship and that align to topics germane to the environmental, ecological, physical, and social sciences. Topics include the basic principles of spatial data analysis and visualization, distinct types of spatial data, spatial statistics, linear spatial data, interpretation of three-dimensional surfaces, and the professional presentation of maps. Prerequisite: ENVR 261. 3 semester hours

#### **ENVR 363 REMOTE SENSING AND DIGITAL MAPPING**

This laboratory course introduces students to remote sensing techniques and the field collection of digital data for importation into a geographic information system (GIS). In this course, students collect and analyze geographic datasets in the environmental, ecological, physical, and social sciences. Topics include the basic principles of remote sensing and global positioning systems (GPS), the analysis of remote sensing and GPS data, types and accuracy of GPS data, and the field collection of GPS data using high-accuracy handheld GPS units. The application of these techniques for research and industrial projects is emphasized. Prerequisite: ENVR 261. 3 semester hours

#### **ENVR 365 HYDROLOGY (FORMERLY ENVR 388)**

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 403 ADVANCED ENVIRONMENTAL GEOLOGY**

This course introduces students to advanced topics in geology that apply to the characterization of the geologic environment at a site-specific scale. The course is divided into two subject areas. The first half of the course introduces the basic principles of structural geology and their applications to engineering and environmental site characterizations. It includes the study of folded and faulted structures, the orthogonal and stereographic solutions to characterize near-surface geologic structure, and the construction and interpretation of geologic maps, geologic cross sections, and block diagrams. The second half of the course concentrates on the occurrence and distribution of earth's surficial materials and their engineering and environmental properties. The geochemistry of soil formations that

influence the engineering and environmental index properties is emphasized as a function of the soils origin. The geohazards of surficial processes are also studied in the context of geologic history and the planning and use of the geologic environment. Prerequisite: ENVR 201 or ENVR 300. 3 semester hours

#### **ENVR 405 GEOLOGICAL FIELD METHODS**

This is a laboratory course that introduces students to interpretation methods used by geologists to identify existing field conditions for rock and soil formations. The course is intended for all students who require a working knowledge of the geologic conditions encountered in the characterization of the natural environment. Topics include the field measurement and interpretation of exposed rock and soil formations, field investigation techniques for rock and soil formations, quantitative interpretation of engineering and environmental index properties of soil and rock formations from field data, computerized mapping techniques for the visualization of field data, and the presentation of field data for professional reports. Prerequisite: ENVR 201 or ENVR 300. Corequisite: ENVR 403. 1 semester hour

#### **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**

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 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 301 PROFESSIONAL FUND MANAGEMENT**

This course provides an in-depth analysis of the complexities and investment opportunities in mutual funds by emphasizing the uniqueness of the U.S. fund industry. Topics include the structure and working of a typical fund complex; the role of various entities such as fund management, portfolio manager, custodian in operating a fund; fees and expenses associated with investing in funds; services available to shareholders, etc. Understanding of investment theory is stressed and is tied in with application of techniques to select mutual funds based on a client's investment objective and risk tolerance. Data and information from Bloomberg is extensively used for making mutual fund investment decisions. Corequisite: FIN 303. 3 semester hours

### **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 (SAME AS EC 335)**

This course explores the theory and practice of investments, covering topics such as risk and return, capital market structure, security analysis, bond valuation, and portfolio management. Special emphasis is placed on how economic forces influence the pricing of financial assets. Understanding of investment theory is stressed and is tied in with application of techniques such as asset valuation and portfolio theory. Students apply a "top-down" valuation method to determine if a security is over-valued or under-valued and make subsequent trading decision using StockTrak. Data and information from Bloomberg is extensively used for making investment decisions. This course fulfills one of the requirements for the Certified Financial Planner (CFP®) examination. Also cross listed with EC 335. Students may not receive credit for both courses. 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 335 INVESTMENTS**

This course explores the theory and practice of investments, covering the topics such as risk and return, capital market structure, security analysis, bond valuation, and portfolio management. Special emphasis is placed on how economic forces influence the pricing of financial assets. Understanding of investment theory is stressed and is tied in with application of techniques such as asset valuation and

portfolio theory. Students apply a "top-down" valuation method to determine if a security is over-valued or under-valued and make subsequent trading decision using StockTrak. Data and information from Bloomberg is extensively used for making investment decisions. This course fulfills one of the requirements for the Certified Financial Planner (CFP®) examination. Also cross listed with FIN 305. Students may not receive credit for both courses. Prerequisite: FIN 303. 3 semester hours

### **FIN 401 MONEY AND FINANCIAL INSTITUTIONS**

Students analyze the effects of credit and money flows on aggregate economic activity: for example, 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 money theories; and the role of money in the inflationary process. This course is offered only in the spring semester. This course is cross listed as EC 401 and students cannot take both FIN 401 and EC 401. Prerequisites: EC 101 and 202 or equivalents. 3 semester hours

### **FIN 406 PORTFOLIO THEORY AND MANAGEMENT**

This course is an in-depth study of the theory and practice of modern portfolio management. Students gain hands-on experience through construction and monitoring of an equity portfolio that is consistent with a client's investment objective and risk tolerance. Students develop an Investment Policy Statement for an individual investor, perform stock screening using both qualitative and quantitatively screening criteria and apply optimization technique to create an optimal investment portfolio that satisfies the investment requirements. Students will learn various strategies to test the portfolio constructed, issues that impact portfolio performance in achieving investment objectives, and finally evaluate its performance. All stock transactions are conducted using StockTrak. Data and information from Bloomberg is extensively used in constructing the optimal portfolio. Prerequisite: FIN 303. 3 semester hours

### **FIN 423 INTERNATIONAL FINANCIAL MANAGEMENT**

This course explores the topics related to international financial management and international trade. Companies operating globally are different from their domestic counterparts due to their exposure to foreign exchange risk and political risks. This course addresses the distinct risk exposures faced by multinational companies and the financial tools that are available to them to address issues such as capital budgeting, capital structure, investment decisions and valuation. Prerequisite: FIN 303. 3 semester hours

### **FIN 427 OPTIONS AND DERIVATIVES**

This course teaches students how to understand and value the wide variety of financial derivatives products available. The course examines the properties of options and other derivatives, theoretical frameworks within which all derivatives can be valued and hedged, such as binomial approach and the practical applications of real-world financial derivatives. Topics include basic futures and forwards, hedging with futures and forwards, interest-rate forwards and futures, options, trading strategies involving options, swaps, and valuation using a binomial model and the Black-Scholes model. Prerequisites: FIN 303 and QA 252. 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. Prerequisites: ACCT 405, ACCT 408, FIN 305. Corequisites: ACCT 409 and FIN 320, but it is recommended to complete these prior to taking FIN 453. 3 semester hours

#### **FIN 497 INTERNSHIP IN FINANCE**

This is a required internship course for students majoring in finance. The purpose of this internship is to provide students with career-relevant on-the-job experiences where finance knowledge obtained from classroom theory is integrated with actual practical work experiences. Each student is required to work for a minimum of 150 hours per semester in finance/financial services related position. Internship positions can be paid or unpaid, but most positions are paid. Grading is based on the following elements, supervisor's evaluation, internship activity logs, internship project, and final presentation. Students must receive internship approval for academic credit prior to starting an internship. Prerequisites: finance major, FIN 303, and junior standing.

#### **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. Note: This course can only be taken pass/no pass as a free elective. 3 semester hours

## **FINE ARTS**

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*See also courses listed under Art History, Art Studio, Dance, and Music.*

#### **ARTS 101 INTRODUCTION TO FINE ARTS**

This course examines the interdisciplinary nature of the arts and incorporates materials from disciplines within the fine arts—dance, music, theater, and visual arts. 3 semester hours

#### **ARTS 111 INTRODUCTION TO ARTS MANAGEMENT**

This course provides an introduction to the inner workings of nonprofit visual and performing arts organizations. Students examine the field of arts management; the social, economic, and political trends that shape arts organizations; professional opportunities in the field; working with artists; the multiple programming and administrative activities of arts organizations; marketing and audience development; and the use of new technologies. The course combines lectures and discussions with guest speakers, behind-the-scenes field trips to arts organizations, and student presentations and projects. 3 semester hours

#### **ARTS 311 ADVANCED ARTS MANAGEMENT**

This course focuses on current concerns and issues facing 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 and minors 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. Prerequisite: Fine arts major or minor. 3 semester hours

#### **ARTS 405 ARTS PRAXIS**

This course is an independent experiential learning project in arts organizations. Students support a variety of nonprofit arts organizations, where they are involved in meaningful projects and ongoing operations and learn the organizational structure and operations of the host agency. Students are not 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**

Only offered in the fall semester. 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**

##### **SPECIAL TOPICS IN FINE ARTS**

Topics offered in response to student and/or faculty interest. 1–3 semester hours

## **FRENCH**

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See courses listed under Modern Languages.

## **FRESHMAN STUDIES**

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#### **FRS 101 FRESHMAN SEMINAR**

The transition from high school to college requires intellectual as well as social and emotional competencies. This course acquaints students with the social and emotional skills associated with emotional intelligence, and facilitates discussion of the direct application of these skills to students' personal and academic life. 1 semester hour

## **GENDER, WOMEN, & SEXUALITY STUDIES**

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*For the full list of Gender, Women, and Sexuality Studies related courses that fulfill the GWS major/minor requirements, see page 79.*

#### **GWS 101 INTRODUCTION TO GENDER, WOMEN, & SEXUALITY 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 in humanities or social sciences (varies each semester). 3 semester hours

#### **GWS 239 WOMEN AND DEVELOPMENT IN LATIN AMERICA (SAME AS SOC 239 AND ANTH 239)**

This team-taught service-learning travel course engages students in thinking about the challenges of development in Latin America, with particular emphasis placed upon the gendered dimensions of both development theory and practice. Through a combination of readings, films, lectures, discussion, and travel to a developing region in Mexico, Central America, or South America where women play key roles in development, students will be challenged to understand the burdens placed on women in underdeveloped nations as well as the roles that women have played in that region's development. During all phases of this course, students are expected to reflect on their readings, service, and other experiences. 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 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, women, and sexuality studies. Permission of the chair 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. 3–6 semester hours

### **GWS 409 SENIOR CAPSTONE**

This is a senior-level research course in a specialized area of gender, women, and sexuality studies available to all gender, women, and sexuality studies majors. This is a writing enriched course. Prerequisite: GWS 355 or permission of instructor. 3 semester hours

### **GWS 499 INDEPENDENT STUDY**

Students undertake independent study of significant issues concerning gender, women, and sexuality studies. A topic, approved by the instructor and the director of gender, women, and sexuality 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 chair of gender, women, and sexuality studies. Students must have a junior or senior standing. 3–6 semester hours

### **GWS 188, 288, 388, 488**

#### **SPECIAL TOPICS IN GENDER, WOMEN, AND SEXUALITY STUDIES**

Topics offered in response to student and/or faculty interest. 1–3 semester hours

## **GERMAN**

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See courses listed under Modern Languages.

## **HISTORY**

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### **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 (1300–1789)**

A study of select themes in European history from the later Middle Ages to the French Revolution. Topics of special interest include the Renaissance, the Reformation, the Scientific Revolution, the Enlightenment, and the start of the French Revolution. 3 semester hours

### **HIST 102 WESTERN CIVILIZATION III (1789–PRESENT)**

A study of select themes in European history from the French Revolution to the present. Topics of special interest include the emergence of liberalism, nationalism, the growth of industrialization, socialism, and militarism. 3 semester hours

### **HIST 104 WOMEN IN THE WESTERN TRADITION**

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. This course fulfills requirements for the GWS major and minor. 3 semester hours

### **HIST 105 WIVES, WITCHES, AND WARRIORS (HONORS)**

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). This course fulfills requirements for the GWS major and minor. 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 GODS, EMPIRES, AND ENGINES: WORLD CIVILIZATIONS SINCE 1500**

This course explores key currents in global history since 1500. It focuses on close reading of primary sources—from the Islamic *Quran* to training manuals used by Japanese samurai, from Gandhi's autobiography to Lenin's speeches, from diaries of Portuguese missionaries to edicts of Chinese emperors. Through journals, class discussions, and research projects, students analyze how diverse cultures—African, Chinese, European, Indian, American and Islamic—interacted with each other at different points in time; how cultural, political, and economic events in one region affected others; and how these societies shaped our modern world. 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**

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. This course fulfills requirements for the GWS major and minor. 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 SEX AND GENDER IN EUROPEAN HISTORY**

This course examines the political, economic, social, and cultural developments that occurred in Europe since the Renaissance with a focus on gender, family, marriage, sex, and sexuality. The purpose of the course is to familiarize students with gender as an analytical category as distinguished from sex, make students conscious of the variability of gender, and knowledgeable of the forces that have acted upon gender and sexuality in the past. Students explore themes such as gender construction, norms and transgressions; marriage and the family; concepts of masculinity/femininity and respectability; paternity; sex, deviance, and sexual danger; regulation, repression, and liberation; and the relationship between the state and the private lives of individuals. This course fulfills requirements for the GWS major and minor. 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 FACISM, 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**

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. This course fulfills requirements for the GWS major and minor. 3 semester hours

**HIST 352 HISTORY OF WOMEN IN AMERICA SINCE 1870**

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 counterculture, the civil rights movement, the Vietnam War, and recent ideological conflict between liberalism and conservatism. 3 semester hours

**HIST 364 RACE, VIOLENCE, AND MEMORY (HONORS)**

An investigation of selected episodes of violent racial conflict in American history, with particular emphasis on clashes between African Americans and white Americans. Students explore collective memory of the African slave trade, slave revolts, black military participation, lynchings, race riots, and violence during the civil rights movement. Sources include fiction, films, official records, oral histories, and historians' accounts. The course culminates in an oral history project on the civil rights demonstrations in 1960s Chester, Pennsylvania. 3 semester hours

**HIST 371 WOMEN AND WORK IN THE 20TH CENTURY UNITED STATES**

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. This course fulfills requirements for the GWS major and minor. 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 RESISTANCE**

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 386 SAMURAI JAPAN: 1192–1868**

The Samurai era in Japan began with the Kamakura period (1192–1333) and ended with the 1868 Meiji Restoration. During this long span of Japanese history, elite warriors in Japan enjoyed significant political power. As rulers, administrators, land-managers, scholars, physicians, and martial arts instructors, they profoundly influenced the whole of Japanese society and in particular Japanese masculinity. Through studying the changing population, status, values, training, and individual experiences of the samurai class, students gain a critical understanding of feudalism, economy, religion, culture, gender relations, and daily life in medieval and early-modern Japan. This course fulfills requirements for the GWS major and minor. 3 semester hours

### **HIST 390 U.S.–CHINA RELATIONS**

This course is an overview of U.S.–China relations since 1900. Topics include the 1900 Boxer Uprising, the U.S.–China alliance against Japan during WWII, the U.S.–China military conflict during the Korean War, Henry Kissinger's secret visit to communist China in 1971, and current trade disputes. Throughout the semester, students analyze how cultural identities, geo-political interests, commercial interests, religious establishments, and prominent individuals have influenced the historical trajectory of the relationship between the two countries. 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 SEX, GENDER, AND CULTURE IN CHINA**

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. This course fulfills requirements for the GWS major and minor. 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 398 THE TWO KOREAS**

Despite a shared cultural and historical heritage, the two Koreas have moved in radically different directions since national division in 1945. Who divided Korea? How do we explain North Korea's extreme totalitarianism and cult of personality? How do we account for South Korea's economic miracle and its transformation from a military dictatorship to one of Asia's most stable democracies? How can we understand the strong nationalist sentiment in both Koreas? Moreover, how do we appreciate the experiences of ordinary Koreans who have been caught in dramatic, tumultuous, and frequently devastating political, economic, and social transformations? This course seeks to understand Korea and its recent past by engaging both secondary and primary sources. To shed light on the above questions, students analyze the themes central to the fields of modern Korean history: colonialism and post-colonialism, communism and capitalism, democracy and authoritarianism, tradition and modernity. 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 in the designated preparatory course. This course may only be attempted twice. 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**

##### **SPECIAL TOPICS IN HISTORY**

Topics offered in response to student and faculty interest. 3 semester hours each

## **HONORS PROGRAM 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

#### **ASC 390 WAYS OF KNOWING (HONORS)**

Students strive to understand how knowledge is constructed. To understand our complex world, students must develop a multidimensional consciousness of the human condition. This course explores these ideas using a case-study approach that concentrates specifically on Africa. Students explore the differences among science, religion, ethics, culture, and other ways of understanding our diverse world. Open only to students in the Honors Program in General Education. 3 semester hours

#### **ASTR 136 COSMOLOGIES ANCIENT AND MODERN (FORMERLY PHYS 136) (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

#### **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 non-science majors in the Honors Program in General Education. 3 semester hours

#### **BIOL 118 NEUROANATOMY, FUNCTION, AND DISEASE: HOW YOUR BRAIN WORKS (HONORS)**

The brain is a complex organ that is the center of the human nervous system. The wide array of human behaviors is a function of how the brain receives, processes, and responds to sensory input from our environment. This course explores the anatomy of the brain and how that anatomy powers human brain function. Neurological diseases are examined in the context of the physiological function of nervous tissue. No prerequisites. 3 hours lecture. 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 101 on student transcripts. Students cannot receive credit for both EC 103 and EC 101. 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)**

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 318 SPANISH AND LATIN AMERICAN CINEMA (HONORS)**

This course examines the representation of Spanish and Latin American identity, culture, and history through cinema. Students should expect to attend film screenings once a week in addition to the regularly scheduled class time. The course is taught in English and the films are subtitled. 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 381 MUSIC, WAR, AND THE ART OF PERSUASION (HONORS)**

This course examines compositions written in response to two historical events of the 20th century—World War II and the Vietnam War. These works, both American and European, reflect the emerging voice of the composer, moving from demonstrations of support to commentary on war and wartime events, to protest. It offers students the opportunity to investigate the art of composition from the creator's perspective and to explore music's power to communicate and persuade. 3 semester hours

**MUS 391 20TH-CENTURY AMERICAN MUSICAL (HONORS)**

The American musical is a distinctively American art form that took shape during the first half of the 20th century. Throughout the century, it developed and evolved, reflecting events and changes in American society and culture. This course considers selected American musicals through the lens of entertainment, identity, ethnicity, and genre. Using original literary texts as a point of departure, students examine the transformation of these works from play, novel, or short story to musical, and determine how music and lyrics serve, ignore, or contradict the dramatic themes and ideas. 3 semester hours

**PHIL 116 PHILOSOPHICAL IDEAS (HONORS)**

This introductory honors course offers readings in classical as well as modern sources. The emphasis is on social, political, ethical, epistemological, and metaphysical issues; the course includes consideration of questions raised by both oriental and Western systems. No prerequisite. 3 semester hours

**PHIL 360 PHILOSOPHY OF SEX AND LOVE (HONORS)**

This course provides an examination of philosophical issues relating to romantic love and human sexuality. Readings include philosophical and literary selections from a variety of intellectual perspectives, including contemporary feminist thought, Christian thought, Classical Greek thought, psychoanalytic perspectives, Marxist thought, and modern analytic thought. This course satisfies Humanities general education distribution requirements. 3 semester hours

**PHIL 381 HONORS AESTHETICS**

This honors course considers a range of classic aesthetic theories, and a number of central problems in aesthetics. Among the issues discussed are the definition of art, the nature of aesthetic value and evaluation, the relationship between art and morality, and questions of style and form. The major aesthetic theories discussed are Formalism, Mimetic theory, and Expressionism. Various works of art, including examples from poetry, film, music, architecture, painting, sculpture, and photography will be used in discussing these theories and problems. This course satisfies the distribution requirements for humanities. 3 semester hours

**PHYS 135 THE PHYSICS OF LIGHT (HONORS)**

A conceptual study of the physics of light. Using minimal mathematics, the course will follow the path that the physical understanding of light has followed, from Newton's times to the present. Lab exercises are designed to observe and study the fascinating properties of light. For nonscience majors in the Honors Program. Three hours lecture, two hours laboratory. 4 semester hours

## **HOSPITALITY MANAGEMENT**

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**HM 100 SUMMER FIELD EXPERIENCE I**

The first of two required paid summer field experiences. All students must complete two summer hospitality industry work experiences of 400 hours each, one after the freshman year and one after the sophomore year. The HM 100 field experience workbook is to be completed through the course of the summer and will include the employer's evaluation. The workbook is returned to the student's faculty advisor in the beginning of the fall semester. This is a non-credit requirement and a prerequisite for registration in the required cooperative education semester.

**HM 101 INTRODUCTION TO THE TOURISM AND HOSPITALITY INDUSTRY**

This course provides an overview of the global tourism and hospitality industry and the many segments that it encompasses in the context of managing the service experience. Students are exposed to the various functions of each segment, as well as contemporary issues, trends, career options, and the complex role of the manager. Professionalism in the hospitality industry is emphasized and students learn the importance of corporate social responsibility through participation in service-learning projects. Service-learning course. 3 semester hours

**HM 102 INTRODUCTION TO LODGING MANAGEMENT**

This course provides an overview of the lodging industry in the context of managing the service experience. Emphasis is placed on the management of the rooms 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. 3 semester hours

**HM 107 INTRODUCTION TO FOOD PREPARATION**

This course introduces students to the basic principles of food preparation. The areas of study cover basic nutrition; food and kitchen safety and sanitation practices; proper use of kitchen tools and equipment; reading and understanding recipes, basic measurements and conversions, food identification and terminology; and basic culinary techniques. Food labs and demonstrations play a significant role in the course. Each student must purchase an exam code for a nationally accepted sanitation certification and a uniform prior to the start of the course. 4 semester hours

**HM 204 HUMAN RESOURCE MANAGEMENT IN THE TOURISM 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 in the service industry. These foundational areas provide the basis for exploration of the employment process, employee development, and employee communications. An historical perspective of management principles and their evolution into human resource arena are explored. 3 semester hours

**HM 205 INTRODUCTION TO EVENTS MANAGEMENT**

This course explores all the various areas that make up the comprehensive and vast events industry. Students are exposed to organizers and sponsors, key players, professional organizations, venues, and service contractors in the event industry. Students receive a certification in Cvent. 3 semester hours

**HM 207 INTRODUCTION TO FOOD AND SERVICE MANAGEMENT**

In this course, students learn about the management of the flow of foods (purchasing, receiving, storing, preparation, and service) in a food service environment. Standardized recipe development, costing, and management are introduced. Food preparation concepts introduced in HM 107 Introduction to Food Preparation are reinforced. These concepts are applied in the student managed restaurant. Emphasis is also placed on managing the service experience. 3 semester hours

**HM 210 MANAGING THE SERVICE EXPERIENCE**

This course provides an overview of management principles from both a historic and contemporary perspective. Students are introduced to the changing nature of service, service blueprinting, service quality models, understanding and engaging customers, and managing the service experience. 3 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. Prerequisite: HM 102. 3 semester hours

**HM 304 ACCOUNTING AND FINANCIAL MANAGEMENT IN THE TOURISM INDUSTRY**

This course provides theoretical and practical approaches to the most common financial decisions in the tourism and hospitality industry. General accounting topics include the accounting cycle, analysis, cost management, including internal controls, pricing strategies, and budgeting. Financial topics include the time value of money, discounted cash flows, average rates of return, payback periods, and risk and value in the tourism and hospitality firm, and valuation and

required rates of return. Prerequisites: ACCT 204 and ACCT 205. 3 semester hours

**HM 305 MEETINGS, EXPOSITIONS, EVENTS, AND CONVENTIONS MANAGEMENT**

In this course, students explore the meetings, expositions, events, and conventions (MEEC) industry and its diverse elements. Students identify the various roles, functions, and responsibilities of professionals involved in this industry, from both supplier and planner perspectives. Planning considerations are discussed for different types of gatherings, and appropriate venues are identified. Contemporary issues of the MEEC industry are explored. Finally, the overall economic impact and contribution of this industry is analyzed. 3 semester hours

**HM 306 MARKETING IN THE TOURISM INDUSTRY**

This course focuses on the study of marketing as it applies to service industries and specifically of marketing tourism properties. Topics include the introduction to the general principles of marketing, analysis and evaluation of the 4 Ps in the tourism industry, and application of the market segmentation concepts to the tourism industry. This is a writing-enriched course. 3 semester hours

**HM 310 APPLIED TECHNOLOGY IN THE TOURISM INDUSTRY**

This course exposes students to the various changing technologies that support the management of the service experience in the tourism industry. Contemporary systems in the various sectors of the tourism industry are explored. 3 semester hours

**HM 315 DATA ANALYTICS IN THE TOURISM INDUSTRY**

This course focuses on analyzing data in a strategic matter to facilitate problem solving and decision making in the tourism industry. Topics include identifying relevant application of social media and apps at mobile devices, as well as applying data analytics in marketing and customer loyalty, pricing and revenue management, and operations management. 3 semester hours

**HM 351 LABOR RELATIONS IN THE TOURISM INDUSTRY**

This course provides an in-depth exposure to the complex and dynamic nature of labor-management relations in the tourism industry. Students are exposed to the management of the collective bargaining process and union contracts. Within the labor relations process, students learn how to manage areas such as union organization campaigns, strikes, unfair labor practices, disciplinary procedures, grievances and arbitrations. 3 semester hours

**HM 352 FACILITIES MANAGEMENT IN THE TOURISM INDUSTRY**

This course exposes students to various maintenance and engineering situations that apply to facilities in the tourism industry. Topics include water, heating, ventilation and air conditioning, electrical, lighting, safety, security, structural systems, sustainability, and renovation and their impacts on the service experience. 3 semester hours

**HM 354 CLUB MANAGEMENT**

This course covers concepts of the history of 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 club industry. 3 semester hours

**HM 356 INTERNATIONAL TOURISM MANAGEMENT**

Students learn about the impact of the global tourism industry. Topics include cultural practices, globalization, tourism generators, tourism operations, destination development, tourism marketing, social media, sociocultural and environmental impacts on tourism, and niche tourism areas. Additionally, the differences between international tourism and tourism in the United States are addressed. Students will have the opportunity to visit an international tourist destination as part of this course. This course carries an additional fee separate from tuition for all costs associated with travel to the international tourist destination. 3 semester hours

**HM 361 MANAGED SERVICES**

This course introduces students to the various segments in the management services sector of the tourism industry. These segments

include hospital and health care facilities, education (college/university, K–12), sports, entertainment, destinations and cultural attractions, and business and government. The various services provided such as traditional food service, housekeeping, environmental services, and patient care are discussed. 3 semester hours

#### **HM 363 SPECIAL EVENTS MANAGEMENT**

This course teaches students how to plan and manage special events that occur in the tourism industry. Students learn the various components of managing a special event and apply this to the creation and management of a live event. 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 PRINCIPLES**

This course is part of the 15-credit co-op/leadership development seminar and must be taken in conjunction with two other courses: HM 401 Leadership Skills Assessment and HM 402 Applied Leadership Development. 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**

This course is a part of the 15-credit co-op/leadership development seminar. HM 401 must be taken in conjunction with HM 400 Leadership Principles and HM 402 Applied Leadership Development. Extensive use of the Myers-Briggs Type Indicator is employed in this course. Students develop critical thinking skills and self-awareness as they assess and analyze themselves, as well as other managers, from a variety of perspectives. Course projects focus on analyzing and developing qualities essential for successful leadership. 3 semester hours

#### **HM 402 APPLIED LEADERSHIP DEVELOPMENT**

This course is a part of the 15-credit co-op/leadership development seminar. HM 402 must be taken in conjunction with HM 400 Leadership Principles and HM 401 Leadership Skills Assessment. Students work in an approved and paid position in the tourism industry; they are required to work as full-time employees for a 16-week period, accruing a minimum of 600 hours during the semester. Students identify and complete on-the-job employment objectives, analyze organizational management styles, and develop an awareness of societal need in the context of civic responsibility throughout the semester. This leadership application is reflected upon during the seminar period. Prerequisites include two approved and completed 400-hour field experiences and senior status. 6 semester hours

#### **HM 403 LAW IN THE TOURISM INDUSTRY**

This course explores the legal rights and responsibilities of managers in the tourism industry. Topics include contract law, liability and negligence, and the duty of reasonable care. 3 semester hours

#### **HM 407 ADVANCED FOOD, BEVERAGE, AND SERVICE MANAGEMENT**

In this course, students experience the management cycle in a restaurant environment. Theoretical concepts include service management, operations management, human resource management, and financial management, which are applied in the student-managed restaurant. Students are able to develop their leadership skills throughout this course. 4 semester hours

#### **HM 450 BEVERAGE MANAGEMENT**

A study of beverage management in the tourism industry and its impact on the service experience. Topics include managing spirits, wines, beers, non-alcoholic beverages, responsible alcohol service, mixology, purchasing, controls, legislation, regulations, and current trends. Each student must purchase an exam code for a nationally accepted responsible alcohol management program certification. 3 semester hours

#### **HM 497 CAPSTONE EXPERIENCE**

This course gives the students the opportunity to revisit previous course concepts and apply the knowledge to strategic management in the tourism industry. Students work with industry partners to develop strategic recommendations for operational change. Students present these recommendations to a panel of faculty and industry professionals. 3 semester hours

#### **HM 499 INDEPENDENT STUDY**

Students may conduct independent research projects under the direction of a faculty member. 1–3 semester hours

## **HUMANITIES**

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#### **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 learn how to appreciate and analyze East Asian texts and better grasp the cultural legacies of East Asia. Students 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 301 THE BOOK: TEXT, OBJECT, AND EXPERIENCE**

This course is an advanced introduction to the study of the book and book history. The course focuses on written and printed documents from the late 16th century to the end of the 19th century, including manuscripts, letters, anthologies, broadsheets, newspapers, magazines, giftbooks, annuals, dictionaries, and commonplace books. Students study such topics as descriptive and analytical bibliography (the study of books, their composition, and production throughout history), paleography (the study of handwriting and manuscripts), reading and writing as cultural transaction, the rise of the periodical press, textual criticism and editing, contemporary reception, and other aspects of professional authorship and the publishing industry. Students also visit local libraries and museums to examine old books and manuscripts for themselves. Prerequisites: ENGL 102 or 103 and any history, art history, or music history course. 3 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**

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 405 DIGITAL HUMANITIES PRAXIS**  
Students propose and complete a digital humanities (DH) project, as well as compile a portfolio and deliver a formal, oral presentation of the portfolio and final project. The portfolio is a collection of DH projects over 3–4 years that includes a written reflection on the integration of COMS/CSCI coursework with their humanities major. Available only to humanities majors who are pursuing the DH concentration and with at least junior standing. 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  
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**  
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 mergency 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 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 and junior standing. 3 semester hours

**MHR 325 MANAGING 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 whether the theories of organization and management that have served us productively in the past will 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 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 and 365. 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. Note: This course can only be taken pass/no pass as a free elective. 3 semester hours

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## ITALIAN

See courses listed under Modern Languages.

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## JAPANESE

See courses listed under Modern Languages.

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## LEADERSHIP

**LEAD 101 INTRO TO LEADERSHIP THEORY**

This course is open to all students who have an interest in leadership and the role that leaders play in our society and world. Students examine a wide range of leadership theories, styles, and concepts, including the study of authentic leadership, ethical leadership, global leadership, and transformational leadership. By the end of the course, students are expected to demonstrate the ability to model and practice leadership as an influencing process. This highly interactive course incorporates personal reflection and collaborative projects. 3 semester hours

**LEAD 223 FOUR MINDSETS OF A LEADER**

This course explores four mindsets essential to exercising leadership: integrity, initiative, collaboration, and decision-making. Students critically examine recent research on each of these leadership mindsets and are challenged throughout the semester to more effectively use and apply each of the four mindsets when leading themselves or leading others. 3 semester hours

**LEAD 432 LEADERSHIP CAPSTONE**

This course integrates and crystallizes what students have learned about leadership throughout their Widener experience, both inside and outside the classroom. The course employs a variety of high-impact practices to challenge students to link and connect foundational leadership concepts with their own exercise of leadership. Each student designs their own capstone experience—for example, developing a leadership portfolio, shadowing a leader, or generating scholarship. 3 semester hours

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## MANAGEMENT

**MGT 100 UNDERSTANDING AND WORKING IN ORGANIZATIONS**

This introductory course is for freshman business students and those who want to explore a potential business 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 and begin professional preparation. This course also provides opportunities for student to become more actively engaged in the work of business by learning about local industries. This course plays a key role in establishing a foundation for subsequent courses in the SBA curriculum. 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 management thought with contemporary business and behavioral concepts. Students learn the role that managers play in guiding the business firm to success. The course focuses on the development of students' understanding of the four functions of management: planning, leading, organizing controlling at various levels. Furthermore, students demonstrate their understanding of the ethical and environmental impact of business decisions. Professional preparation continues with a focus on career exploration; networking and developing professional relationships; and career planning. Prerequisite: Sophomore standing. 3 semester hours

### **MGT 310 LEADERSHIP IN BUSINESS**

The ability to take charge and lead effectively is critical for success in today's performance-driven workplace. This course helps students develop self-awareness and interpersonal skills that they need to assume leadership roles in the early phases of their careers. In the area of professionalism, student 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. Professional preparation continues with a focus on professional communication, effective interviewing and career planning. Prerequisite: Junior standing and MGT 210. 3 semester hours

### **MGT 335 SUSTAINABILITY, INNOVATION, AND ENTREPRENEURSHIP**

Three trends are shaping the current business landscape: the role of entrepreneurs as the driving force in the global economy, the use of innovation to gain competitive advantage in the marketplace, and the move toward environmentally sustainable products, services, practices, and business models. These three trends represent the sweet spot for future job growth and career development in a variety of fields and industries. MGT 335 positions students to capitalize on these trends by helping them gain knowledge and develop competencies in the areas of entrepreneurship, innovation, and sustainability. Its interdisciplinary nature enables students to pursue careers in a diverse and changing world. Students engage in class discussion, problem solving, and experiential learning to assimilate the methods and skills of successful entrepreneurs with a focus on sustainability-related innovation in product, process, and strategy development. Students investigate complex issues, deliver oral presentations, meet and interact with business and technology leaders, and develop a personal journal, notebook, or blog. This course is suitable for students in business, technology, the arts, and sciences. Prerequisite: Junior standing. 3 semester hours

### **MGT 365 INTERNATIONAL BUSINESS**

The course is designed to present a specialized, managerial overview of environmental and operational issues of international business. Several related topical areas will be investigated. First, the course examines the scope and patterns of international business and the environments it confronts. Emphasis is placed on the economic, political, legal, financial, and cultural environments of international business. Second, the theories and institutions of international business are explored, with a focus on multinational corporations (MNCs) and their global strategy formulation and implementation. Prerequisite: ANTH 105, MGT 210, and junior standing. 3 semester hours

### **MGT 390 ENTREPRENEURSHIP AND SMALL BUSINESS MANAGEMENT**

The course deals with fundamental principles that would prove helpful to those preparing to enter the world of business or to those who intend to pursue specific advanced courses in finance, real estate, insurance, and law. Topics include forms of business organization, financing, insuring against business risks, acquisition and financing of real estate, business failures and reorganizations, and a general study of the "Bankruptcy Act and Rules." Prerequisite: MGT 210, FIN 303, and junior standing. 3 semester hours

### **MGT 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 and 300-level economics courses. 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 and 300-level economics courses. 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. 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**

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### **MIS 180 COMPUTING AND SPREADSHEETS**

Today's business professionals are expected to use data for decision making. This course is designed to provide the business student with an introduction to Excel and the use of spreadsheets for managerial decision making. Topics include formulas, introductory and intermediate functions (e.g., if, vlookup, and averageIF) and formatting, sorting and filtering, basic graphing, sensitivity analysis, pivot tables and data tables. There will be a strong emphasis on appropriate spreadsheet design and professionalism. 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. This course counts toward the SAP Recognition Award if a grade of C or above is earned. 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**

Object-oriented concepts are prevalent in today's organizations. 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. Design and development of business applications that are efficient and maintainable are emphasized. 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 design and write a number of applications to solve business problems. 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 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 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      BUSINESS INFORMATICS INTEGRATION**

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 or 370; 358; and 363. 3 semester hours

**MIS 497      CAPSTONE INTERNSHIP IN BUSINESS ANALYTICS**

This course provides opportunities for students to synthesize their understanding of the business analytics coursework through the application of classroom instruction in a work setting. Students work on projects developed with industry partners and prepare reports on these experiences with their academic and industry supervisors. Note: This course substitutes for MGT 451 in the business analytics curriculum and is only available to business analytics majors. Prerequisite: Senior standing, completion of all SBA core business courses with the exception of MGT 452, one 300-level economic course, and at least a 2.5 cumulative GPA. 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. Note: This course can only be taken pass/no pass as a free elective. 3 semester hours

## **MARKETING**

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### **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. 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 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: MKT 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: 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: MKT 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: 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: MKT 300 and MGT 365. 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: 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. Note: This course can only be taken pass/no pass as a free elective. 3 semester hours

## **MATHEMATICS**

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*Any student entering Widener who plans to take a MATH course other than MATH 101 as a first mathematics course may be required to 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, are 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 are solved using various counting techniques including permutations, combinations, inclusion-exclusion, and the binomial theorem. Various graph algorithms are studied and their complexities evaluated. Proof techniques are stressed. Prerequisite: MATH 151. 3 semester hours

**MATH 213 MATHEMATICAL IDEAS III**

This course is designed for students pursuing middle-level teaching certification. Emphasis is placed on learning concepts and developing an understanding of mathematics as a body of connected ideas. The NCTM *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 rational numbers, probability and counting, number theory, and algebra and functions. Prerequisites: MATH 111 and 112 or permission of the instructor. 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 queuing theory. Prerequisite: MATH 142 or MATH 133. 3 semester hours

**MATH 322 TOPICS IN DISCRETE MATHEMATICS**

This course concentrates on algorithmic thinking and proofs. Topics include sets and functions, relations and orders, counting techniques, analysis of algorithms, induction, recurrence relations, elements of the theory of numbers, and graph theory. Prerequisite: MATH 142 or MATH 133. Credit will not be granted for both MATH 322 and MATH 151–152. 4 semester hours

**MATH 325 HISTORY AND PHILOSOPHY OF MATHEMATICS**

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 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****SPECIAL TOPICS IN MATHEMATICS**

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 INTRODUCTION TO THE ARMY AND CRITICAL THINKING**

MS 101 introduces students to the personal challenges and competencies that are critical for effective leadership and communication. Students learn how the personal development of life skills, such as cultural understanding, goal setting, time management, stress management, and comprehensive fitness, relate to leadership, officership, and the Army profession. As students become further acquainted with MS 101, they learn the structure of the ROTC Basic Course program, consisting of MS 101, 102, 201, and 202; fall and spring Leadership Labs; and CIET. The focus is on developing basic knowledge and comprehension of Army leadership dimensions, attributes, and core leader competencies while gaining an understanding of the ROTC program, its purpose in the Army, and its advantages for the student. 1 semester hour

**MS 102 INTRODUCTION TO THE PROFESSION OF ARMS**

MS 102 introduces students to the professional challenges and competencies that are needed for effective execution of the profession of arms and Army communication. Through this course, students learn how Army ethics and values shape their Army and the specific ways

that these ethics are inculcated into Army culture. This semester, students explore the Seven Army Values and the Warrior Ethos, investigate the Profession of Arms and Army leadership, as well as an overview of the Army, and gain practical experience using critical communication skills. 1 semester hour

**MS 201 LEADERSHIP AND DECISION MAKING**

Students study, practice, and apply the fundamentals of Army leadership, officership, Army values and ethics, personal development, and small unit tactics at the squad level. They are required to demonstrate writing skills and present information briefings as preparation for development in becoming a successful future officer. This course includes reading assignments, homework assignments, small group assignments, briefings, case studies, and practical exercises, a mid-term exam, and a final exam. Students receive systematic and specific feedback on their leader attributes, values, and core leader competencies from their instructor, other ROTC cadre, and MSL IV cadets who will evaluate them using DA 4856 Developmental Counseling Form. MS 201 primarily is drawn from the Adaptability ALA. The outcomes are demonstrated through critical and creative thinking and the ability to apply troop leading procedures (TLP). Comprehension of the officer's role in leading change by applying innovative solutions to problems in concert with the principles of mission command. The Army profession is also stressed through leadership forum and a leadership self-assessment. 2 semester hours

**MS 202 ARMY DOCTRINE AND TEAM DEVELOPMENT**

Students study, practice, and apply the fundamentals of the leadership, officer skills, Army values and ethics, personal development, and tactics at the small unit level. They are required to demonstrate writing skills and present information briefings as preparation for development in becoming a successful future officer. This course includes reading assignments, homework assignments, small group assignments, briefings, case studies, and practical exercises, a mid-term exam, and a final exam. Students receive systematic and specific feedback on their leader attributes, values, and core leader competencies from their instructor, other ROTC cadre, and MSL IV cadets who will evaluate them using DA 4856 Developmental Counseling Form. MS 202 is primarily drawn from the Army profession and team work ALAs. 2 semester hours

**MS 301 TRAINING MANAGEMENT AND THE WARFIGHTING FUNCTIONS**

Students study, practice, and apply the fundamentals of Army leadership, officership, Army values and ethics, personal development, and small-unit tactics at the platoon level. At the conclusion of this course, students are capable of planning, coordinating, navigating, motivating, and leading a squad or platoon in the execution of a tactical mission during a classroom PE, a Leadership Lab, or during a Situational Training Exercise (STX) in a field environment. Successful completion of this course will help prepare students for success at the ROTC Cadet Leader Course (CLC), which they attend in the summer at Fort Knox, KY. This course includes reading assignments, homework assignments, small group assignments, briefings, case studies and practical exercises, a mid-term exam, and a final exam. Students receive systematic and specific feedback on their leader attributes values and core leader competencies from their instructor and other ROTC cadre and MSL IV Cadets who will evaluate them using the ROTC Leader Development Program (LDP) model. 3 semester hours

**MS 302 APPLIED LEADERSHIP IN SMALL UNIT OPERATIONS**

Students study, practice, and apply the fundamentals of Army leadership, officership, Army values and ethics, personal development, and small unit tactics at the platoon level. At the conclusion of this course, students will be capable of planning, coordinating, navigating, motivating, and leading a squad and platoon in the execution of a mission during a classroom PE, a Leadership Lab, or during a Leader Training Exercise (LTX). They will be required to write peer evaluations and receive feedback on their abilities as a leader and how to improve those leader skills that further develop them into successful officers. This course includes reading assignments, homework assignments, small group assignments, briefings, case studies and practical exercises, a mid-term exam, and a final exam. Students receive systematic

and specific feedback on their leader attributes, values, and core leader competencies from their instructor, other ROTC cadre, and MSL IV Cadets who will evaluate them using the Cadet Officer Evaluation System (OES). Successful completion of this course prepares students for the ROTC Cadet Leader Course (CLC), which they will attend in the summer at Fort Knox, KY. 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 THE ARMY OFFICER**

Students continue the transition and the focus of learning from being trained, mentored, and evaluated as an MSL III cadet to learning how to train, mentor, and evaluate underclass cadets. MSL IV cadets learn the duties and responsibilities of an Army officer and apply troop-leading procedures, the Army writing style, and the Army's training management and METL development processes during weekly training meetings to plan, execute, and assess battalion training events. Students learn to safely conduct training by understanding and employing the risk management process. Students learn how to use the comprehensive soldier fitness (CSF) program to reduce and manage stress. 3 semester hours

#### **MS 402 COMPANY GRADE LEADERSHIP**

Students study, practice, develop, and apply critical thinking skills pertaining to Army leadership, officer skills, Army values and ethics, personal development, and small unit tactics at platoon level. This course includes reading assignments, homework assignments, small group assignments, briefings, case studies, practical exercises, mid-term exam, and a capstone exercise in place of the final exam. For the capstone exercise, students are required to complete an oral practicum that will be evaluated on their knowledge of the 20 Army war fighting challenges (AWFC) covered throughout MS 401 and 402 coursework. In addition, students could be assessed on leadership abilities during classroom PE, leadership labs, or leader training exercises (LTX). Students receive systematic and specific feedback on their leader attributes, values, and core leader competencies from their cadre, PMS, and other MSL IV cadets who will evaluate them using the cadet officer evaluation report (COER). Students are required to write peer evaluations and receive feedback on their abilities as a leader and how to improve those leader skills. At the conclusion of this course, students will be able to plan, coordinate, navigate, motivate, and lead a platoon in future operational environments. Successful completion of this course will assist in preparing students for their Basic Officer Leader Course (BOLC) level B, and is a mandatory requirement for commissioning. 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

#### **CHNS 188, 288, 388, 488 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 202 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 202 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 202 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 202 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: French 202 or by permission of instructor. 3 semester hours

### **FREN 309 INTRODUCTION TO FRENCH LITERATURE**

This course introduces students to French literature. In addition to reading representative works in French, students study literary concepts such as theme, discourse, figurative language, dialogue, and text. Students read works from the four major categories of literary production—narrative, poetry, drama, and essay—with special attention given to the ways in which categories of genre are both constructed and challenged. Prerequisite: French 202 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, Djébar, Flaubert, Maupassant, and Sembène. The course is conducted in French. Prerequisite: French 301 or 302 or by permission of instructor. 3 semester hours

### **FREN 311, 312 READINGS IN FRENCH LITERATURE FROM THE MIDDLE AGES TO THE PRESENT I & II**

Selected works of French literature are studied and interpreted as a reflection of the development of literary genres and social, philosophical, and artistic changes throughout French history. The first half of the course considers texts from the Middle Ages through the 18th century. The second half of the course deals with illustrative examples from the 19th century to the present day. Prerequisite: FREN 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 Djébar, 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 Djébar 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. This course fulfills requirements for the GWS major and minor. 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**

The required capstone for the French major, this course is designed to enable seniors to conduct research and produce a work of original scholarship for presentation orally and in writing. 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**

#### **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****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 202 or permission of instructor. 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****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 *orfandad* 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. This course fulfills requirements for the GWS major and minor. 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**

The required capstone for the Spanish major, this course is designed to enable seniors to conduct research and produce a work of original scholarship for presentation orally and in writing. Prerequisite: Senior status. 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****SPECIAL TOPICS IN SPANISH**

Topics offered in response to student and faculty interest. 3 semester hours each

**GENERAL OFFERINGS****ML 330 SECOND LANGUAGE ACQUISITION: THEORY AND PRACTIS**

This course explores the depth and breadth of research in the field of Second Language Acquisition (SLA) since Chomsky. Empirical studies of particular interest focus on variables such as age, cognition, aptitude, motivation, personality, and cross-linguistic influences, and their effect on the rate and complexity of second language attainment. Theoretical topics include the critical period hypothesis, Chomsky's theory of universal grammar, Krashen's comprehensible input hypothesis, Van Patten's theories of input processing, Swain's pushed output hypothesis, Dreyfus's model for skills acquisition as well as more recent findings in neurolinguistics and emergentism. Students will be evaluated for their understanding of the major tenets of SLA and how contemporary research informs language instruction at the elementary, secondary and postsecondary levels. A final course project requires students to design and implement an SLA experiment in order to test an original pedagogical hypothesis. Prerequisite: Completion of two semesters of a language at the intermediate level, 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 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 I**

This course serves as an introduction to the fundamentals of music theory of the common practice period (1600–1900): notation, terminology, key and time signatures, rhythm, scales, intervals, and triads. 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. Satisfies the aesthetics but not the history general education requirement. Recommended for students with limited or no previous music instruction. Students with music-reading knowledge should enroll in MUS 123. 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 123 MUSIC THEORY II**

This course provides an introduction to melody, diatonic harmony, basic voice-leading, and ear training. Exercises include writing original second parts to given melodies, four-part harmonization of diatonic melodies, analysis of music literature excerpts, and rhythmic and melodic dictation. Satisfies the aesthetics but not the history general education requirement. Prerequisite: MUS 120, or music-reading knowledge and permission of instructor. 3 semester hours

**MUS 130 WIDENER CHORALE**

A performance-based class focusing on choral music from the Renaissance period up to the present day. This course provides students with an understanding of the aesthetic principles of choral music through technical exercises, analysis, and class discussion. Repertoire varies each semester. Students perform at least once a semester. Students may enroll in the class up to eight times. 0.5 semester hours

**MUS 140 CHAMBER ENSEMBLE**

A performance-based class focusing on chamber music literature from the Baroque period up to the present day. This course provides students with an understanding of the aesthetic principles of chamber music through technical exercises, analysis, and class discussion. Repertoire varies each semester. Students perform at least once a semester. Students may enroll in the class up to eight 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**

A performance-based class focusing on solo vocal repertoire from the classic era up to the present day. This course provides students with an understanding of the aesthetic principles of solo vocal music through technical exercises, analysis, and discussion. Repertoire varies each semester. Students perform at least once a semester. Students may enroll in the class up to eight times. 0.25 semester hours

**MUS 241 STRING INSTRUMENT STUDIO**

A performance-based class focusing on solo repertoire for string instruments (violin, viola, cello, string bass, and guitar) from the Baroque era up to the present day. This course provides students with an understanding of the aesthetic principles of solo string music through technical exercises, analysis, and discussion. Repertoire varies each semester. Students perform at least once a semester. Students may enroll in the class up to eight times. 0.25 semester hours

**MUS 242 KEYBOARD STUDIO**

A performance-based class focusing on solo repertoire for the piano from the Baroque era up to the present day. This course provides students with an understanding of the aesthetic principles of solo keyboard music through technical exercises, analysis, and discussion. Repertoire varies each semester. Students perform at least once a semester. Students may enroll in the class 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 post-minimalism. 3 semester hours

**MUS 309 AMERICAN MUSIC: 1890–1980s**

This course examines music in the United States from 1890 to the 1980s. Topics include art music, jazz, the musical, 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 381 MUSIC, WAR, AND THE ART OF PERSUASION (HONORS)**

This course examines compositions written in response to two historical events of the 20th century—World War II and the Vietnam War. These works, both American and European, reflect the emerging voice of the composer, moving from demonstrations of support, to commentary on war and wartime events, to protest. It offers students the opportunity to investigate the art of composition from the creator's perspective and to explore music's power to communicate and persuade. 3 semester hours

**MUS 390 THE AMERICAN MUSICAL**

The American musical is a unique genre, one that both delights and challenges its audience. It is simultaneously an entertaining combination of song, dance, and dialogue and a persuasive form of communication. It teaches us what and whom to care about and how to achieve this. Engaging us through music and drama, the creators and composers ask us to consider/reconsider ideas and concepts, and, potentially, change our behavior. This course explores selected 20th-century American musicals from a variety of perspectives, including musical style, the role of dance, identity, and ethnicity. Students who have taken MUS 391 may not receive credit for this course. 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. Students who have taken MUS 390 may not receive credit for this course. 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 SPECIAL TOPICS IN MUSIC**

Topics offered in response to student and/or faculty interest. 1–3 semester hours

## MUSIC STUDIO

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**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

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**NURS 103 NURSING SEMINAR**

The purpose of this course is two-fold. The course introduces students to the Widener experience while covering important skills needed to be a successful in the nursing program. This course explores several important aspects of nursing school success. Students are exposed to specific content relevant to the field of nursing. Teaching methods include group discussion and interactive activities. 1 semester hour

**NURS 125 INTRODUCTION TO NURSING**

This course introduces 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 and matriculation to SON. 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 202 INTRODUCTION TO GERONTOLOGICAL NURSING**

The number of older adults in the United States has been steadily increasing. Nurses require specialized knowledge and skills to address the health care needs of this diverse population. The emphasis of this course is on healthy aging and the provision of safe, effective, and culturally appropriate care of older adults. A wide range of health care needs, from primary prevention to end-of-life care, are explored. Through the service learning experience the student is introduced to evidenced-based strategies to help older adults improve and maintain their quality of life by maximizing their health, function, and independence. 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 written requirements for this course include reflection of the service learning experience, as well as focused assessments and interventions that promote the health of older adults.

**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: Matriculation to SON. 3 semester hours

**NURS 217 NUTRITION FOR RN HEALTH CARE**

This course, taught by a registered dietician, is designed to increase the nurse's knowledge of nutrition. The course content focuses on the theory of human nutrition, the nutritive process, and nutrition through the life cycle. The second part of the course focuses on a more in-depth application of nutrition to nursing practices. This includes units on the nursing process for nutrition care of patients and dietary interventions for alterations in the nutrition process. This course assists nurses in assessing nutritional status and initiating nursing interventions to improve or maintain overall health and wellness. Prerequisite: Registered nurse. 3 semester hours

**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**

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. Corequisites: NURS 305, 330, 333 or 334, 340, and 374. 1 semester hour

**NURS 305 PATHOPHARMACOLOGY I**

Pathopharmacology I is the first of three courses that establishes the foundational conceptual content upon which NURS 306 and 405 will be based. This course uses prototype disease and pharmacologic presentation. The students explore disease development as a multifactorial progression from normal physiology to pathology. The pharmacologic management of the disease states are explored with a drug prototype approach. Issues related to drug pharmacokinetics, pharmacodynamics, and safe medication practices are presented as they relate to care of diverse individuals across the lifespan. The course provides students with opportunities to recognize the impact of disease on the patient and evidence-based pharmacologic management. Prerequisites: All requirements of lower division. Corequisites: NURS 330, 333 or 334, 340, and 374. 2 semester hours

**NURS 306 PATHOPHARMACOLOGY II**

Pathopharmacology II is the second of three courses which build on the foundational conceptual content of the first course offering. A system-based approach to disease development as a multifactorial progression from normal physiology to pathology is used. This content is closely linked to the pharmacologic management of selected disease states. Issues related to drug pharmacokinetics, pharmacodynamics, and safe medication practices are presented as it relates to care of diverse individuals across the lifespan. The course provides the student with opportunities to recognize the impact of disease on the patient. Prerequisites: All requirements of lower division, and NURS 301, 305, 330, 340, and 375. Corequisites: NURS 331, 332, 333 or 334, and 374. 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 301, 305, 330, 333 or 334, 340, and 374. (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, and NURS 301, 305, 330, 340, and 374. Corequisites: NURS 306, 332, 333 or 334, and 375. (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. Corequisites: NURS 306, 331, 333 or 334, and 375. 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 301, 305, 330, 333 or 334, and 374. 2 semester hours

**NURS 371 RESEARCH DESIGN & EVIDENCE-BASED NURSING PRACTICE (WE)**

Best clinical practices are based on research. This course introduces nursing research and the science of evidence-based practice through an examination of research knowledge development with emphasis on evidence-based nursing practice, enhanced writing, and scholarly exchange. The topics of research design, 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. 4 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 or 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 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**

Pathopharmacology III is the final course, building on the content of the first two Pathopharmacology courses. A system-based approach to disease development as a multifactorial progression from normal physiology to pathology is used. This content is closely linked to the pharmacologic management of selected disease states. Issues related to drug pharmacokinetics, pharmacodynamics, and safe medication practices are presented as they relate to the care of diverse individuals across the lifespan. The course provides students with opportunities to identify and evaluate the impact of disease on the patient. Prerequisites: All junior level courses. Corequisites: NURS 432, 465 or 485, and 474. 2 semester hours

#### **NURS 430 SENIOR HONORS PROJECT**

Students conduct extensive readings and study in a particular area of nursing practice. The students' projects must demonstrate evidence of independent, abstract, analytical, and critical thinking. Presentation of the project is during Honors Week or on Student Project Day in the spring semester of the senior year. 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. 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 or 485, and 474. Corequisites: NURS 465 or 485, 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 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 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, 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 480 SENIOR NURSING ELECTIVE**

The senior nursing elective is an in-depth exploration of and analysis of a specific nursing content area. The course contains both service learning and writing components. The service-learning experience integrates meaningful community service with instruction and reflection to enrich the learning experience, teach civic responsibility, and strengthen communities specifically related to the topic of the nursing elective. The writing requirements focus on developing excellence in written communication. Prerequisites: all required lower-division and junior-level courses.

#### **NURS 481 SENIOR HONORS PROJECT**

Students conduct extensive reading and study in a particular area of nursing practice. The students projects must demonstrate evidence of independent, abstract, analytical and critical thinking. Presentation of the project is during Honors Week or on Student Project Day in the spring semester if the senior year. By invitation. 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 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

## **OPERATIONS MANAGEMENT**

#### **OPM 352 OPERATIONS MANAGEMENT**

No product or service can be produced without operations. In fact, nearly 80 percent of any organization is comprised of operations. 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 evaluate capacity, identify bottlenecks, and determine 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: MGT 210, 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 operations 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

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### 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. 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. 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. 3 semester hours

### PHIL 380 PHILOSOPHY OF ART

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. 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

#### SPECIAL TOPICS IN PHILOSOPHY

Topics offered in response to student and faculty interest. 3 semester hours each

## PHYSICAL EDUCATION

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*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 only. Early morning (6 a.m.) physical training. 1 semester hour

### 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 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 129 YOGA**

Reduce stress. Take yourself to a new level of mind body harmony and fitness. 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 139 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 142A ZUMBA AEROBICS**

The latest in Latin Aerobics. Join the fun. 0.5 semester hours

**PE 143A ABS, CORE, AND MORE**

Tighten and tone. This class will get it done. 0.5 semester hours

**PE 144A RUN YOUR FIRST 5K**

Get professionally trained to conquer a 3.2 mile run/race. 0.5 semester hours

**PE 148A 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 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 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 121 FUNDAMENTALS OF PHYSICS I**

This is the first course in a two-semester non-calculus introductory physics sequence. This sequence is designed for pre-physical therapy students who do not intend to major in science or engineering. Students are expected to be familiar with basic algebra, geometry, and trigonometry but need no background in calculus. Topics include mechanics, fluids, and thermodynamics. Students cannot claim credit for both the PHYS 121-122 and PHYS 141-142 sequences. Prerequisite: MATH 117 or a mathematics assessment score of level 3 or higher on the Mathematics Assessment. Corequisite: PHYS 143. 3 hours lecture. 1 hour recitation. 4 semester hours

**PHYS 122 FUNDAMENTALS OF PHYSICS II**

This course is continuation of PHYS 121. Topics include electricity, magnetism, wave motion, sound, and optics. Prerequisite: PHYS 121. Corequisite: PHYS 143. 3 hours lecture. 1 hour recitation. 4 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 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 121–122 sequence. Co- or Prerequisite: MATH 117. Corequisite: PHYS 143. 3 hours lecture. 1 hour recitation. 4 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. Corequisite: PHYS 144. 3 hours lecture. 1 hour recitation. 4 semester hours

**PHYS 143 COLLEGE PHYSICS I LABORATORY**

Lab experiments coordinated with topics in PHYS 141 and PHYS 121. 1 semester hour

**PHYS 144 COLLEGE PHYSICS II LABORATORY**

Lab experiments coordinated with topics in PHYS 142 and PHYS 122. 1 semester hour

**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 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 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**

This is a laboratory course in classic modern physics to be taken concurrently with PHYS 261 and is 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 281 PHYSICS SEMINAR**

This course is designed for physics majors. The course is a structured forum for students and faculty to discuss current topics in physics and astrophysics. A new topic is covered every meeting in a two-hour session. Readings are assigned by the instructor to facilitate the discussions. This course is offered only on a Pass/No Pass basis. Students must enroll in this course up to a total of 3 credits. 0.5 semester hours

**PHYS 309 MATHEMATICAL METHODS OF PHYSICS**

This course is 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 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. 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 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. 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 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 SPECIAL TOPICS IN PHYSICS**

Topics offered in response to student and faculty interest. 3 semester hours each

## **POLITICAL SCIENCE**

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#### **POLS 101 AMERICAN GOVERNMENT AND POLITICS**

An introduction to basic concepts, functions, and processes of politics and government, using the American system as a model. The course includes topics such as political socialization, constitutional government, legislative process, presidential leadership and bureaucracy, the role of the judiciary, elections, political parties, interest groups, and problems of civil rights. No prerequisites. 3 semester hours

#### **POLS 102 FOREIGN GOVERNMENT AND POLITICS**

This introductory course provides 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. No prerequisites. 3 semester hours

#### **POLS 201 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. The political structure and history of Pennsylvania are used for examples. No prerequisites. 3 semester hours

#### **POLS 203 THE (DIS)UNITED STATES: CONFLICT AND CONSENSUS IN AMERICAN POLITICS**

The contemporary American political system is often paralyzed by partisan and ideological conflict. Scholars disagree as to whether this is caused by a deeply divided citizenry or political elites interested in

their own agendas. This course studies the causes of conflict in American politics and explores how they affect specific areas of public policy. It also examines potential ways to achieve consensus on solutions to some of the country's problems. 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. No prerequisites. 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. No prerequisites. 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. 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. 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 225 GENOCIDE AND POLITICAL POWER**

The motivations for committing genocide or acts of genocide can vary; sometimes the desire to remove a particular group completely provides motivation; in other cases, acts of genocide occur in the course of a civil war. In this course, students explore the motivations of governments or groups to commit genocide; whether and how ethnic groups and nations recover from a genocide or ethnic cleansing; and what paths and solutions are open to states trying to rebuild in the wake of such atrocities. The continuing role of national identity and nationalism, and the actions taken or avoided by governments, provide a lens through which students examine the potential for gaining or regaining political power for targeted ethnic groups. No prerequisites. 3 semester hours

**POLS 226 THE DEVELOPING 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. Prerequisite: POLS 102. 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). No prerequisites. 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 and 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 COUPS, CARTELS, AND CARNEVALE: POLITICS IN 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. No prerequisites. 3 semester hours

**POLS 241 EAST ASIAN CIVILIZATION (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. No prerequisites. 3 semester hours

**POLS 242 JAPAN**

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. No prerequisites. 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. No prerequisites. 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. Prerequisite: POLS 102. 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. No prerequisites. 3 semester hours

**POLS 306 MODERN 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. No prerequisites. 3 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 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. Political science and international relations students are required to take this course in the junior year. No prerequisites. 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 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. No prerequisites. 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 218 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 218 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 BECOMING DEMOCRATIC: 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. Prerequisites: POLS 102, 204, or permission of instructor. 3 semester hours

**POLS 335 OPENING THE IRON CURTAIN: EASTERN EUROPE 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. Prerequisites: POLS 102, 204, 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 347 STAR WARS, STAR TREK, OR FIREFLY: NATION-STATES AND GLOBALIZATION**

In the TV series *Star Trek*, the world is ruled by a political structure called "The Federation." All former nation-states have been merged under one political system. In the universe of *Firefly*, the United States and China formed one political entity combining politics and languages on "Earth-That-Was." Is this the direction we are headed through globalization? Are nation-states becoming an artifact of the past. This course focuses on the political, economic, and social impacts of globalization on nation states around the world. It builds on and encompasses theories and arguments from international relations, comparative politics, and even American politics. Prerequisites: POLS 102 or POLS 204 or permission of instructor. 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 PRACTICUM**

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 INTERNSHIP**

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 SENIOR RESEARCH SEMINAR**

Preparation of the senior research paper in a specific field of political science. Required of all majors in political science. Prerequisite: POLS 310. 3 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

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**PROFESSIONAL WRITING**

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**PRWR 100 FUNDAMENTALS OF PROFESSIONAL WRITING (W)**

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. 3 semester hours

**PRWR 215 EFFECTIVE BUSINESS COMMUNICATION (W)**

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, and proposals. Prerequisite: ENGL 101 or 103. 3 semester hours

**PRWR 300 TECHNIQUES IN PROFESSIONAL WRITING (W)**

This course hones techniques of professional writing for students of varied academic disciplines. Common elements—notably editing, rhetoric, and visuals—are shared as a class. Discipline-specific elements—such as technical, science, health care, and advertising—are taught for teams with similar interests. In a consultative simulation of professional writing, students collaborate on an integrated capstone project, potentially for the model of experiential community engagement. 3 semester hours

**PRWR 405 PRACTICUM IN PROFESSIONAL WRITING (W)**

This independently conducted course bridges academic efforts with real-world experience. Specifically, communication pieces are on an approved topic. Pieces generated within this practicum can represent one or several genres, depending on scope and depth. Additionally prepared is a professional portfolio highlighting representative pieces from the entire program of study. 3 semester hours

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**PSYCHOLOGY**

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**PSY 105 INTRODUCTION TO PSYCHOLOGY**

A general introduction to scientific psychology, including biological psychology, development, learning, memory, psychological disorders, and social psychology. Psychology majors must receive a "C" or better in this course to satisfy psychology major requirements. 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. Psychology majors must receive a “C” or better in this course to satisfy psychology major requirements. 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.* 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. Psychology majors must receive a “C” or better in this course to satisfy psychology major requirements. 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. Psychology majors must receive a “C” or better in this course to satisfy psychology major requirements. Prerequisite: PSY 105. 3 semester hours

**PSY 206 PSYCHOLOGY OF WOMEN**

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. This course fulfills the requirements for the GWS major and minor. Prerequisite: PSY 105. 3 semester hours.

**PSY 207 PSYCHOLOGY OF ADDICTIVE BEHAVIORS**

This course is an overview of the biological, psychological, and social aspects of addictive disorders. Topics include alcohol and drug abuse, gambling, and other behavioral addictions. Treatment models and professional ethics associated with addiction counseling are explored. Prerequisite: PSY 105. 3 semester hours

**PSY 210 CROSS-CULTURAL PSYCHOLOGY**

Cross-cultural 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. Psychology majors must receive a “C” or better in this course to satisfy psychology major requirements. Prerequisite: PSY 105. 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). Psychology majors must receive a “C” or better in this course to satisfy psychology major requirements. 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. Psychology majors must receive a “C” or better in this course to satisfy psychology major requirements. Prerequisite: PSY 105. 3 semester hours

**PSY 213 ADOLESCENT PSYCHOLOGY**

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. Psychology majors must receive a “C” or better in this course to satisfy psychology major requirements. 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. Psychology majors must receive a “C” or better in this course to satisfy psychology major requirements. Prerequisite: PSY 105. 3 semester hours

**PSY 216 COMMUNITY PSYCHOLOGY**

This course focuses on the application of psychological principles to understanding and addressing community issues. Students take an ecological or systemic perspective on human behavior, paying particular attention to the influence of cultural and contextual influences on the human experience. This course also focuses on the prevention of problems, promotion of health, and the empowerment of individuals and communities. Topics for exploration include poverty, family, food security, community violence, education, health, stress, and coping. This course has an optional service learning component. 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. Psychology majors must receive a “C” or better in this course to satisfy psychology major requirements. 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. Psychology majors must receive a “C” or better in this course to satisfy psychology major requirements. 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. Psychology majors must receive a “C” or better in this course to satisfy psychology major requirements. Prerequisites: PSY 105. 3 semester hours

### **PSY 236 PSYCHOLOGY OF EATING AND DRINKING**

This course covers the biological underpinnings of how, what, when, and why we eat and drink the things that we do. Historical perspectives as well as modern day theories are covered, as are relevant literature on such topics as food deserts, obesity, the relationship between food and disease, the influence of plating on consumption, food preferences, and sustainability. Social justice issues related to food availability and marketing practices are also covered. Psychology majors must receive a “C” or better in this course to satisfy psychology major requirements. Prerequisite: PSY 105. 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. Psychology majors must receive a “C” or better in this course to satisfy psychology major requirements. 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 247 UNDERSTANDING AND MANAGING STRESS (SAME AS CJ 247)**

This course focuses on the research surrounding the physiological underpinnings of stress, the positive and negative consequences of stress, and specific stress management skills. Understanding and Managing Stress is a service learning course that provides a special opportunity for Widener students and prison inmates to learn together in classes held at the Chester State Correctional Facility. This unique classroom environment creates an understanding of the similar and unique stressors of college and prisoners, offering lively and educationally beneficial discussions throughout the semester. Prerequisite: PSY 105 or CJ 105; sophomore standing or above; PSY or CJ major. 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 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 parapsycholog-

ical 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 275 DRUGS & THE BRAIN**

This course is an introduction to the behavioral, physiological, and molecular effects of therapeutic, recreational, and addictive drugs. Topics include structure and function of the neuron, principles of psychopharmacology, neurotransmitter systems, common mechanisms of drug action, substance abuse and addiction, and treatments for psychiatric disorders. Psychology majors must receive a “C” or better in this course to satisfy psychology major requirements. Prerequisite: PSY 105. 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 293 CAREERS IN PSYCHOLOGY**

Students in this course learn about different career opportunities in psychology, acquire information about graduate programs, and obtain the skills necessary for a post-baccalaureate career endeavor in psychology. Students develop their own well-informed and customized education plan. Students network with professionals who are directly and indirectly involved with the psychology major. In addition, students learn the logistics of setting up a practicum and an internship. Students learn about ethical and professional development issues pertinent to the sites in which they work, the enrollment process, placement site supervision requirement, and interviewing skills relevant to acquiring a practicum or internship position. This course is a prerequisite for PSY 394 Applied Practicum and PSY 395 Clinical/Counseling Practicum. Students should take this course during the sophomore year. Prerequisite: PSY 105 (grade C or better). 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. Psychology majors must receive a “C” or better in this course to satisfy psychology major requirements. Prerequisites: PSY 105 (grade C or better), PSY 385 (grade C or better), and PSY 387 (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. Psychology majors must receive a “C” or better in this course to satisfy psychology major requirements. Prerequisites: PSY 105 (grade C or better), PSY 385 (grade C or better), and PSY 387 (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. Psychology majors must receive a “C” or better in this course to satisfy psychology major requirements. Students take either PSY 235 or PSY 333; they may not take both. Prerequisites: PSY 105 (grade C or better), PSY 385 (grade C or better), and PSY 387 (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. Psychology majors must receive a “C” or better in this course to satisfy psychology major requirements. Prerequisites: PSY 105 (grade C or better), PSY 385 (grade C or better), and PSY 387 (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. Psychology majors must receive a “C” or better in this course to satisfy psychology major requirements. Prerequisites: PSY 105 (grade C or better), PSY 385 (grade C or better), and PSY 387 (C or better). 4 semester hours

**PSY 338 HUMAN GROWTH AND DEVELOPMENT II WITH LABORATORY**

Human Growth and Development II with Laboratory focuses on adult development and aging and changes in physical, cognitive, and psychosocial domains. The specific goals of this class are: 1) to study the process of aging in adulthood, including the gains and losses associated with physiological and psychological aging; 2) to understand the social influences on this process, such as culture, race, income, age, and social class; and 3) to increase awareness of aging and ageism. In addition, students learn about the research process in the field of adulthood and aging. This includes the use of qualitative and quantitative research methodologies, statistical analysis, interpretation of results, and writing an empirical research article. This laboratory fulfills a social/developmental advanced elective. Students take either PSY 212 or PSY 338; they may not take both. Psychology majors must receive a “C” or better in this course to satisfy psychology major requirements. Prerequisites: PSY 105 (grade C or better), PSY 385 (grade C or better), and PSY 387 (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. Psychology majors must receive a “C” or better in this course to satisfy psychology major 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 385 STATISTICAL METHODS WITH SPSS  
LABORATORY FOR PSYCHOLOGY**

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 methods for graphing data, descriptive statistics such as measures of central tendency and dispersion, correlation and regression, 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 social sciences, is essential to this course. Students learn how to enter and analyze data, interpret results, and perform a wide range of statistical functions using SPSS. This course is required of psychology majors. Students may not receive credit for both PSY 385 and another statistical methods course such as ALLH390, CJ 380, ENGR 315, MATH 114, MATH 373, POLS 310, QA 251, or QA 252. This course may not be used to satisfy the social science general education requirement. Psychology majors must receive a "C" or better in this course to satisfy psychology major requirements and advance to PSY 387. Prerequisites: PSY 105 (grade C or better) and completion of MATH 116 or above with a grade of C or better. 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. Psychology majors must receive a "C" or better in this course to satisfy psychology major requirements. Prerequisite: Junior status and 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 394 APPLIED PSYCHOLOGY PRACTICUM**

The Applied Psychology Practicum is an experiential learning course that provides students with an opportunity to earn academic credit for discipline-specific career-related work. The practicum enables students to engage in fieldwork in an applied setting. Placements include I/O psychology, human resources, physical therapy clinics, research, government agencies, rehabilitation centers, and other appropriate settings. Students are required to work 75 hours per semester for three credits under the supervision of a practicing professional. They are also required to serve as an ambassador for Widener University and for the Psychology Department at the placement site. Students connect their field experiences to the psychology content through reflection and discussion in the seminar. Prerequisites/corequisites: Two psychology courses at or above the two-hundred level; completion of PSY 293 with a grade of a "C" or better or with permission of

instructor for students enrolled in the 3+3 PSY/Pre-PT program; a cumulative GPA of at least a 2.80 and a GPA in the psychology major of at least a 3.0; must be a junior (students in the 3+3 program can take this course during their sophomore year); and complete a practicum application and all other corresponding paperwork with the psychology practicum coordinator. 3 semester hours

**PSY 395 CLINICAL-COUNSELING PSYCHOLOGY  
PRACTICUM**

Students in this course gain valuable training and work experience at human service agencies, and serve as an ambassador for Widener University and for the Psychology Department at the placement site. Placements include mental-health facilities, educational intervention programs, school systems, drug and alcohol counseling programs, and other human service agencies in which students are able to exercise helping skills and put their knowledge of clinical/counseling psychology into practice. Students are required to work 75 hours per semester for three credits under the supervision of the field site supervisor at the placement site. In addition, students are required to connect their experiential learning experiences to the clinical/counseling psychology content through reflection and discussion in the seminar. Prerequisites/corequisites: Two psychology courses at or above the two-hundred level (one course must be in abnormal psychology); completion of PSY 293 with a grade of a "C" or better; a cumulative GPA of at least a 2.80 and a GPA in the psychology major of at least a 3.0; must be a junior; and complete a practicum application and all other corresponding paperwork with the psychology practicum coordinator. 3 semester hours

**PSY 396 ADVANCED PRACTICUM**

The advanced practicum course is an experiential learning course in which students have an opportunity to gain extensive "real world" experience by working with industry leaders, psychologists, and psychology-related professionals in organizations involved in psychological research and practice. Placements include research, human service agencies, service delivery, human resources, and government agencies. This course serves as an alternate for an internship and provides students with in-depth training with another population at a different placement site than experienced in the applied or clinical-counseling practicum courses. Students are required to complete 75 hours of fieldwork and connect their fieldwork to the psychology content in the seminar. Students cannot take PSY 396 and PSY 423/424. Prerequisites/corequisites: A "C" or better in either PSY 394 or PSY 395; a cumulative GPA of at least a 2.80 and a GPA in the psychology major of at least a 3.0; must be a senior; and complete a practicum application and all other corresponding paperwork with the practicum/internship coordinator. 3 semester hours

**PSY 409, 410 SENIOR RESEARCH IN PSYCHOLOGY**

This two-semester course series involves designing and conducting an independent research project in psychology. To successfully complete this course series, students must pass both PSY 409 and 410. Note that if a student successfully passes PSY 409 but does not pass PSY 410, both courses must be repeated to meet requirements for graduation. Prerequisites: Minimum grade of B in PSY 385 and 387 and permission of the Department of Psychology. 3 semester hours each

**PSY 423, 424 PSYCHOLOGY INTERNSHIP**

The psychology internship serves as one of the "capstone" experiences for senior psychology majors. This course series provides experiential learning in which students put their knowledge of psychology into practice. Students are required to gain extensive, real-world experience in a clinical or counseling setting. Placements include mental-health facilities, drug and alcohol counseling programs, educational intervention programs and school settings, and other human service agencies in which students are able to exercise helping skills and put their knowledge of clinical/counseling psychology into practice. Students complete 150 hours over the course of two semesters for a total of 6 credits. In addition, students connect the clinical/counseling context to the psychological practice by writing a paper in which they integrate psychological theories and research with fieldwork aspects of the clinical/counseling internship. Students cannot take both PSY 396 and PSY 423/425. Psychology majors only. Prerequisites/corequisites: A "C" or better in either PSY

394 or 395; a cumulative GPA of at least a 2.80 and a GPA in the psychology major of at least a 3.0; must be a senior; and complete an internship application and all other corresponding paperwork with the practicum/internship coordinator. 3 semester hours each

#### **PSY 430 CURRENT ISSUES IN PSYCHOLOGY**

This capstone 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 (grade C or better) and senior standing. 3 semester hours

#### **PSY 188, 288, 388, 488**

##### **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 or 118 (or equivalent) 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**

#### **RDG 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 Center for 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 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 190 INTRODUCTION TO RESEARCH**

This course introduces students to research and the process necessary to complete successful research projects in the natural sciences. Students define and explore research questions that face modern scientists. To accomplish this, students gather and evaluate pertinent scientific information, use techniques to complete a successful literature review, acquire publically available information, retrieve electronic and print sources, and synthesize this information to answer scientific questions. The course incorporates a variety of learning methodologies including lecture, discussion, and small group work. Students are exposed to scientists working on current research projects to provide them with a professional research perspective. The course is only open to those students in the SIRAE program. 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

#### **SCI 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. Does not satisfy the general education or distribution requirement in science. 1.5 semester hours

## **SOCIAL WORK**

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### **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**

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. This course fulfills the requirements for the GWS major and minor. 3 semester hours

### **SW 229 FAMILIES AT RISK**

This course focuses on the dynamics of challenges families face to include, child maltreatment, substance abuse, domestic violence, trauma, homelessness, and elder abuse. It also looks at environmental factors influencing families to include poverty, racism, and oppression. Students look at the social policy and its impact on "at risk" families. Students explore evidence-based, and strength-based treatment modalities to look at ways to help individuals and families overcome challenges and build resiliency. No prerequisites. 3 semester hours

### **SW 260 ADDICTIONS**

This course is designed to give students an overview of the dynamics of addiction. Students 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**

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. This course fulfills the requirements for the GWS major and minor. 3 semester hours

### **SW 311 NEUROBIOLOGY FOR SOCIAL WORKERS**

This course increases knowledge of the biological component of the bio-psycho-social perspective to help students better understand human behavior, as well as the relationship between the brain and social interaction. With an emphasis on the mind and brain, students explore issues and problems, including developmental issues such as attachment/bonding, emotions, memory, and the impact of stress/trauma. Students delve into some of the recent research related to secondary traumatization, legacy trauma, and intergenerational

issues. This course focuses on using multiple perspectives in the generalist application of neurobiology research to inform assessment and intervention with emphasis placed at the micro and mezzo levels of practice. The framework of the course is based on social work values and the ethical decision-making process, as illuminated by the NASW Code of Ethics. A bio-psycho-social and cultural emphasis is applied to the various problem areas and disorders covered. No prerequisites. 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 focuses on understanding losses and appropriate interventions for clients who endure loss across the lifecycle, including death as well as other losses such as chronic illness. Topics covered are losses across the lifespan, loss of a child, loss of an adolescent, parental loss, spousal/partner loss, and loss of an adult child, loss in later life, disenfranchised loss (domestic partners, gay and lesbian partners), the dying patient, and end-of-life issues. Theoretical perspectives are drawn from both traditional and postmodern approaches to grief and loss. Issues of cultural diversity are addressed throughout the course. A service-learning experience provides an opportunity for students to gain practical skills in working with individual and community organization end-of-life needs, to experience an interdisciplinary approach to service provision, and to gain an understanding of the importance of civic engagement. Through service learning, students come into contact with dying persons, their families, and the staff who care for this population. Students strengthen their interpersonal skills, competence in the field, professional leadership abilities, and understanding of responsible citizenship. This is a service-learning course. No prerequisites. 3 semester hours

#### **SW 340 AGING AND SOCIAL WORK PRACTICE**

Social work with older adults is one of the fastest growing areas of practice in the 21st century. The graying of the baby boomer generation combined with improved medical technology has led to an overwhelming number of individuals into the "third age." Despite the staggering demographic figures and future needs of the "senior boom," there continues to be a paucity of students interested in practice, policy, and research with older adults. The purpose of this interdisciplinary course is to develop future skilled leaders in the field of geriatric social practice and provide them with a comprehensive overview of the field of gerontology from an interdisciplinary perspective. Students completing this course are prepared to work with older adults and their informal/formal support systems. No prerequisites. 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: SW 423. 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**

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**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 CIVIC ENGAGEMENT AND 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**

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. This course fulfills the requirements for the GWS major and minor. Prerequisite: SOC 105. 3 semester hours.

**SOC 204 SOCIAL PROBLEMS**

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 212 SEXUALITIES (FORMERLY 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: SOC 105. 3 semester hours

**SOC 215 THE FAMILY**

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 course fulfills the requirements for the GWS major and minor. Prerequisite: SOC 105. 3 semester hours

**SOC 235 RACE RELATIONS 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 239 WOMEN AND DEVELOPMENT IN LATIN AMERICA (SAME AS GWS 239 AND ANTH 239)**

This team-taught service-learning travel course engages students in thinking about the challenges of development in Latin America, with particular emphasis placed upon the gendered dimensions of both development theory and practice. Through a combination of readings, films, lectures, discussion, and travel to a developing region in Mexico, Central America, or South America where women play key roles in development, students will be challenged to understand the burdens placed on women in underdeveloped nations as well as the roles that women have played in that region's development. During all phases of this course, students are expected to reflect on their readings, service, and other experiences. This course fulfills the requirements for the GWS major and minor. 3 semester hours

**SOC 240 GENDER AND INTERNATIONAL DEVELOPMENT**

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. This course fulfills the requirements for the GWS major and minor. 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 257 SEX AND GENDER IN SOCIETY (FORMERLY 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. This course fulfills the requirements for the GWS major and minor. Prerequisite: SOC 105 or GWS 101. 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**

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 course fulfills the requirements for the GWS major and minor. This is a writing-enriched course. 3 semester hours

**SOC 286 UNIONS, LABOR, AND SOCIETY (FORMERLY SOC 325)**

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 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. No prerequisites. 3 semester hours

**SOC 312 SEXUALITIES**

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. This course fulfills the requirements for the GWS major and minor. Prerequisites: SOC 105. 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 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 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**

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. This course fulfills the requirements for the GWS major and minor. 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. Prerequisites: SOC 105, junior or senior standing, or permission of instructor. 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. 1–6 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. Prerequisite: Senior sociology majors and minors or permission of instructor. 1 semester hour

**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. 3–9 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****SPECIAL TOPICS IN SOCIOLOGY**

Topics offered in response to student and faculty interest. 3 semester hours each

**SOCIAL SCIENCE****SSCI 301 UNDERSTANDING DIVERGENT LIVES (HONORS)**

Using the true story of two men who grew up with remarkably shared beginnings but led incredibly divergent lives, one of success versus one of incarceration, this course investigates how life events can translate into turning points from a variety of perspectives. People have experiences in life that can act as turning points, greatly altering their trajectory, and this course examines how the lives of individuals with very similar backgrounds can end with extraordinarily different outcomes. Criminological, political, sociological, and religious themes are discussed. 3 semester hours

**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 350 INTERNATIONAL SPORT MANAGEMENT—BARCELONA**

This is an intensive international course for students that involves active learning from sport management professionals and faculty in the United States and Spain and finishes with travel to Spain for a week. This course provides students with engaging, impactful experiences where knowledge obtained from classroom theory is integrated and magnified through close interactions with management professionals in Spain. While in Spain, students attend marketing and management presentations, participate in interactive events, visit European sport and business venues, and network with sport and business managers. Grading is based on the following elements: participation, journal entries, a final reflection project, and tests. This course may count as a sport management elective, an international elective for management majors concentrating in human resources, marketing or operations, or as a management elective for international business majors. 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 420 VENUE MANAGEMENT**

This course takes a comprehensive look at the rapidly growing discipline of venue management. Sport (amateur and professional) and entertainment activities (concerts, family shows, special events) are held in facilities that create unique opportunities for the sport and entertainment business manager. Those unique opportunities are examined in-depth in this course through both traditional textbook and off-site experiential learning. (Note: students are required to provide transportation for off-site field trips.) Featuring a comprehensive study of the facility business from booking acts to event promoting and management, this course is designed to prepare students for a career in the rapidly growing industry of venue management. Prerequisite: MKT 300. 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 497 CAPSTONE INTERNSHIP  
IN SPORTS MANAGEMENT**

This course provides opportunities for students to synthesize their understanding of the sports management coursework through the application of classroom instruction in a work setting. Students work on projects developed with industry partners and prepare reports on these experiences with their academic and industry supervisors. Note: This course substitutes for MGT 451 in the sports management curriculum and is only available to sports management majors. Prerequisite: Senior standing, completion of all SBA core business courses with the exception of MGT 452, one 300-level economic course, and at least a 2.5 cumulative GPA. 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. Note: This course can only be taken pass/no pass as a free elective. 3 semester hours

## **THEATER**

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**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**

This introductory course immerses students in the work of the three principle aesthetics of theater: playwriting, directing, and acting. Beginning with a review of theater history (from Greek tragedy to the Broadway musical), this class examines how theater has evolved through aesthetic innovations in genre, style, and theory. By analyzing a range of historically significant plays and performances (e.g., *Oedipus Rex*, *Hamlet*, *Faust*, *Hedda Gabler*), students explore how these artists have individually and collaboratively influenced the nature of theatrical production. Throughout the course, students examine texts from the perspective of theater aesthetics, following production from its inception to its performance. This course satisfies the humanities distribution requirement for aesthetics/philosophy. 3 semester hours

**THTR 104 ELEMENTS OF THEATER PRODUCTION**

This introductory course examines the elements of theater arts with a focus on production end design (scenic design, lighting design, sound design, costume design, etc.). Through a historical study of the advent of and advances in theater arts, this course explores the importance of each element in its contribution to the collaborative art of theater. From general design theory to theater-specific design principles, students evaluate, critique, and analyze design in live performance, as well as apply their knowledge to developing both historically accurate and contemporarily innovative production designs. This course satisfies the humanities distribution requirement for aesthetics/philosophy. 3 semester hours

**THTR 105 STAGECRAFT WORKSHOP**

This course introduces the student of theater 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 work on improvisation and monologues and perform theater exercises. The plays to be performed in any given semester may provide the texts for the course. This course satisfies the humanities distribution requirement for aesthetics/philosophy. 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

## TITLE IX

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Title IX of the Education Amendments of 1972 ("Title IX") prohibits discrimination based on sex and gender in educational programs and activities that receive federal financial assistance. Such programs include recruitment, admissions, financial aid and scholarships, athletics, course offerings and access, hiring and retention, and benefits and leave. Title IX also protects students and employees from unlawful sexual harassment (including sexual violence) in university programs and activities. In compliance with Title IX, the university prohibits discrimination and harassment based on sex in employment as well as in all programs and activities.

The university's Title IX coordinator monitors compliance with Title IX and its accompanying regulations. Individuals with questions or concerns about Title IX and/or those who wish to file a complaint of noncompliance may contact the Title IX coordinator or deputy coordinators: The university's Title IX coordinator is Director of Employee Relations Alison Kiss Dougherty, One University Place, Chester, PA 19013; tel. 610-499-1301; e-mail [akdougherty@widener.edu](mailto:akdougherty@widener.edu). The university has also appointed several deputy Title IX coordinators: For students on the Chester, PA, campus and Extended Learning students: Assistant Dean for Student Development and Engagement Catherine Feminella, One University Place, Chester, PA 19013; tel. 610-499-4392; e-mail [cafeminella@widener.edu](mailto:cafeminella@widener.edu); or Chief of Campus Safety Kevin Raport, tel. 302-477-2202; e-mail [kjraport@widener.edu](mailto:kjraport@widener.edu). For students and employees on the Wilmington, DE, campus: Dean of Students Susan Goldberg, Widener University Delaware Law School, 4601 Concord Pike, Wilmington, DE 19803; tel. 302-477-2173; e-mail [slgoldberg@widener.edu](mailto:slgoldberg@widener.edu). For students and employees on the Harrisburg, PA, campus: Supervising Attorney and Director, of Student Organizations Mary Catherine Scott, Widener University Commonwealth Law School, 3800 Vartan Way, Harrisburg, PA 17106; tel. 717-541-0320; e-mail [mescott9055@widener.edu](mailto:mescott9055@widener.edu).

The U.S. Department of Education's Office for Civil Rights (OCR) is the division of the federal government charged with enforcing compliance with Title IX. Information regarding OCR can be found at: [www.ed.gov/about/offices/list/ocr/index.html](http://www.ed.gov/about/offices/list/ocr/index.html). Questions about Title IX may be directed to OCR as well as to the university's Title IX coordinator or deputy coordinators.

## UNIVERSITY POLICY

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